Environmental and Geological
Scientists and Engineers

W5877 Pheasant Lane • Plymouth, WI 53073 • 920.918.9024

December 21, 2020

Ms. Alice Egan
Wisconsin Department of Natural Resources
PO Box 8911
Madison, WI 53708-8911

Re: **Former Shorewood Queensway Cleaners**
4300 N. Oakland Avenue
Shorewood, Wisconsin
WDNR BRRTS Case No. 03-41-586899

Subject: **Site Investigation Work Plan for Petroleum Release**

Dear Ms. Egan:

On behalf of Former Shorewood Queensway Cleaners, Sand County Environmental, Inc. has prepared this *Site Investigation Work Plan* that describes soil and groundwater sampling to assess the extent of recently-discovered petroleum contamination. As you know, extensive work related to the drycleaning solvent release at the Property has defined the extent of impacts and evaluated vapor migration and utility corridors. The proposed investigation efforts related to petroleum are focused on the southwest corner of the Property, where there has been little assessment conducted. We anticipate using the results from the proposed investigation to conduct further remedial action efforts, primarily related to soil and free product removal.

This Work Plan includes a request for a variance from NR 141 Well Construction requirements so we can use small diameter monitoring wells to supplement the existing 12 monitoring well network.

No formal WDNR review is requested and no fee has been submitted, but we will contact you to discuss the scope prior to implementation.

If you have any questions I look forward to hearing from you. I can be reached at 920.918.9024 or ken.ebbott@sandcountyenv.com.

Sincerely,

SAND COUNTY ENVIRONMENTAL, INC.

Kendrick A. Ebbott, PG, CGWP
Project Manager

Enclosure: *Site investigation Work Plan for Former Shorewood Queensway Cleaners*

cc/enc: Mr. Tom Schafer, 4300 Oak LLC, via email only

December 2020

Site Investigation Work Plan

for

Former Shorewood Queensway Cleaners
4300 N. Oakland Avenue
Shorewood, Wisconsin

prepared on behalf of

4300 Oak LLC
Milwaukee, Wisconsin

Amherst Office
151 Mill Street
PO Box 218
Amherst, WI 54406
Ph 715.824.5169

Cedarburg Office
668 Martin Drive
Cedarburg WI 53012
Ph 414.791.6030

Plymouth Office
W5877 Pheasant Lane
Plymouth, WI 53073
Ph 920.918.9024

Rhinelander Office
580 Shepard Street
Suite A
Rhinelander, WI 54501
Ph 715.365.1818

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SIGNATURE PAGE

I, Kendrick A. Ebbott, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, 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.

12/21/2020

Kendrick Ebbott, PG, CGWP — Date
Project Manager/Senior Geologist

EXECUTIVE SUMMARY

A site investigation is necessary at the Former Shorewood Queensway Cleaners at 4300 N. Oakland Avenue in Shorewood, WI. Extensive soil, groundwater, and vapor assessments and remedial actions have already been conducted on the property related to a release of drycleaner solvent. During soil remedial excavation activities conducted in July 2020, three previously undocumented underground storage tanks (USTs) containing petroleum were identified and removed. Contaminated soil surrounding the tanks was removed, and analysis of excavation-perimeter soil samples indicated no significant detection of petroleum constituents. However, one monitoring well installed in the backfill at the location of the excavated tanks contained several feet of free petroleum product, and a site investigation is needed to define the extent of petroleum contamination.

Previous investigation activities have defined the site conditions related to the release of petroleum in a general sense, but an investigation related to petroleum-specific compounds in the immediate vicinity of the former tanks, piping, and dispenser is necessary.

Eight direct-push (Geoprobe) borings with four completed as small diameter wells are proposed for installation, with testing of soil for petroleum volatile organic compounds (PVOCs) plus naphthalene and 1,2-dichloroethane, lead, and gasoline range organics (GRO) as an indicator of other potential petroleum substances that don't respond to the standard VOC scan. A variance from the NR 141 well construction requirements is requested for installation of the small diameter wells.

Groundwater sampling from all site monitoring wells is proposed with analysis of full volatile organic compounds (VOCs), and dissolved lead at select locations.

Upon receipt of the laboratory analytical results, the information will be processed and interpreted. A brief email communication of the findings will be provided to the Wisconsin Department of Natural Resources (WDNR), along with a plan for further soil and free product / groundwater remedial actions, which will be implemented after discussing the situation with the WDNR.

The investigation is planned for January and February 2021, with reporting provided in March, and the remedial action expected in late March or April 2021.

Following the remedial action, a documentation report will be prepared for submittal to the WDNR that presents the results of the combined drycleaner excavations in 2019 and 2020, and the petroleum excavation activities in 2020 and anticipated for spring 2021.

1 INTRODUCTION

1.1 Purpose of this Work

Further investigation efforts are planned at the above-referenced site to address petroleum contamination related to former gas station operations at the former Shorewood Queensway Cleaners (the Property). This document provides information about the planned scope of work and methods. As described in other submittals to the Wisconsin Department of Natural Resources (WDNR), extensive prior investigation and remediation efforts have been completed, including excavation across most of the Property in 2019 and 2020, under the WDNR Bureau or Remediation and Redevelopment Tracking System (BRRTS) ID number 02-41-552089.

1.2 Objectives

The primary objective of the site investigation is to assess the extent of petroleum product observed in monitoring well MW-10 so that remedial efforts, likely excavation and free product / groundwater removal, can address the contamination. The proposed borings will assess the extent of soil and groundwater contamination near the former petroleum tanks and piping. The Work Plan meets WDNR submittal requirements.

1.3 Interested Parties

The facility is owned and operated by 4300 Oak LLC, who purchased the property in 2018 from the former Shorewood Queensway Cleaners drycleaning store owner and operator, Ms. Shirley Carlson.

1.3.1 Responsible Party

Mr. Tom Schafer
4300 Oak LLC
2551 N. Wahl Avenue
Milwaukee, WI 53211

1.3.2 Regulatory Agency Project Manager

Ms. Alice Egan
Senior Hydrogeologist
Wisconsin Department of Natural Resources
2300 N Dr. Martin Luther King Drive
Milwaukee, WI 53212-3128
Email: A.Egan@wisconsin.gov

1.3.3 Environmental Consultant

Mr. Kendrick Ebbott,
Senior Geologist
Sand County Environmental, Inc.
W5877 Pheasant Lane
Plymouth, WI 53073
Email: Ken.Ebbott@sandcountyenv.com
Phone: 920.918.9024

1.4 Property Information

1.4.1 Property Location

The Property is located in the Village of Shorewood, Milwaukee County, Wisconsin on the main commercial street in the Village of Shorewood, N. Oakland Avenue. The Property is located on the northeast corner of the intersection with E. Marion Street (**Figure 1**).

Former Shorewood Queensway Cleaners
4300 N. Oakland Avenue
Shorewood, WI 53211

The public land survey location of the Property is part of the Northwest quarter of the Southwest quarter of Section 3, Township 7 North, Range 22 East. The WTM coordinates are 691,953 meters north, 293,500 meters east.

The Property currently consists of a rectangular-shaped parcel measuring roughly 100 feet north / south by 150 feet east / west. The Property consists of two adjacent parcels, the 4300 N. Oakland address where the former gas station and drycleaning building / operations were conducted, and the 1808 E. Marion Street address to the east, where a residence was located.

All structures were demolished in December 2019, and redevelopment of the combined parcels is anticipated, although no development plan has been specified. The likely future use will include a commercial structure, with retail or offices on the ground level, and potentially residential or commercial tenants on upper floors. Underground parking beneath the building may be part of a future development.

1.4.2 Property History

Historic property use includes operation as a drycleaner from 1960 to 2017, when drycleaning operations ceased. Mr. Schafer/4300 Oak LLC acquired the Property from Ms. Shirley Carlson, who was the drycleaning operator for 40 years, from 1977 to 2017. Another owner started the drycleaning operations in 1960.

Prior to use as a drycleaner, a gasoline service station operated on the Property, but no details are known regarding the gas station operations. Based on aerial photographs, the former drycleaning building footprint was present in 1963, and the building expanded southeast in 1967 and then was further expanded to the east by 1970, extending approximately 10 feet east from the original building.

All aboveground structures were removed in 2019, and footings were removed in 2020.

Based on the observed tanks and piping, the gasoline service station building likely had the same layout as the original drycleaning building, with the underground former gasoline tanks located on the south center of the 4300 N. Oakland Property, and the fuel oil tank adjacent to the southwest corner of the building (**Figure 2**). Piping ran to the northwest from the gas tanks toward Oakland Avenue, with dispensers likely near the western center of the Property.

The dates of operation of the gas station are not known, but likely terminated by 1960, when drycleaning operations reportedly began.

1.4.3 Adjacent Properties and Petroleum Use

Neighboring properties (**Figure 2**) include a multi-tenant commercial building housing offices and a clothing store to the north (4312 N. Oakland). The drycleaning impacts from the 4300 N. Oakland Property (Former Queensway Cleaners) extends beneath the basement of the 4312 N. Oakland building. There is an active vapor mitigation system operating to capture subslab vapors beneath the 4312 building basement floor.

To the south across E. Marion Street, and to the west and southwest across N. Oakland Avenue are commercial buildings that were all former gasoline service stations. Historically all four corners of the intersection of N. Oakland and E. Marion Street had gas stations. **Figure 3** displays the layout.

In 1995, prior to completion of planned Village improvements, soil borings were advanced in the right of way of N. Oakland Avenue at nine properties. Borings were advanced to a depth of only three feet, and included two borings west of the Property, two borings across the street on the west side of N. Oakland Avenue, and two borings in the right of way immediately south of East Marion Street. Samples obtained adjacent to the Property (SB-07 and SB-08) did not contain petroleum constituents, although dry cleaning solvent impacts were found in boring SB-07 at low concentrations (**Figure 4**). No petroleum was present west of N. Oakland Street at the 4301 N. Oakland right of way, but petroleum was present at elevated levels in the right of way of the adjacent property to the south (4230 N. Oakland). It is likely this contamination persists, as remedial excavation activities beneath the sidewalk were not likely completed.

The parcel to the south at 4230 N. Oakland is currently the UPS store, a package shipping business. A release of petroleum from underground storage tanks (USTs) at the former Mailboxes Etc site (BRRTS # 03-41-150637) was detected in 1997 and closed by the State in 2002. A soil excavation was completed, and groundwater monitoring wells were installed at the site. At the time of closure in 2002, residual contamination was documented to persist in soil and groundwater. The depth to water was identified as approximately seven feet below grade, with flow to the northeast or east toward E. Marion Street.

The parcel to the southwest at 4231 N. Oakland Avenue was the former Gerseth Service Station (BRRTS # 03-41-003214). A total of 15 USTs were removed from this property, and the site investigation identified soil and groundwater contamination that extended east beneath N. Oakland Avenue. Despite soil excavation, residual contamination persists at this site and beneath N. Oakland Avenue. The depth to water was identified as being three to seven feet below grade, with flow to the southwest or southeast, depending on the date of evaluation.

In 1999, utility excavation work uncovered petroleum contamination within E. Marion Street approximately 100 feet west of N. Oakland Avenue (**Figure 3**). Petroleum contaminated soil was apparent during water lateral work in February 1999. Based on clean soil chemistry results along the north property boundary of the Gerseth Service station site, it was assumed the contamination may be related to releases of petroleum from the former Shell Station located on the 4301 N. Oakland Street property, currently the Einstein's Bagels store. The 1999 utility contamination report indicated the Shell station was closed in 1975, the buildings razed, and the tanks removed. Because the 4301 N. Oakland work was completed before there were requirements for assessment of contamination, no evaluations were performed regarding potential contamination at the 4301 N. Oakland property.

1.5 Conceptual Site Model and Potential Contaminant Receptors

As noted below, site soil consists of dense native silty clay till with a shallow perched water table. Groundwater flow directions are variable and reflect the influence of disturbances from historic fill. Shallow soil, perched groundwater, and vapor are the potential contaminant migration pathways of concern.

Contaminant migration within the shallow soil and groundwater displays minimal migration due to the dense nature of the native geologic materials. Within the top four feet of the ground surface (the direct contact interval of concern) there are no known contaminated soils present above direct contact threshold values. Since all homes and businesses are connected to the municipal water supply, there are no direct contact risks via ingestion of contaminated groundwater.

Vapor migration of the drycleaning chemical has occurred, and a functioning vapor mitigation system is operating on the 4312 building to eliminate the risk of exposure for drycleaning solvents. Although no risks are known to be present from petroleum, the functioning vapor mitigation system also address any potential petroleum vapor migration concerns.

1.5.1 Physical Site Conditions

Information is available on the site conditions from the extensive sampling conducted during the site investigation and remediation for the Former Shorewood Queensway Cleaners drycleaning project. In addition, information from neighboring projects and regional publications has been consulted to further understand the site geology and groundwater flow conditions.

The site geology consists of an estimated 150 to 200 feet[1] of unconsolidated clayey end moraine glacial till overlying bedrock.[2] The bedrock consists of carbonate sedimentary deposits, predominantly dolomite, of Devonian-age from the Milwaukee Formation, that dip to the southeast[3].

The site soils have been observed to a depth of 30 feet below grade during installation of piezometers PZ-11 and PZ-12. The soils consist of dense silty clay till with occasional pockets and thin, discontinuous lenses of fine sand and silt. The drycleaner excavation completed on the Property in July 2020 extended to depths of up to 19 feet below grade, witih dense gray silty clay present. As documented in the petroleum investigations conducted on neighboring properties, the clay till has a very low hydraulic conductivity, typically less than 10^{-6} centimeters per second (cm/sec). During the drycleaner soil excavation activities, no dewatering of the excavation was necessary due to infiltrating groundwater, despite having an open excavation for a period of several weeks.

Fill is present within former excavated areas where perimeter footings extended to depths of approximately 6.5 feet below grade, and where a former basement extended beneath the drycleaner

[1] Evans, T.J., Massie-Ferch, K.M, and Peters, R.M, 2004, Preliminary depth to bedrock map of Walworth, Racine, Kenosha, Milwaukee, Waukesha, Ozaukee, and Washington Counties, WGNHS Map

[2] Hadley, D. W and Pelham, J.H., 1976, Glacial Deposits of Wisconsin, WGNHS Map, Scale 1: 500,000

[3] Mudrey, M.G., Brown, B.A., and Greenberg, J.K., 1982, Bedrock Geologic Map of Wisconsin, WGNHS Map, Scale 1: 1,000,000.

building to a depth of five feet below grade. The basement of the adjacent 4312 building to the north is approximately eight feet below grade.

The three tanks removed from the Property in July 2020 extended to a depth of approximately seven to eight feet below grade, and upon tank removal, soil was removed to a depth of approximately ten to eleven feet for landfill disposal.

Backfill placed on the Property following the 2019 and 2020 excavations consisted of quarry screenings, a compacted pale gray fine sandy silt.

The depth to water ranges from four to eight feet, and groundwater flow is to the north / northeast / northwest, although there may be a component of flow to the east or southeast. The groundwater is likely perched on the dense clay till. Groundwater data from neighboring petroleum sites indicate flows trend to the east, northeast, and potentially southwest on the western portion of the former Gerseth site. Groundwater flow in the shallow, dense silty clay on the Property is difficult to evaluate, as backfill influences water levels and interpretation of groundwater flow.

1.5.2 Utilities and Potential Receptors

Water, sanitary, and storm sewer lines service all structures in the area (**Figure 2**). Buried gas and fiber optic lines are also present in the vicinity of the site.

The City of Milwaukee provides municipal water sourced from Lake Michigan and there are no known active private water wells within 0.5-miles of the Property. There is no risk of ingestion of contaminated groundwater from the release at the site.

As noted in Section 1.4.3 above, contamination is also known to be present along the water main in East Marion Street approximately 100 feet west of the intersection with N. Oakland Avenue, with the suspected source being the former gasoline station at 4301 N. Oakland Avenue.

During the drycleaning solvent investigation, potential contaminant migration along utility corridors was evaluated by obtaining soil samples and soil gas samples in the right of way and within N. Oakland Avenue. The testing also included compounds related to petroleum contamination. Soil gas samples were retained from two sample points along the water and sewer laterals near the property boundary, with no elevated results detected. Six five-foot deep hand-auger borings (HA-1 to HA-6) were also advanced within the backfill of the water lateral and the sanitary sewer lateral for soil sampling purposes, and six soil borings (SB-18 to SB-23) with 12 soil samples from depths up to 12 feet below grade were advanced in Oakland Avenue and the right of way to assess potential migration along the utility lines. Testing was completed for VOCs, and based on the findings, no significant migration of contamination along the utility corridors of N. Oakland Avenue or E. Marion Street are apparent. The referenced consultant reports that document this information are identified in Section 2.1 below.

During demolition in 2019, the sanitary and water laterals that serviced the buildings on 4300 N. Oakland and 1808 E. Marion Street were removed. Along N. Oakland Avenue, a clay plug consisting of bentonite was placed along the end of the sanitary sewer and water laterals at the disconnect just east of the sidewalk, as a barrier to potential future migration along the utility backfill. Soil samples were also obtained for assessment of residual contamination at the edge of the utility lateral removals in November 2019 (EX-1, EX-3, EX-9), with no detection of petroleum compounds (**Figure 4**).

Although mapped as being present, during demolition of the drycleaner building, no sewer or water lateral was found entering the 4300 N. Oakland Avenue building from the south, off of E. Marion Street. The sanitary sewer and water laterals that serviced the former 1808 E. Marion Street residence were removed, and had no field indications of contamination associated with either line.

2 SITE INVESTIGATIONS, REMEDIATION, AND CONDITIONS

2.1 Site Investigation Results

Contamination from the drycleaner release on the Property was reported to the WDNR in July 2008, and the site investigation was conducted between 2008 to 2015 by Enviro Forensics, Inc. The site investigation was approved by the WDNR on September 9, 2015.

As part of the investigation, numerous soil samples, groundwater samples, and vapor samples were obtained from borings and wells to define the nature and extent of contamination related to VOCs. The drycleaner investigation includes a network of ten shallow water table wells and two deeper piezometers that help define the groundwater conditions. The efforts related to the drycleaning solvent have also generally defined the extent of the petroleum release.

Some of the key documents that present the project findings from Enviro Forensics include:

- 2013, August 1, *Site Investigation Report*
- 2013, September 25, *Subslab Vapor Mitigation System Memorandum with Installation Details and Test Results*
- 2014, February 27, *Environmental Investigation Sampling Results* - includes indoor air vapor sampling
- 2015, January 6, *(Additional) Site Investigation Report*
- 2015, April 27, *Site Investigation Update Report* – includes soil gas results and borings in Oakland Avenue to assess utility migration

Further investigation efforts were conducted by Fehr Graham in 2018, which included soil borings A to X, with analysis of full VOCs (**Figure 4**). The results are documented on the Fehr Graham Remedial Action Option and Remedial Design Report dated July 18, 2018.

The extent of soil impacted with drycleaning solvent was defined. Concentrations of tetrachloroethene (PCE) in soil were elevated above WDNR residual contaminant levels (RCLs), and the contamination extended to depths of approximately 18 feet near the building. Contamination was also identified beneath the 4312 N. Oakland Street building basement.

The extent of groundwater contamination was defined as extending to areas where the soil contamination was present.

No significant petroleum contamination was identified during the drycleaning solvent investigation and testing. Low-level detections of some petroleum constituents were present in some of the soil samples and the groundwater from monitoring well MW-8, on the southwest corner of the Property.

Based on the observed free product contamination in well MW-10, further investigation efforts into petroleum contamination are necessary in the vicinity of this well on the southwest corner of the Property.

2.2 Completed Remedial Actions

Remediation of the soil contamination at the drycleaner site was conducted in November 2019 and July 2020. Preparation for remediation activities included building demolition and removal of all surface

asphalt and concrete and building footings from both the 4300 N. Oakland parcel and the 1808 E. Marion Street parcel.

Soil containing elevated levels of PCE were excavated and discarded at a licensed subtitle D landfill. An estimated 2,960 tons of soil was excavated for disposal related to the drycleaning site, including a small quantity of soil in the alley of the adjacent 4312 N. Oakland Avenue property to the north. The drycleaner excavation extended as deep as 19 feet below grade, and was backfilled with quarry screenings (fine sandy silt). In select areas where residual contamination may be present, some of the backfill and remaining native soils were mixed with Bio-Available Material (BAM^{TM}), a carbon-based additive that provides long-term reduction and treatment of residual solvent contamination.

Upon discovery in July 2020, three USTs were removed, along with an additional 110 tons of soil from areas immediately surrounding the USTs.

Soil samples (EX-1 to EX-58) were obtained from the excavation perimeter walls and floor to document remaining soil chemistry concentrations, with testing for full VOCs from all soil samples. Eleven soil samples from EX-47 to EX-58 around the USTs were also analyzed for lead.

The excavation limits and sample locations are shown on **Figure 4**, and the excavation sample soil chemistry results are summarized on **Table 1**. Remaining drycleaning solvent-related compounds following the completed excavation are presented on **Figure 5**, and residual soil and groundwater chemistry results containing petroleum-related constituents are shown on **Figure 6**.

Key documents that present further details on the remedial actions have been submitted by Sand County Environmental to the WDNR and include:

- 2020, July 2, *Remedial Action Documentation Report, Fall 2019 Excavation Activities*
- 2020, November 23, *Technical Memorandum, Remediation Update*
- 2020, December 1, *Tank System Site Assessment*

2.3 Current Site Conditions

The Property has been backfilled, graded, and grass vegetation has been established. The excavation on the 4312 Property to the north was backfilled and resurfaced with concrete, which provides parking for building tenants.

There are ten water table monitoring wells, two deeper piezometers, and one four-inch diameter groundwater sump present at the site for use in post-excavation groundwater monitoring. Groundwater contaminant trends over time need to be documented to verify the completed remedial action was successful and the WDNR can close the drycleaner BRRTS case.

2.3.1 Petroleum Compounds in Soil and Groundwater

One round of post-excavation groundwater sampling has been completed, in September, 2020, with the results indicating significant reductions in contaminant concentrations when compared to pre-excavation values for PCE. The testing also includes petroleum constituents, and **Figure 6** displays the findings for petroleum substances in groundwater in September 2020.

With the exception of several feet of free petroleum product detected at monitoring well MW-10, there are minimal impacts related to petroleum. As shown on **Table 1**, no elevated concentrations of lead

were detected in any of the 11 soil samples retained from soil near the former leaded gasoline tanks (3.3 to 9.8 mg/kg total lead).

Although free product was present, groundwater beneath the floating free product was sampled for analysis of VOCs, and the results indicate benzene and naphthalene are present in the groundwater at levels above NR 140 Enforcement Standards (ES). The water at well MW-10 also contains other typical gasoline constituents including ethylbenzene, toluene, xylenes, and trimethylbenzenes; none of these compounds were detected in any of the soil samples obtained from adjacent soils during the tank excavation activities. Groundwater also contains low levels of cumene, n-butylbenzene, sec-butylbenzene, and n-propylbenzene, which were identified in adjacent soils at low concentrations.

Groundwater from monitoring well MW-8, located approximately 85 east of well MW-10, contains a trace detection of benzene at a level above the NR 140 Preventative Action Limit (PAL). The benzene concentration ranged from 0.21 to 1.1 ug/l over the past ten years of monitoring groundwater at well MW-8. Groundwater from wells MW-1 and MW-2, located approximately 15 feet northwest and east / northeast of well MW-10, do not contain any detectable petroleum compounds.

2.3.2 Free Product Assessment and Removal

Monitoring well MW-10 was installed at the location of the removed underground gasoline tanks, and has several feet of petroleum free product in the well. As documented in the Sand County November 23, 2020 Technical Memorandum, the product was analyzed by Synergy Laboratory to evaluate the composition. Based on a comparative assessment of the chromatograph, the product consists of approximately 80% fuel oil and 20% weathered gasoline. The laboratory results also indicate the product has a GRO response of 9,300 mg/l and a DRO response of 3.35 mg/l.

The source of the free product observed in well MW-10 is perplexing, as the excavation was dry upon removal of the tanks and adjacent soils, and adjacent soil samples contain only minimal detections of VOCs. It is possible removal of the overlying asphalt and concrete combined with flushing via precipitation has pushed residual contaminants from the adjacent and overlying formation into the permeable granular backfill, where it preferentially accumulates in monitoring well MW-10.

An effort to remove the free product was conducted on October 23, 2020, when a vacuum truck was used to extract and properly discard of water and free product from well MW-10. Product thickness was measured using a product interface probe before and after approximately 50 gallons of liquid was extracted from the well. Prior to suction, there was approximately 2.3 feet of product noted in the 2-inch diameter well, occurring at a depth of approximately 4.5 feet below grade. The well was quickly sucked dry using a suction pipe inserted to the 13.4-foot deep well base, but the well continued to make a small amount of water as vacuum was applied for one hour. After an hour of extraction, the well was dry, but approximately one hour later liquids had partially recovered in the well, with approximately three feet of liquid in the well, including one foot of free product.

Further evaluations are necessary to determine the source and extent of the observed free product in well MW-10.

3 SITE INVESTIGATION WORK PLAN

3.1 General Scope of Work

Additional soil and groundwater samples will be obtained in an effort to define the extent of impacts in the vicinity of well MW-10 and the former tanks and supply pipes (**Figure 7**). The results will be used to assess the need for further excavation and free product removal and disposal.

3.2 Site Investigation Work Plan, Access, and Correspondence

The WDNR requires preparation of a Work Plan prior to completing a site investigation. This Site Investigation Work Plan meets the WDNR requirements. While no fee has been submitted for formal WDNR review, feedback from the WDNR via phone will be obtained prior to implementing the proposed field activities.

All proposed soil borings will be installed on private property, and no right of way access will be pursued. One soil boring (GP-109) is planned on the neighboring property to the north. The boring is related to the drycleaner investigation and is proposed to help define the extent of remaining PCE in soil north of the excavation boundary. Access has already been negotiated for drilling on the northern property owner parcel.

Updates on the investigation progress will be sent via email and phone calls to the WDNR project manager periodically as results become known. The Village of Shorewood and the neighboring property owner will also be kept informed on the project scope and progress, as necessary.

3.3 Soil Borings and Small Diameter Monitoring Well Installations

3.3.1 Soil Borings and Soil Sample Intervals

Soil borings for the petroleum investigation are proposed on the southwest corner of the Property near well MW-10, as shown on **Figure 7**.

An estimated eight Geoprobe™ soil borings (GP-101 to GP-108) will be advanced. The borings will be advanced to a depth of 10 to 13 feet below grade, with continuous soil samples retained for observation and analysis. The macrocore drilling method will be used, advancing a 2.5-inch diameter sample tube lined with a disposable five-foot long poly-acetate liner into the dense native silty clay soil. Excellent sample recovery has been noted in previous borings that were drilled at the site using this method.

The recovered soils will be logged by a geologist, with field evaluations completed for volatile gas content using a photoionization meter (PID). Previous observations during the tank removal excavation activities indicates there may be some soil present that displays petroleum odors and / or a measureable response using a field PID. A Mini-Rae Lite PID meter with a 10.6 eV lamp will be used for field evaluation of the soil VOC content. The meter will be calibrated prior to use with a 100 part per million (ppm) isobutylene gas standard. The soil samples for field PID analysis will be retained in a ziploc bag and warmed in a heated vehicle for approximately 30 minutes to one hour prior to measurement with the PID. A separate segregated soil sample will be retained in sealed ziploc bag and placed in a cooler on ice, pending completion of the field PID assessment.

Samples for laboratory analysis will be selected based on odor, appearance, depth, and field VOC measurements using the PID. If field indications of obvious petroleum impacts or free product are noted during drilling, a soil sample for laboratory analysis will be retained from the impacted soil. At borings where obvious impacts are noted, a second soil sample will be retained from the borehole base, to assess the vertical extent of soil impacts.

If a boring displays obvious field impacts, an additional "step out" boring will be advanced an estimated 15 to 20 feet further from the source area (tanks) in an effort to define the extent of the observed contamination.

If there are no obvious field indications of impacts, one soil sample per boring will be retained for laboratory analysis. The sample will be selected based on the field PID response, with the most elevated interval selected for laboratory analysis. If there are no elevated PID responses, soil from the water table interface (approximately five feet below grade) will be the selected sample interval for laboratory analysis.

One soil boring (GP-109) is planned for drilling related to the drycleaner investigation in the alley north of the Property. This boring is proposed to define the extent of observed soil impacts containing PCE north of the north wall of the July 2020 excavation. Two soil samples will be obtained from this boring at approximately five feet and ten feet below grade, with laboratory analysis of full VOCs.

The driller will arrive with clean decontaminated drilling rods and will clean the sample tube between sample intervals using an Alconox and water wash and potable water rinse. Disposable sample liners will be used at all sample intervals. Efforts will be made to drill non-impacted borings first, but it may not be clear which borings are clean until the borings are advanced.

Borings that are not designed to be monitoring wells will be advanced to an anticipated depth of ten feet. If there are field indications of impacts at the borehole base at ten feet, the boring will be extended an additional five feet. Upon reaching the borehole base, the boring will be abandoned with holeplug bentonite. Borings intended to be completed with monitoring wells will be advanced to a depth of 13 feet, and a well installed per the procedures in Section 3.3.3 below.

3.3.2 Soil Laboratory Analytical Methods and Quality Control

Per WDNR recommendations, soil laboratory analysis will include analysis of petroleum volatile organic compounds (PVOCs) plus naphthalene and 1,2-dichloroethane (1,2-DCA), a former gasoline additive, using EPA Method 8260. As a screening tool, gasoline range organics (GRO) will also be tested at select samples using the standard WI Method. Since previous soil sample results indicate minimal VOC responses in the soil, analysis of GRO may serve as a helpful supplemental tool to identify areas of contamination. GRO was present in higher concentrations in the free product sample analysis, and may prove helpful in defining areas where free product impacts persist.

As requested by the WDNR, lead will also be tested at all the petroleum investigation soil sample locations using EPA Method 6010.

The two soil samples for the drycleaner assessment that will be analyzed for full VOCs will be analyzed using EPA Method 8260.

Based on the historic operation as a gas station in the 1960's and earlier, no assessment of emerging contaminants, such as per- and polyfluoroalkyl substances (PFAS) is necessary, and no sampling for PFAS is proposed at this time.

All soil samples for analysis of organic compounds will be retained using WDNR-required methods, including field preservation with methanol on a one to one ratio. The methanol and all sample containers will be provided by the analytical laboratory (Pace Analytical, Green Bay, WI). Lead will be sampled using a plastic 8-ounce cup provided by the laboratory for evaluation of moisture content. Disposable nitrile gloves will be worn during all sample handling activities, and will be changed frequently between sample intervals and borings.

One field methanol blank sample will be analyzed to evaluate potential sample contamination from the laboratory preservative. The laboratory will perform standard quality control and quality assurance, including matrix spikes and duplicates, as required by the method procedures.

An estimated 10 to 15 soil samples will be retained for lead, GRO, PVOCs plus naphthalene and 1,2-DCA, and two soil samples will be retained for full VOC assessment.

3.3.3 Small Diameter Monitoring Wells and Development, Surveying

At the four proposed borings that will be completed as monitoring wells, upon drilling to the targeted depth of 13 feet, proposed soil borings GP-101 to GP-104 will be completed with a 1-inch diameter Schedule 40 PVC well. The well will have a ten-foot long, factory cut ten-slot screened interval and will be completed with filter sand pack and a bentonite surface seal. The well will be completed flush with the ground surface and cut-off just below grade, with a watertight lockable plug.

Because these wells are smaller in diameter than required by NR 141 code, a variance for installation of the wells is requested. The site already has nine 2-inch diameter wells that are complaint with NR-141, and one 1-inch diameter well (MW-109) in the basement of the 4312 building, and these small diameter wells will supplement the existing monitoring well network.

Upon installation, due to the tight native soil formation, the wells will likely require several weeks for water to enter the well. Well development will be performed approximately two weeks after installation. Development will include purging the wells dry using a peristaltic pump and dedicated polyethylene tubing. The water level at each well will be measured before and after purging, and if the well does not go dry, up to ten volumes of water will be purged from each well, per NR 141 code requirements for well development.

In conjunction with the drilling and well development, free product and water from well MW-10 will be monitored and removed. The thickness of the free product layer will be measured before and after purging using an interface probe, and the product / liquids in the well will be removed using a bailer. The product will be stored on-site in a 55-gallon drum for eventual collection and disposal. Product removal will be conducted on several occasions to assess the persistence and quantity of product in the formation.

If free product or strong petroleum odors are present in any of the four new small-diameter wells, purged water from the well development will also be containerized.

The new wells will be surveyed for elevation using the recently-completed site survey for reference elevations. The PVC lip and ground surface at each new well will be measured to an accuracy of 0.01 foot, as required by NR 141 code.

3.3.4 Groundwater Sampling and Analysis

The groundwater from all site monitoring wells will be sampled for laboratory analysis of VOCs. Samples will be obtained using disposable bailers from the existing network of two-inch diameter monitoring wells (MW-1 to MW-8, MW-10, PZ-11, PZ-12) and a peristaltic pump and dedicated polyethylene tubing will be used to sample at the one-inch diameter wells (MW-9, GP-101 to GP-104).

Water levels will be measured prior to sampling using an electronic water level meter, and the wells will be purged of four well-volumes of water, or until they purge nearly dry, prior to sampling. The next water to enter the wells will be retained in laboratory-provided sample containers. Observations on color, odor and clarity will be recorded at the time of sampling.

Sampling for VOCs will include placement in three 40-ml glass vials with hydrochloric acid preservative, provided by the analytical laboratory. The samples will have zero free gas headspace and no bubbles of gas.

Sampling of well MW-10 will be completed on the water fraction beneath the floating free product. After development using a bailer or peristaltic pump, sampling of well MW-10 will be performed using a peristaltic pump with the tubing at the well base, to retain groundwater that does not contain free petroleum product.

Samples for dissolved lead will be retained from seven wells near the former USTs, including GP-101 to GP-104, MW-1, MW-2, and MW-10. Sampling of well MW-10 for dissolved lead may not occur if free product is persistent. All lead samples will be field filtered using a disposable 0.45-micron nitrocellulose filter prior to placement of the water in a nitric acid-preserved plastic container.

One trip blank water sample will be submitted with the samples, and one duplicate sample from one of the petroleum wells (GP-101 to GP-104 or MW-10) will be submitted for assessment of the variability of the analytical results. The analytical methods and laboratory quality control will be the same as noted for soil in Section 3.3.2 above.

3.4 Site Investigation and Remedial Action Documentation Report

Upon completion of the petroleum investigation field work, the information will be processed. Borehole logs, well construction and development forms, and survey information will be prepared. Existing data tables will be updated with the new information, and compared to relevant standards. Maps will be prepared and updated to convey the findings.

A brief email summary of the findings, along with pertinent tables and figures, will be sent to the WDNR to display the results. Based on the information, a remedial action plan will be laid out that presents a continuation of the previously completed remedial actions for the drycleaner site. We anticipate the information will indicate additional excavation of contaminated soil is needed, as well as vacuum truck removal of the free product and contaminated groundwater found near well MW-10.

Once these additional remedial steps have been taken, likely in the spring of 2021, a full remedial action documentation report for the Property will be prepared. The report will include a table and map showing the remaining in place soil chemistry results, and will summarize the latest groundwater chemistry results.

The report will include a summary of all excavation and backfill quantities, laboratory analytical reports, WDNR well forms, and other required documentation.

The report will include recommendations for further actions, as necessary. If the site conditions appear suitable, we will recommend closure be considered.

4 SCHEDULE

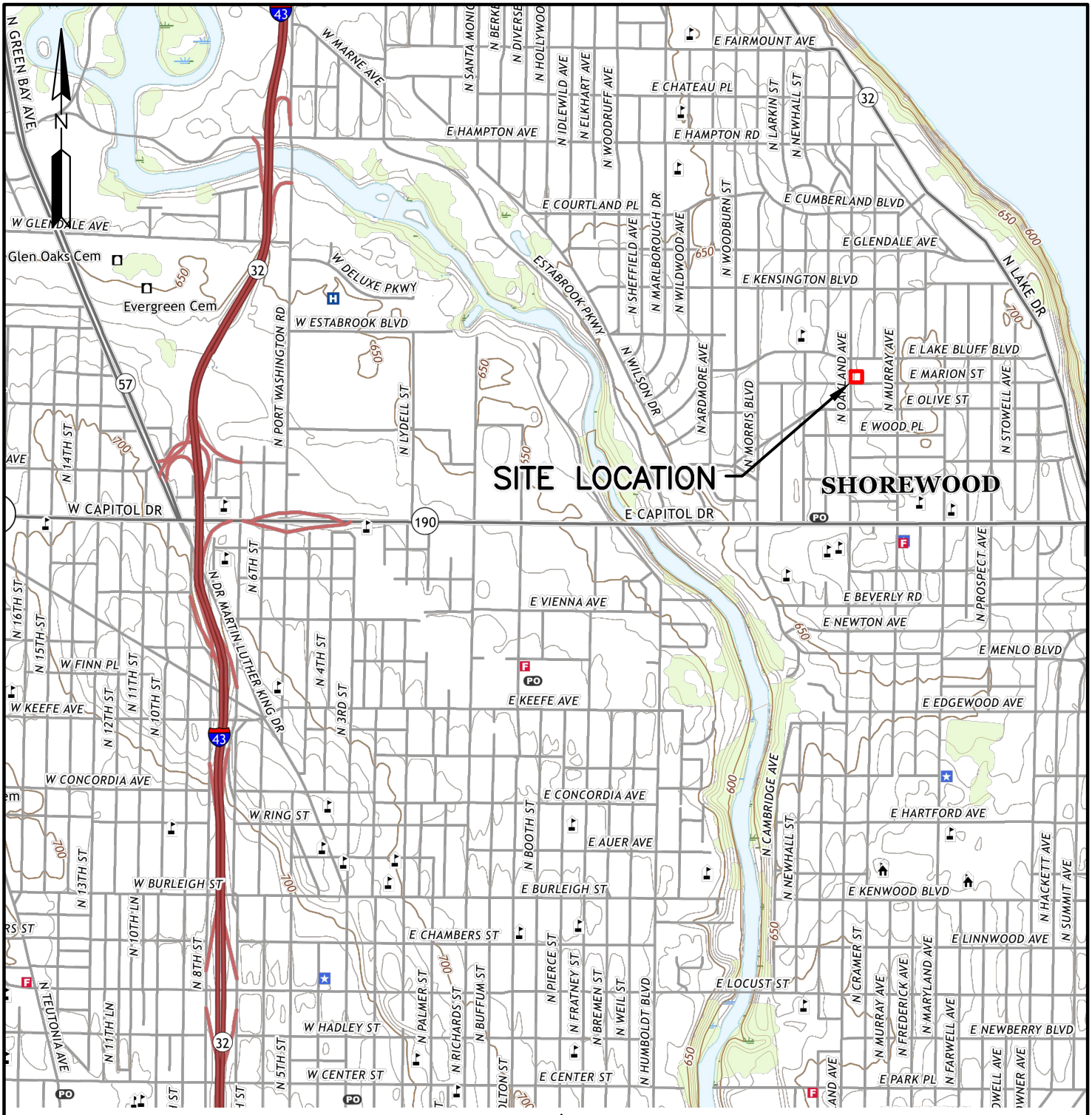
The soil borings and additional well installations will be advanced in January 2021 after obtaining approval of the scope of work and NR 141 well variance from the WDNR.

Soil sampling will require one day of drilling, and groundwater well development and surveying will be completed after water enters the wells in approximately two weeks. Groundwater sampling of all site wells will be completed in February or early March.

Upon receipt of the laboratory results in two to three weeks, the information will be processed, and an email report recommending excavation and free product recovery will be submitted to the DNR in March. The remedial excavation, if necessary, will be done in late March or early April, once spring thaw has arrived.

The post-excavation documentation report can be prepared in April, along with a discussion regarding pathways to closure.

Figures



WISCONSIN
MILWAUKEE COUNTY

REFERENCE:
USGS 7.5 MIN. MILWAUKEE WISCONSIN TOPOGRAPHIC QUADRANGLE DATED 2018.

0 1000 2000
SCALE IN FEET

SAND COUNTY ENVIRONMENTAL

SITE LOCATION AND LOCAL TOPOGRAPHY		DATE: NOVEMBER 2020	DRAWN BY: NG
SHOREWOOD QUEENSWAY CLEANERS 4300 N. OAKLAND AVE. SHOREWOOD, WI		SCALE: 1"=2000'	APPROVED : KE
		FIGURE 1	

O:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood_WI USGS.dwg
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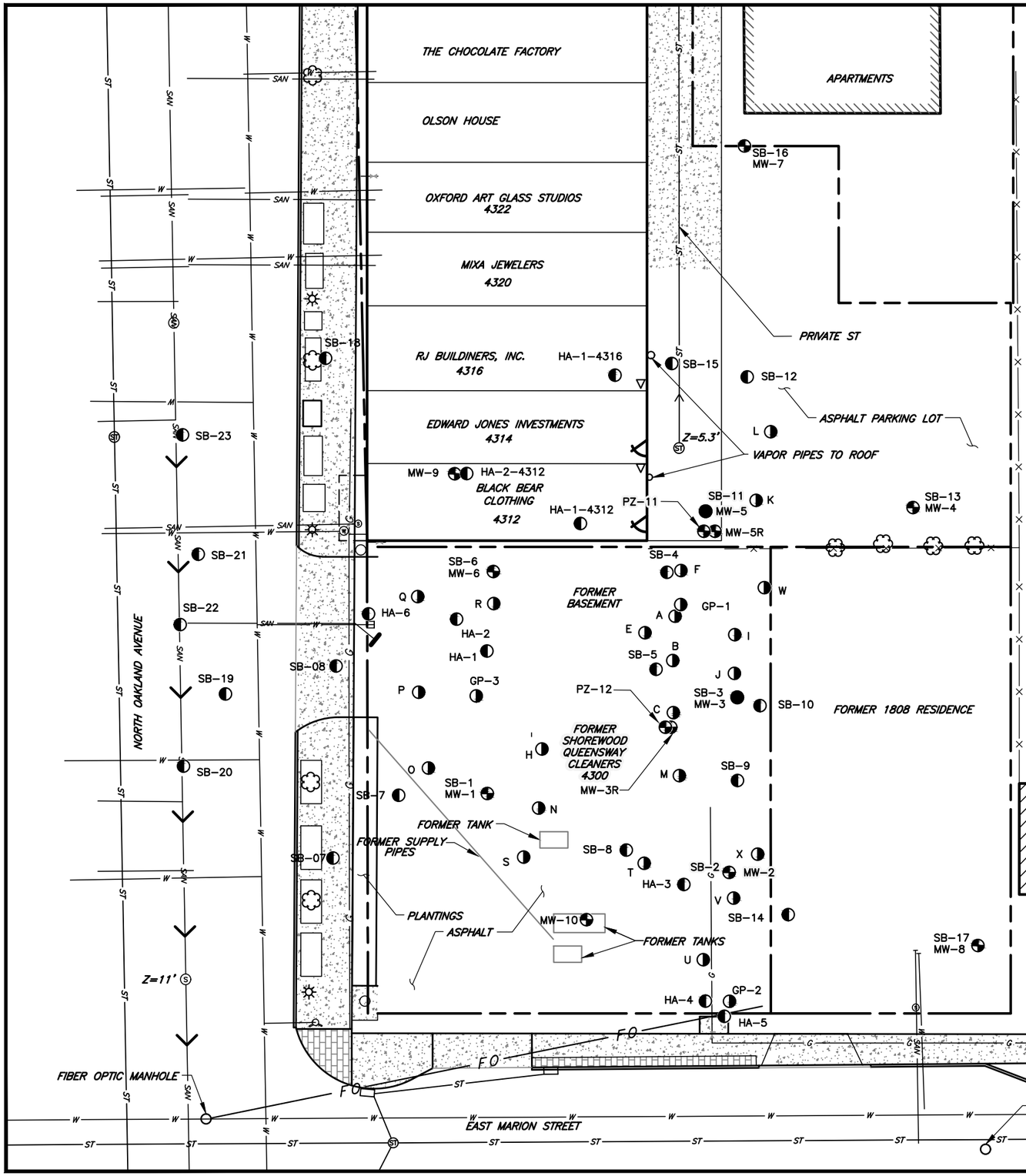

LEGEND

- PROPERTY LINE (APPROXIMATE)
- FENCE LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATERLINE
- OVERHEAD WIRE
- UNDERGROUND ELECTRIC
- GAS LINE
- UNDERGROUND FIBER OPTIC
- EDGE OF PAVEMENT/CURB
- CONCRETE
- BUILDING
- FORMER BUILDING/BASEMENT
- BRICK PAVERS
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- GAS UTILITY VALVE
- WATER LINE VALVE
- GAS METER
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CATCH BASIN
- SIGN
- CEMENT PLANTER
- TREE
- VAPOR EXTRACTION WELL
- SOIL BORING
- MONITORING WELL/SOIL BORING (SOLID IF ABANDONED)

N

0 12.5 25

SCALE IN FEET

NOTES:

1. SITE LAYOUT AND SAMPLE LOCATIONS DIGITIZED FROM FIGURE TITLED "SITE LAYOUT" BY FEHR GRAHAM, ENGINEERING & ENVIRONMENTAL DATED MARCH 2017. SAMPLE LOCATIONS FIELD VERIFIED AUGUST 2019. SITE LAYOUT IS SUPPLEMENTED BY DIGITIZING GOOGLE EARTH PRO IMAGE DATED JULY 2018. SAMPLE LOCATIONS FIELD VERIFIED NOVEMBER 2019.
2. PROPERTY LINE AND BUILDING DIMENSIONS FOR 4300 N. SHOREWOOD AVENUE IS DEVELOPED FROM SHOREWOOD, WISCONSIN GIS WEBSITE AND A SURVEY BY SURVEYING ASSOCIATES, WAUWATOSA, WISCONSIN DATED APRIL 2009.
3. UTILITY LOCATIONS ARE APPROXIMATE.

SITE LAYOUT

SHOREWOOD QUEENSWAY CLEANERS
4300 N. OAKLAND AVE.
SHOREWOOD, WI

DATE:	DECEMBER 2020
SCALE:	1"=25'
DRAWN BY:	ASR
APPROVED :	KE

FIGURE 2

0:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood_WI Chem Pre Excav Nov 2019_25 scale.dwg
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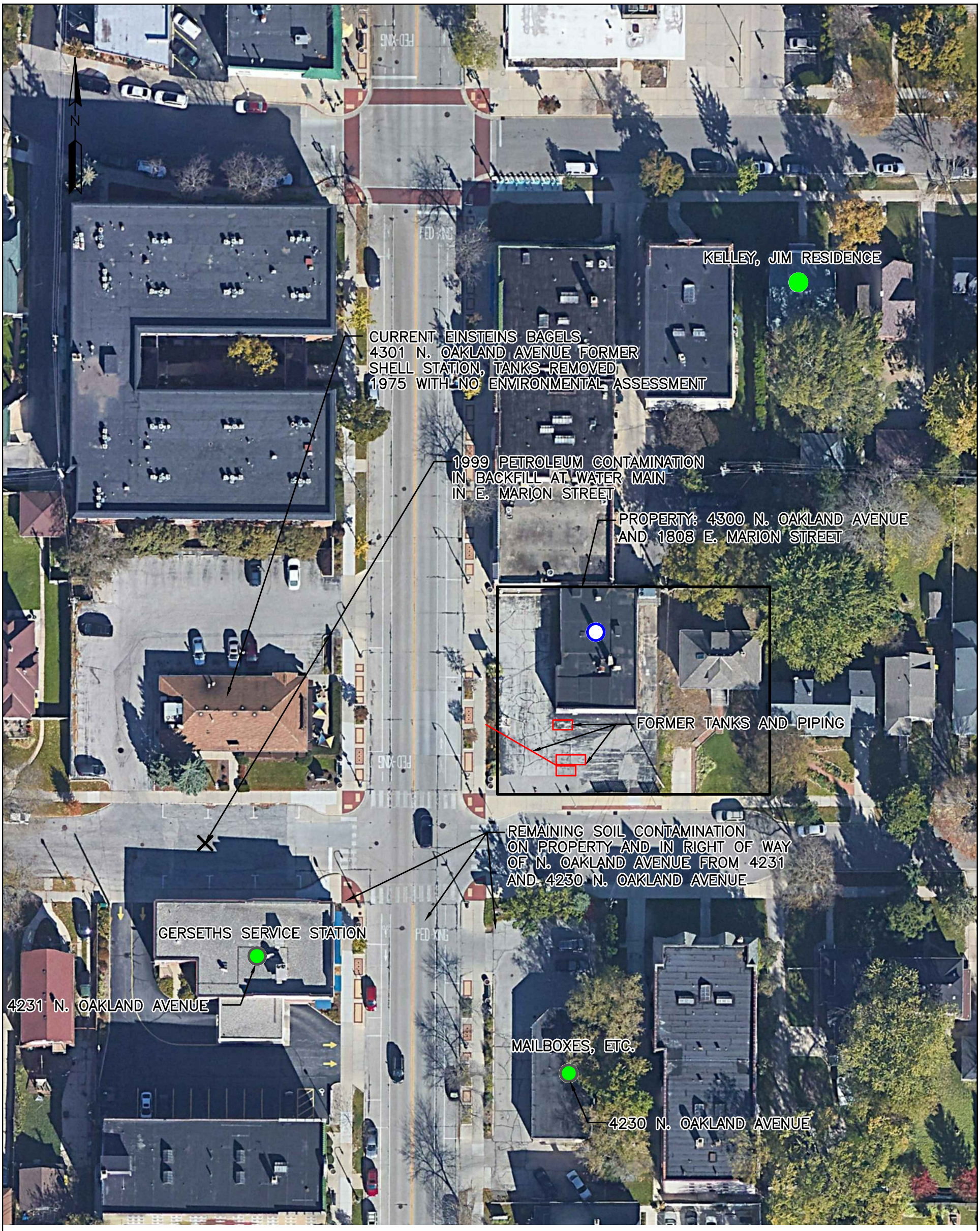

LEGEND

- OPEN WDNR BRRTS SITE
- CLOSED WDNR BRRTS SITE
- CONTINUING OBLIGATIONS APPLY

BRRTS: BUREAU OF REMEDIATION AND REDEVELOPMENT TRACKING SYSTEM

0 25 50

SCALE IN FEET

PHOTOSOURCE: GOOGLE EARTH IMAGE DATE JULY 2018.
DATE ACCESSED DECEMBER 2020.

SAND COUNTY ENVIRONMENTAL

PETROLEUM RELEASES ON ADJACENT PROPERTIES

SHOREWOOD
QUEENSWAY CLEANERS 4300 N. OAKLAND AVE.
SHOREWOOD, WISCONSIN

DATE: DECEMBER 2020	DRAWN BY: ASR
SCALE: 1"=50'	APPROVED BY: KE
	FIGURE 3

O:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood BRRTS.dwg
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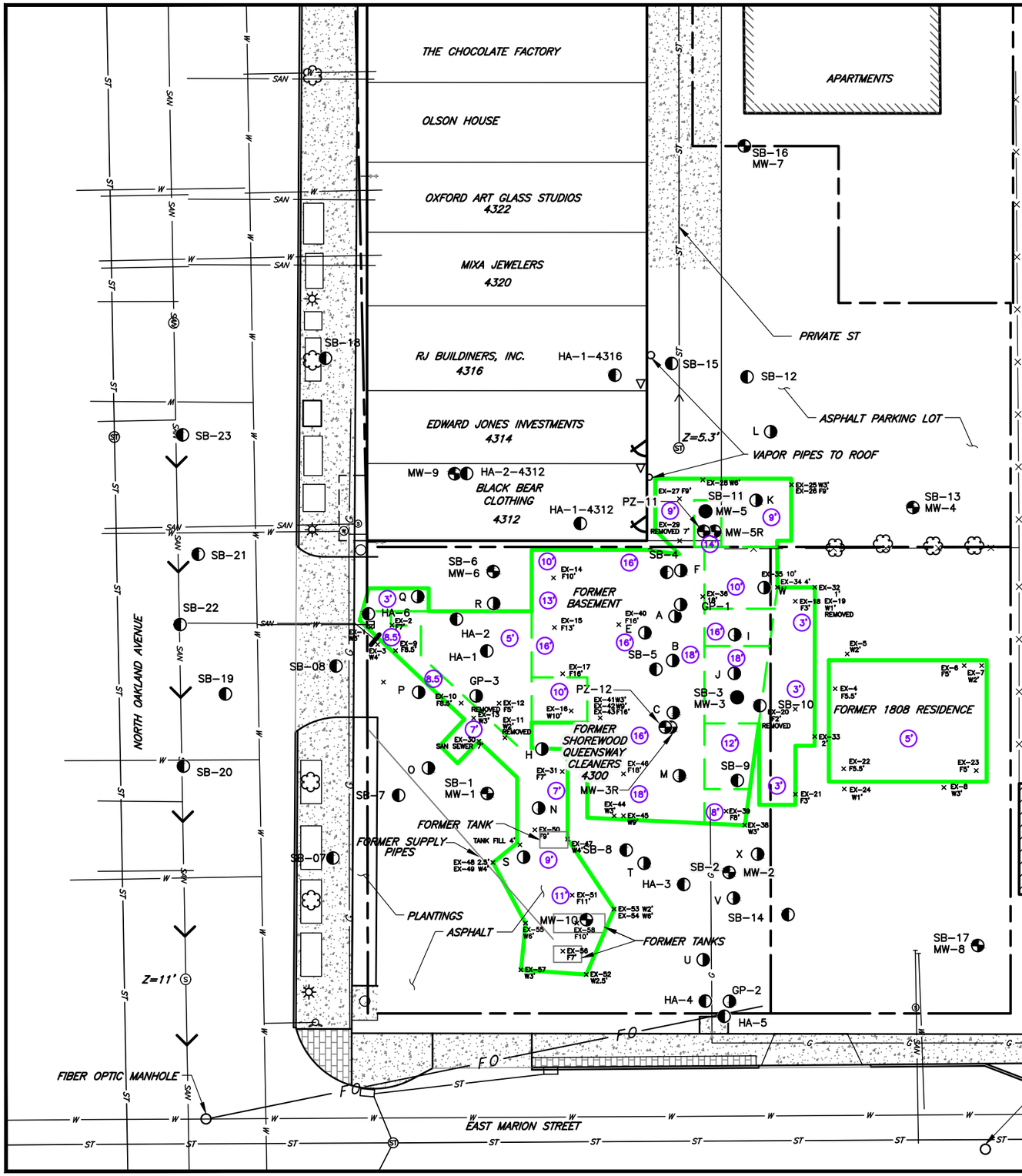

LEGEND

- PROPERTY LINE (APPROXIMATE)
- FENCE LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATERLINE
- OVERHEAD WIRE
- UNDERGROUND ELECTRIC
- GAS LINE
- UNDERGROUND FIBER OPTIC
- EDGE OF PAVEMENT/CURB
- CONCRETE
- BUILDING
- FORMER BUILDING/BASEMENT
- BRICK PAVERS
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- GAS UTILITY VALVE
- WATER LINE VALVE
- GAS METER
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CATCH BASIN
- SIGN
- CEMENT PLANTER
- TREE
- VAPOR EXTRACTION WELL
- SOIL BORING
- MONITORING WELL/SOIL BORING (SOLID IF ABANDONED)
- EXCAVATION BOUNDARY
- 3' DEPTH OF EXCAVATION
- CHANGE IN EXCAVATION DEPTH
- F5.5' FLOOR SAMPLE LOCATION AND DEPTH (FEET)
- W1' WALL SAMPLE LOCATION AND DEPTH (FEET)
- EX-33 EXCAVATION SAMPLE LOCATION

NOTES:

1. SITE LAYOUT AND SAMPLE LOCATIONS DIGITIZED FROM FIGURE TITLED "SITE LAYOUT" BY FEHR GRAHAM, ENGINEERING & ENVIRONMENTAL DATED MARCH 2017. SAMPLE LOCATIONS FIELD VERIFIED AUGUST 2019. SITE LAYOUT IS SUPPLEMENTED BY DIGITIZING GOOGLE EARTH PRO IMAGE DATED JULY 2018. SAMPLE LOCATIONS FIELD VERIFIED NOVEMBER 2019.
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3. UTILITY LOCATIONS ARE APPROXIMATE.

SAND COUNTY ENVIRONMENTAL

N

0 12.5 25
SCALE IN FEET

EXCAVATION LAYOUT

SHOREWOOD QUEENSWAY CLEANERS
4300 N. OAKLAND AVE.
SHOREWOOD, WI

DATE:	DECEMBER 2020
SCALE:	1"=25'
DRAWN BY:	ASR
APPROVED :	KE

FIGURE 4

0:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood_WI Chem Pre Excav Nov 2019_25 scale.dwg
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RJ BUILDINERS, INC.

EDWARD JONES INVESTMENTS

BLACK BEAR CLOTHING 4312

SIDEWALK

APRON

NORTH OAKLAND AVENUE

DOOR (TYP.)

ASPHALT PARKING LOT

FORMER 1808 BASEMENT

FORMER 4300 BUILDING WALLS

FORMER SUPPLY PIPES

FORMER TANK

TANK FILL 4'

REMOVED FOOTINGS

FORMER TANKS

SB-18 (4-6) ND (10-12) ND

HA-1-4316 (2) ND (6.5) ND

SB-15 (6-8) ND (12-14) ND

SB-12 (6-8) ND (12-14) ND

L (3) ND (6) ND (10) ND (15) ND

MW-9 HA-2-4312 (0.7) 2,560 (5) ND

HA-1-4312 (1) 307,000/700 (1.5) 294,000/1,080

EX-29 REMOVED 7' (15-16) ND (19-20) ND (29-30) ND

EX-27 F9' 11,400/167

EX-28 W6' 44,300/326

EX-25 W3' 98.4 EX-26 F9' 403

SB-11 MW-5

MW-5R

PZ-11

K (10) ND (15) ND

SB-13 MW-4 (4-6) ND (14-16) ND

SB-6 MW-6 (2-4) ND (12-14) ND

EX-14 F10' 1,320 4" SUMP

SB-4 F

EX-36 18' ND

EX-35 10' 1,200/29.3

EX-34 4' 1,380/58.4

EX-32 1' 94.1

EX-18 F3' ND

EX-19 W1' REMOVED

W (12) ND

GP-1 A

B

I

J

HA-6

EX-1 1,250 W3'

EX-2 F7' 922

EX-3 W4' 56.3

EX-9 F8.5' ND

HA-2

HA-1

Q (6) 37.8 (10) ND

R (2) 69.1 (6) ND (10) ND

EX-15 F13' ND

EX-40 F16' ND

E

EX-17 F16' ND

SB-5

EX-5 W2' ND

EX-6 F5' ND

EX-7 W2' ND

EX-4 F5.5' ND

(6-8) 526 (12-14) ND

SB-10

SB-3 MW-3 (27-28) 8.0

EX-20 F2' REMOVED

EX-33 2' 70.2

EX-22 F5.5' ND

EX-23 F5' ND

EX-24 W1' ND

EX-8 W3' ND

EX-21 F3' ND

SB-08 (1-3) 230

(2) 156 (6) 132 (10) 403

P

EX-10 F8.5'

GP-3 ND/30.9

EX-12 REMOVED F5'

EX-13 W3'

EX-11 W2' REMOVED

EX-16 W10' ND

EX-41 W3' 7,920

EX-42 W9' 5,430/30.3

EX-43 F16' ND

C (20) ND

MW-3R (19-20) ND (28-29) ND

PZ-12

H (8-9) 5,169/129 (15) ND

EX-30 SAN SEWER 7' 143

EX-31 F7' 193

EX-46 F18' ND

M

SB-9 (12-14) 72.6

EX-39 F8' 6,000/29.4

EX-38 W3' 225

O (2) 446 (6) ND (10) ND

SB-7 (4-6) ND (12-14) ND

SB-1 MW-1 (9-10) 240 (25-26) ND

(9-10) ND (15) ND N

EX-44 W3' 1,020

EX-45 W9' 2,150

EX-50 F9' ND

EX-47 W4' ND

SB-8 (2-4) ND (12-14) ND

T (2-3) ND (9-10) ND (5-6) ND (15) 49.3

HA-3 (5) 818

S (10) 62.3

194 EX-48 2.5' EX-49 W4' 84.3

SB-07 (1-3) ND

EX-51 F11' ND

EX-53 W2' ND

EX-54 W6' ND

MW-10

EX-55 W6' ND

EX-58 F10' ND

EX-56 F7' ND

EX-57 W3' ND

EX-52 W2.5' ND

U (2-3) 242 (5-6) ND (9-10) 754/104 (15) 89.4

GP-2 (0-2) ND

HA-4 (5) 76

HA-5 (5) ND

X (2) 154 (7-8) ND (9) ND

SB-2 MW-2 (15-16) 5.8 (27-28) ND

V (2) 338 (6) 77.2 (10) 45.8

SB-14 (4-6) ND (12-14) ND

SB-17 MW-8 (6-8) ND NAPHTHALENE 2,640 TRIMETHYLBENZENES 2,474 (18-20) ND

LEGEND

- PROPERTY LINE (APPROXIMATE)
- FENCE LINE
- SAN — SANITARY SEWER LINE
- ST — STORM SEWER LINE
- W — WATERLINE
- OW — OVERHEAD WIRE
- E — UNDERGROUND ELECTRIC
- G — GAS LINE
- FO — UNDERGROUND FIBER OPTIC
- EDGE OF PAVEMENT/CURB
- CONCRETE
- BUILDING
- FORMER BUILDING/BASEMENT
- BRICK PAVERS
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- GAS UTILITY VALVE
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CATCH BASIN
- SIGN
- CEMENT PLANTER
- SOIL BORING
- MONITORING WELL/SOIL BORING (SOLID IF ABANDONED)
- FORMER BUILDING LOCATION
- EXCAVATION BOUNDARY
- 3' — DEPTH OF EXCAVATION
- W3' × — WALL SAMPLE LOCATION AND DEPTH
- F5' × — FLOOR SAMPLE LOCATION AND DEPTH
- (6) — SAMPLE DEPTH (FEET BELOW GRADE)
- CHANGE IN EXCAVATION DEPTH
- 5,160/129 — SOIL CONCENTRATION OF PCE/TCE IN (µg/kg), NOTE: IF ONLY ONE VALUE, ONLY PCE DETECTED
- ND — NO DETECTION

N

0 7.5 15

SCALE IN FEET

EXCAVATION LIMITS AND SOIL TETRACHLOROETHENE CONCENTRATIONS

NOTES:

1. SITE LAYOUT AND SAMPLE LOCATIONS DIGITIZED FROM FIGURE TITLED "SITE LAYOUT" BY FEHR GRAHAM, ENGINEERING & ENVIRONMENTAL DATED MARCH 2017. SAMPLE LOCATIONS FIELD VERIFIED AUGUST 2019. SITE LAYOUT IS SUPPLEMENTED BY DIGITIZING GOOGLE EARTH PRO IMAGE DATED JULY 2018.
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3. UTILITY LOCATIONS ARE APPROXIMATE.

SHOREWOOD QUEENSWAY CLEANERS 4300 N. OAKLAND AVE. SHOREWOOD, WI

DATE:	DECEMBER 2020
SCALE:	1"=15'
DRAWN BY:	NG
APPROVED :	KE

FIGURE 5

0:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood_WI 15 Scale Pro Summer Excav.dwg
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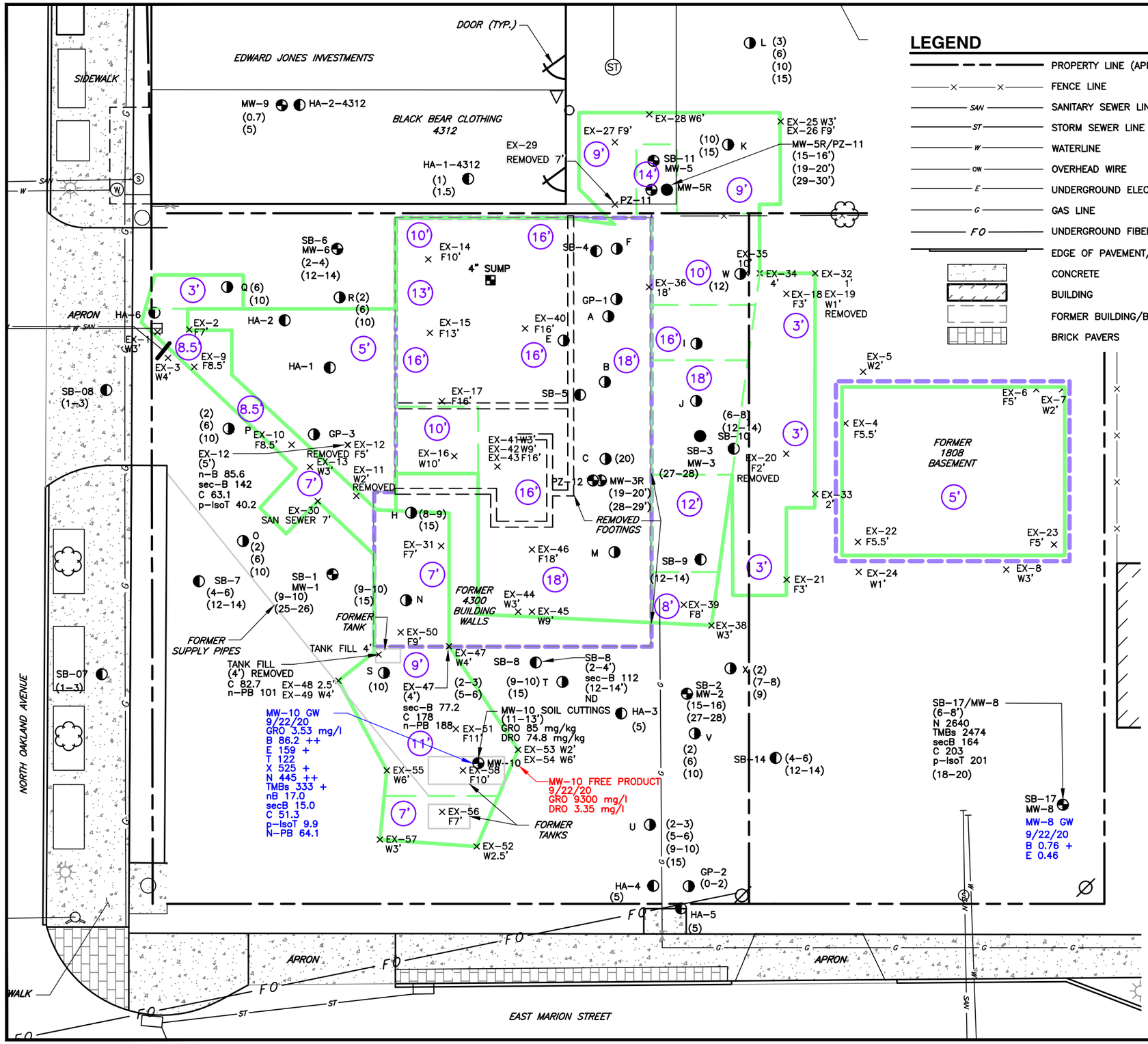

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- SANITARY SEWER MANHOLE
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- SIGN
- CEMENT PLANTER
- SOIL BORING
- MONITORING WELL/SOIL BORING (SOLID IF ABANDONED)

GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS
B	BENZENE
E	ETHYLBENZENE
T	TOLUENE
X	XYLENES (SUM)
N	NAPHTHALENE
TMBs	TRIMETHYLBENZENES (SUM)
n-B	n-BUTYLBENZENE
sec-B	sec-BUTYLBENZENE
C	CUMENE
p-IsoT	p-ISOPROPYL TOLUENE
n-PB	n-PROPYL BENZENE

- FORMER BUILDING LOCATION
- EXCAVATION BOUNDARY
- (3') DEPTH OF EXCAVATION
- W3' × WALL SAMPLE LOCATION AND DEPTH
- F5' × FLOOR SAMPLE LOCATION AND DEPTH
- (6) SAMPLE DEPTH (FEET BELOW GRADE) NOTE: ALL SOIL SAMPLES ANALYZED FOR FULL VOC'S, ONLY DETECTED PETROLEUM-RELATED COMPOUNDS ARE SHOWN
- CHANGE IN EXCAVATION DEPTH

N

0 7.5 15
SCALE IN FEET

EXCAVATION LIMITS AND PETROLEUM-RELATED DETECTIONS

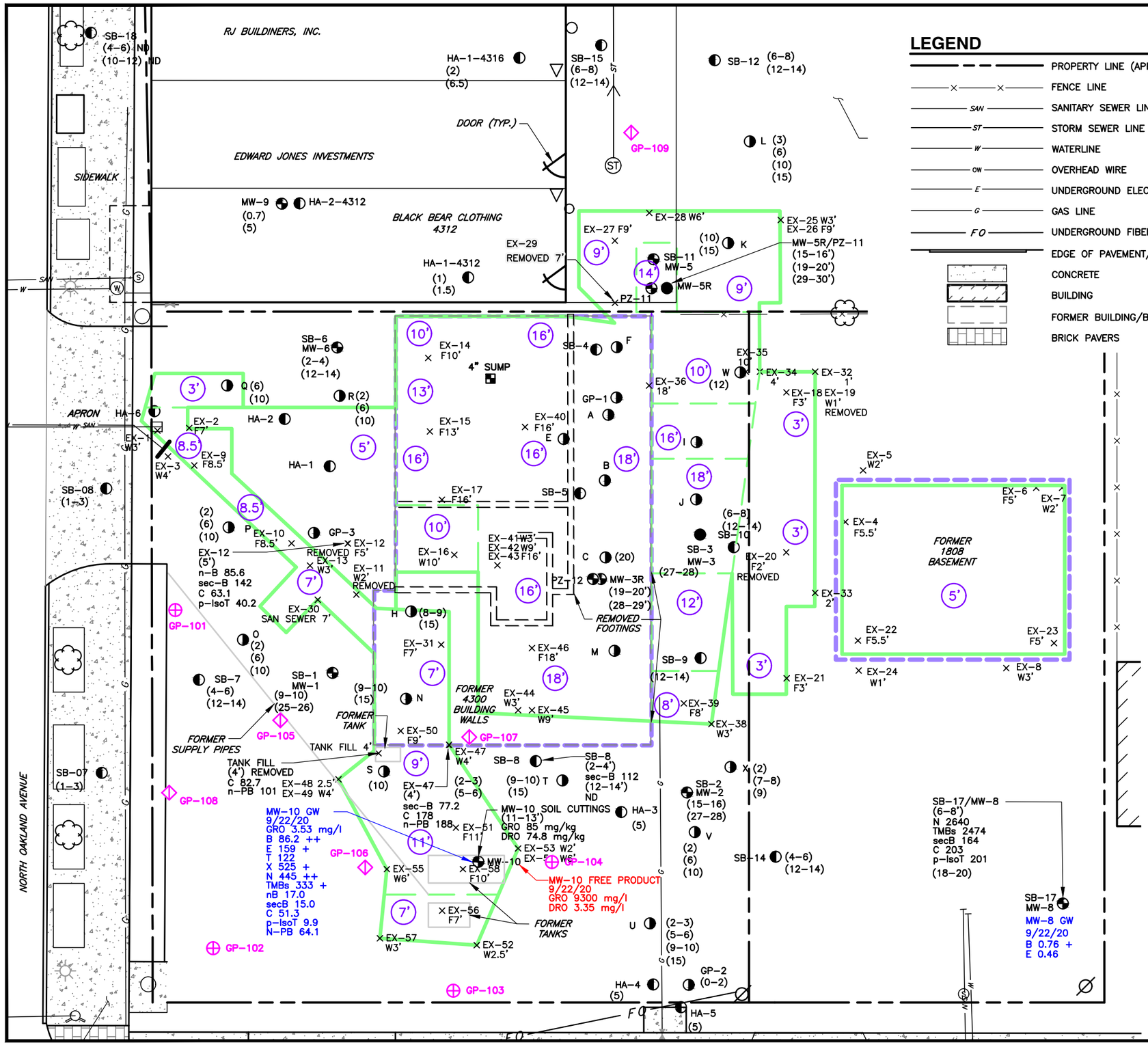
NOTES:

1. SITE LAYOUT AND SAMPLE LOCATIONS DIGITIZED FROM FIGURE TITLED "SITE LAYOUT" BY FEHR GRAHAM, ENGINEERING & ENVIRONMENTAL DATED MARCH 2017. SAMPLE LOCATIONS FIELD VERIFIED AUGUST 2019. SITE LAYOUT IS SUPPLEMENTED BY DIGITIZING GOOGLE EARTH PRO IMAGE DATED JULY 2018.
2. PROPERTY LINE AND BUILDING DIMENSIONS FOR 4300 N. SHOREWOOD AVENUE IS DEVELOPED FROM SHOREWOOD, WISCONSIN GIS WEBSITE AND A SURVEY BY SURVEYING ASSOCIATES, WAUWATOSA, WISCONSIN DATED APRIL 2009.
3. UTILITY LOCATIONS ARE APPROXIMATE.
4. GROUNDWATER (GW) RESULTS: GRO AND DRO RESULTS ARE IN MILLIGRAMS PER LITER (mg/l); ALL OTHER RESULTS FOR GROUNDWATER ARE IN MICROGRAMS PER LITER (ug/l).
5. SOIL RESULTS: DRO AND GRO RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg); ALL INDIVIDUAL COMPOUND RESULTS ARE IN MICROGRAMS PER KILOGRAM (ug/kg).

SHOREWOOD QUEENSWAY CLEANERS 4300 N. OAKLAND AVE. SHOREWOOD, WI

DATE:	DECEMBER 2020
SCALE:	1"=15'
DRAWN BY:	ASR
APPROVED :	KE

FIGURE 6



LEGEND

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- STORM SEWER LINE
- WATERLINE
- OVERHEAD WIRE
- UNDERGROUND ELECTRIC
- GAS LINE
- UNDERGROUND FIBER OPTIC
- EDGE OF PAVEMENT/CURB
- CONCRETE
- BUILDING
- FORMER BUILDING/BASEMENT
- BRICK PAVERS

- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- GAS UTILITY VALVE
- WATER LINE VALVE
- GAS METER
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CATCH BASIN
- SIGN
- CEMENT PLANTER
- SOIL BORING
- MONITORING WELL/SOIL BORING (SOLID IF ABANDONED)

GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS
B	BENZENE
E	ETHYLBENZENE
T	TOLUENE
X	XYLENES (SUM)
N	NAPHTHALENE
TMBs	TRIMETHYLBENZENES (SUM)
n-B	n-BUTYLBENZENE
sec-B	sec-BUTYLBENZENE
C	CUMENE
p-IsoT	p-ISOPROPYL TOLUENE
n-PB	n-PROPYL BENZENE

- FORMER BUILDING LOCATION
- EXCAVATION BOUNDARY
- (3') DEPTH OF EXCAVATION
- W3' × WALL SAMPLE LOCATION AND DEPTH
- F5' × FLOOR SAMPLE LOCATION AND DEPTH
- (6) SAMPLE DEPTH (FEET BELOW GRADE) NOTE: ALL SOIL SAMPLES ANALYZED FOR FULL VOC'S, ONLY DETECTED PETROLEUM-RELATED COMPOUNDS ARE SHOWN
- CHANGE IN EXCAVATION DEPTH
- GP-106 PROPOSED GEOPROBE BORING TO 10'
- GP-104 PROPOSED GEOPROBE WELL TO 13' (NR 141 VARIANCE REQUESTED)

NOTES:

1. SITE LAYOUT AND SAMPLE LOCATIONS DIGITIZED FROM FIGURE TITLED "SITE LAYOUT" BY FEHR GRAHAM, ENGINEERING & ENVIRONMENTAL DATED MARCH 2017. SAMPLE LOCATIONS FIELD VERIFIED AUGUST 2019. SITE LAYOUT IS SUPPLEMENTED BY DIGITIZING GOOGLE EARTH PRO IMAGE DATED JULY 2018.
2. PROPERTY LINE AND BUILDING DIMENSIONS FOR 4300 N. SHOREWOOD AVENUE IS DEVELOPED FROM SHOREWOOD, WISCONSIN GIS WEBSITE AND A SURVEY BY SURVEYING ASSOCIATES, WAUWATOSA, WISCONSIN DATED APRIL 2009.
3. UTILITY LOCATIONS ARE APPROXIMATE.
4. GROUNDWATER (GW) RESULTS: GRO AND DRO RESULTS ARE IN MILLIGRAMS PER LITER (mg/l); ALL OTHER RESULTS FOR GROUNDWATER ARE IN MICROGRAMS PER LITER (ug/l).
5. SOIL RESULTS: DRO AND GRO RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg); ALL INDIVIDUAL COMPOUND RESULTS ARE IN MICROGRAMS PER KILOGRAM (ug/kg).

SAND COUNTY ENVIRONMENTAL

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0 7.5 15
SCALE IN FEET

PROPOSED BORINGS AND SMALL DIAMETER WELLS

SHOREWOOD QUEENSWAY CLEANERS
4300 N. OAKLAND AVE.
SHOREWOOD, WI

DATE:	DECEMBER 2020
SCALE:	1"=15'
DRAWN BY:	ASR
APPROVED :	KE

FIGURE 7

O:\1-Projects\Shorewood Cleaners - Bayside Mngmnt\Drawings\MASTER Shorewood_WI 15 Scale Petroleum Work Plan.dwg
12/16/2020 10:48 AM

Table

Table 1
Excavation Soil Chemistry Results - VOCs
Shorewood Queensway Cleaners
4300 N. Oakland Ave., Shorewood, WI 53211
BRRTS# 02-41-552089

Sample ID		Groundwater Pathway RCL (ug/kg)	Industrial Direct-Contact (0-4') RCL (ug/kg)	Non-Industrial Direct-Contact (0-4') RCL (ug/kg)	EX-1	EX-2	EX-3	EX-4	EX-5	EX-6	EX-7	EX-8	EX-9	EX-10	EX-11	EX-12	EX-13	EX-14
Date					11/7/19	11/7/19	11/7/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/15/19	11/15/19	11/15/19	11/15/19	11/15/19	11/15/19
Depth					3'	7'	4'	5.5'	2'	5'	2'	3'	8.5'	8.5'	2'	5'	3'	10'
Description					Wall Native Clay	Floor Native Clay	Wall Sand Fill	Floor Native Clay	Wall NW Clay	Floor Native Clay	Wall NE Clay	Wall SE Clay	Floor Native Clay	Floor Native Clay	Wall Sand fill	Floor Native Clay	Wall Clay under sand fill	Floor Native Clay
DEPTH to Seasonal Low Water Table (ft BGS)					8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'
Saturated (S) or Unsaturated (U)					U	U	U	U	U	U	U	U	S	S	U	U	U	S
PID Reading					1.3	0.8	0.2	0.2	0.1	0.2	0.2	0.2	0.4	1.6	1.0	81.6	9.5	3.4
Post-Excvn Status (R- remain, T - Treated, LF - Dug and direct LF)					R	R	R	R	R	R	R	R	R	R	LF	R	LF	R
Tetrachloroethene (PCE)	(ug/kg)	*4.50*	**145,000**	**33,000**	**1,250**	**922**	**56.3 J**	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	**368**	**300**	<38.7	**4,770**	**1,320**
Trichloroethene (TCE)	(ug/kg)	*3.60*	**8,410**	**1,300**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**52.5 J**	<25.0	**30.9 J**	<25.0	<25.0
cis-1,2-Dichloroethene	(ug/kg)	*41.2*	**2,340,000**	**156,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
trans-1,2-Dichloroethene	(ug/kg)	*62.6*	**1,860,000**	**1,560,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Vinyl Chloride	(ug/kg)	*0.1*	**2,080**	**67**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Methylene Chloride	(ug/kg)	*2.6*	**1,150,000**	**61,800**	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3
Benzene	(ug/kg)	*5.12*	**7,070**	**1,600**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	(ug/kg)	*1,570*	**35,400**	**8,020**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	(ug/kg)	*1,107*	**818,000**	**818,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
m&p-Xylene	(ug/kg)	NS	**778,000**	**778,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	(ug/kg)	NS	**434,000**	**434,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (TOTAL)	(ug/kg)	*3,960*	**260,000**	**260,000**	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0
Naphthalene	(ug/kg)	*658*	**24,100**	**5,520**	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3
MTBE	(ug/kg)	*27*	**282,000**	**63,800**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	(ug/kg)	NS	**219,000**	**219,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	(ug/kg)	NS	**182,000**	**182,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trimethylbenzene Total (1,2,4- & 1,3,5-)	(ug/kg)	*1,382*	NS	NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	(ug/kg)	NS	**108,000**	**108,000**	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	85.6 J	<30	<30
sec-Butylbenzene	(ug/kg)	NS	**145,000**	**145,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	142	<25	<25
tert-Butylbenzene	(ug/kg)	NS	**183,000**	**183,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloromethane	(ug/kg)	*15.5*	**669,000**	**159,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene (Cumene)	(ug/kg)	NS	**268,000**	**268,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	63.1 J	<25	<25
p-Isopropyltoluene	(ug/kg)	NS	**162,000**	**162,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Propylbenzene	(ug/kg)	NS	**264,000**	**264,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	40.2J	<25	<25
Gasoline Range Organics	mg/kg	NS	NS	NS														
Diesel Range Organics	mg/kg	NS	NS	NS														
Lead	mg/kg	27	800	400														

Bold font with outline indicates individual or cumulative DC RCL exceedance per DNR RCL calculator 3/1/17.

Notes:
Analytes with no historic detections not shown
NS = No standard established
-- = Parameter not analyzed
NR = Parameter not reported
RCL = Residual Contaminant Level
DC = Direct Contact

Table 1
Excavation Soil Chemistry Results - VOCs
Shorewood Queensway Cleaners
4300 N. Oakland Ave., Shorewood, WI 53211
BRRTS# 02-41-552089

Sample ID		Groundwater Pathway RCL (ug/kg)	Industrial Direct-Contact (0-4') RCL (ug/kg)	Non-Industrial Direct-Contact (0-4') RCL (ug/kg)	EX-15	EX-16	EX-17	EX-18	EX-19	EX-20	EX-21	EX-22	EX-23	EX-24	EX-25	EX-26	EX-27	EX-28
Date					11/15/19	11/18/19	11/18/19	11/18/19	11/18/19	11/18/19	11/18/19	11/18/19	11/18/19	11/18/19	7/10/20	7/10/20	7/10/20	7/10/20
Depth					13'	10'	16'	3'	0-1'	2'	3'	5.5'	5'	0-1'	3'	9'	9'	6'
Description					Floor Native Clay	Wall South Clay	Floor Native Clay	Floor Native Clay	Wall Topsoil	Floor Native Clay	Floor Native Clay	Floor Native Clay	Floor Native Clay	Wall Topsoil	NE Wall	NE Floor	W Floor	Center Wall
DEPTH to Seasonal Low Water Table (ft BGS)					8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'
Saturated (S) or Unsaturated (U)					S	S	S	U	U	U	U	U	U	U	U	S	S	U
PID Reading					1.9	0.0	0.0	0.1	0.1	11.1	0.0	0.1	0.1	1.6	0.0	0.2	14.0	11.8
Post-Excvn Status (R- remain, T - Treated, LF - Dug and direct LF)					R	R	R	R	LF	LF	R	R	R	R	R	R	R	R
Tetrachloroethene (PCE)	(ug/kg)	*4.50*	**145,000**	**33,000**	<38.7	<38.7	<38.7	<38.7	**55.6 J**	**55.7 J**	<38.7	<38.7	<38.7	<38.7	**98.4 J**	**403**	**11,400**	**44,300**
Trichloroethene (TCE)	(ug/kg)	*3.60*	**8,410**	**1,300**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**167**	**326 J**
cis-1,2-Dichloroethene	(ug/kg)	*41.2*	**2,340,000**	**156,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**107 J**	<125
trans-1,2-Dichloroethene	(ug/kg)	*62.6*	**1,860,000**	**1,560,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125
Vinyl Chloride	(ug/kg)	*0.1*	**2,080**	**67**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125
Methylene Chloride	(ug/kg)	*2.6*	**1,150,000**	**61,800**	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<131
Benzene	(ug/kg)	*5.12*	**7,070**	**1,600**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125
Ethylbenzene	(ug/kg)	*1,570*	**35,400**	**8,020**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125
Toluene	(ug/kg)	*1,107*	**818,000**	**818,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125
m&p-Xylene	(ug/kg)	NS	**778,000**	**778,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	(ug/kg)	NS	**434,000**	**434,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (TOTAL)	(ug/kg)	*3,960*	**260,000**	**260,000**	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<375
Naphthalene	(ug/kg)	*658*	**24,100**	**5,520**	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<135
MTBE	(ug/kg)	*27*	**282,000**	**63,800**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
1,2,4-Trimethylbenzene	(ug/kg)	NS	**219,000**	**219,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
1,3,5-Trimethylbenzene	(ug/kg)	NS	**182,000**	**182,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
Trimethylbenzene Total (1,2,4- & 1,3,5-)	(ug/kg)	*1,382*	NS	NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
n-Butylbenzene	(ug/kg)	NS	**108,000**	**108,000**	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<150
sec-Butylbenzene	(ug/kg)	NS	**145,000**	**145,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
tert-Butylbenzene	(ug/kg)	NS	**183,000**	**183,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
Chloromethane	(ug/kg)	*15.5*	**669,000**	**159,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
Isopropylbenzene (Cumene)	(ug/kg)	NS	**268,000**	**268,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
p-Isopropyltoluene	(ug/kg)	NS	**162,000**	**162,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
n-Propylbenzene	(ug/kg)	NS	**264,000**	**264,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<125
Gasoline Range Organics	mg/kg	NS	NS	NS														
Diesel Range Organics	mg/kg	NS	NS	NS														
Lead	mg/kg	27	800	400														

Bold font with outline indicates individual or cumulative DC RCL exceedance per DNR RCL calculator 3,

Notes:
Analytes with no historic detections not shown
NS = No standard established
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RCL = Residual Contaminant Level
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Table 1
Excavation Soil Chemistry Results - VOCs
Shorewood Queensway Cleaners
4300 N. Oakland Ave., Shorewood, WI 53211
BRRTS# 02-41-552089

Sample ID		Groundwater Pathway RCL (ug/kg)	Industrial Direct-Contact (0-4') RCL (ug/kg)	Non-Industrial Direct-Contact (0-4') RCL (ug/kg)	EX-29	EX-30	EX-31	Tank Fill	EX-32	EX-33	EX-34	EX-35	EX-36	EX-37	EX-38	EX-39	EX-40	EX-41
Date					7/10/20	7/10/20	7/10/20	7/10/20	7/13/20	7/13/20	7/14/20	7/14/20	7/14/20	7/20/20	7/21/20	7/21/20	7/23/20	7/23/20
Depth					7'	7'	7'	4'	1'	2'	4'	10'	18'	18'	3'	8'	16'	3'
Description					Wall	Under Sanitary	Under Drain	At Tank	E Wall	E Wall	Wall	Floor	Floor	Floor	Wall	Floor	Floor	Wall
DEPTH to Seasonal Low Water Table (ft BGS)					8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'
Saturated (S) or Unsaturated (U)					U	U	U	U	U	U	U	S	S	S	U	S	S	U
PID Reading					218	4.7	1.2		0.1	0.3	0.7	1.7	0.0					
Post-Excvn Status (R- remain, T - Treated, LF - Dug and direct LF)					T / LF	R	R	LF	R	R	R	R	R	R	R	R	R	R
Tetrachloroethene (PCE)	(ug/kg)	*4.50*	**145,000**	**33,000**	**556,000**	**143 J**	**193**	<77.4	**94.1 J**	**70.2 J**	**1,380**	**1,200**	<38.7	<38.7	**225**	**6,000**	<38.7	**7,920**
Trichloroethene (TCE)	(ug/kg)	*3.60*	**8,410**	**1,300**	**1770 J**	<25.0	<25.0	<50.0	<25.0	<25.0	**58.4 J**	**29.3 J**	<25.0	<25.0	<25.0	**29.4 J**	<25.0	<25.0
cis-1,2-Dichloroethene	(ug/kg)	*41.2*	**2,340,000**	**156,000**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	35.0 J	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
trans-1,2-Dichloroethene	(ug/kg)	*62.6*	**1,860,000**	**1,560,000**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Vinyl Chloride	(ug/kg)	*0.1*	**2,080**	**67**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Methylene Chloride	(ug/kg)	*2.6*	**1,150,000**	**61,800**	<1310	<26.3	<26.3	<52.5	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3
Benzene	(ug/kg)	*5.12*	**7,070**	**1,600**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	(ug/kg)	*1,570*	**35,400**	**8,020**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	(ug/kg)	*1,107*	**818,000**	**818,000**	<1250	<25.0	<25.0	<50.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
m&p-Xylene	(ug/kg)	NS	**778,000**	**778,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	(ug/kg)	NS	**434,000**	**434,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (TOTAL)	(ug/kg)	*3,960*	**260,000**	**260,000**	<3750	<75.0	<75.0	<150	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0
Naphthalene	(ug/kg)	*658*	**24,100**	**5,520**	<1350	<27.3	<27.3	<54.5	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3
MTBE	(ug/kg)	*27*	**282,000**	**63,800**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	(ug/kg)	NS	**219,000**	**219,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	(ug/kg)	NS	**182,000**	**182,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trimethylbenzene Total (1,2,4- & 1,3,5-)	(ug/kg)	*1,382*	NS	NS	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	(ug/kg)	NS	**108,000**	**108,000**	<1500	<30	<30	<60	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
sec-Butylbenzene	(ug/kg)	NS	**145,000**	**145,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
tert-Butylbenzene	(ug/kg)	NS	**183,000**	**183,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloromethane	(ug/kg)	*15.5*	**669,000**	**159,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene (Cumene)	(ug/kg)	NS	**268,000**	**268,000**	<1250	<25	<25	82.7 J	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p-Isopropyltoluene	(ug/kg)	NS	**162,000**	**162,000**	<1250	<25	<25	<50.0	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Propylbenzene	(ug/kg)	NS	**264,000**	**264,000**	<1250	<25	<25	101 J	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

Gasoline Range Organics	mg/kg	NS	NS	NS														
Diesel Range Organics	mg/kg	NS	NS	NS														
Lead	mg/kg	27	800	400				5.6										

Bold font with outline indicates individual or cumulative DC RCL exceedance per DNR RCL calculator 3,

Notes:
Analytes with no historic detections not shown
NS = No standard established
-- = Parameter not analyzed
NR = Parameter not reported
RCL = Residual Contaminant Level
DC = Direct Contact

Table 1
Excavation Soil Chemistry Results - VOCs
Shorewood Queensway Cleaners
4300 N. Oakland Ave., Shorewood, WI 53211
BRRTS# 02-41-552089

Sample ID		Groundwater Pathway RCL (ug/kg)	Industrial Direct-Contact (0-4') RCL (ug/kg)	Non-Industrial Direct-Contact (0-4') RCL (ug/kg)	EX-42	EX-43	EX-44	EX-45	EX-46	EX-47	EX-48	EX-49	EX-50	EX-51	EX-52	EX-53	EX-54	EX-55
Date					7/23/20	7/23/20	7/24/20	7/24/20	7/24/20	7/27/20	7/27/20	7/27/20	7/27/20	7/27/20	7/28/20	7/28/20	7/28/20	7/28/20
Depth					9'	16'	3'	9'	18'	4'	2.5'	4'	9'	11'	2.5'	2'	6'	6'
Description					Wall	Floor	Wall	Wall	Floor	Wall	Wall	Wall	Floor	Floor	SE Corner	E Wall	E Wall	W Wall
DEPTH to Seasonal Low Water Table (ft BGS)					8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'	8'
Saturated (S) or Unsaturated (U)					S	S	U	S	S	U	U	U	S	S	U	U	U	U
PID Reading										395 Str Odor	0.7 No Odor	1.0	0.0 No Odor		4.1	5.2	6.0	7.1
Post-Excvn Status (R- remain, T - Treated, LF - Dug and direct LF)					R	R	R	R	R	R	R	R	R	R	R	R	R	R
Tetrachloroethene (PCE)	(ug/kg)	*4.50*	**145,000**	**33,000**	**5,430**	<38.7	**1,020**	**2,150**	<38.7	<38.7	**194**	**84.3 J**	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7
Trichloroethene (TCE)	(ug/kg)	*3.60*	**8,410**	**1,300**	**30.3 J**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
cis-1,2-Dichloroethene	(ug/kg)	*41.2*	**2,340,000**	**156,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
trans-1,2-Dichloroethene	(ug/kg)	*62.6*	**1,860,000**	**1,560,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Vinyl Chloride	(ug/kg)	*0.1*	**2,080**	**67**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Methylene Chloride	(ug/kg)	*2.6*	**1,150,000**	**61,800**	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3
Benzene	(ug/kg)	*5.12*	**7,070**	**1,600**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	(ug/kg)	*1,570*	**35,400**	**8,020**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	(ug/kg)	*1,107*	**818,000**	**818,000**	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
m&p-Xylene	(ug/kg)	NS	**778,000**	**778,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	(ug/kg)	NS	**434,000**	**434,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (TOTAL)	(ug/kg)	*3,960*	**260,000**	**260,000**	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0	<75.0
Naphthalene	(ug/kg)	*658*	**24,100**	**5,520**	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3
MTBE	(ug/kg)	*27*	**282,000**	**63,800**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	(ug/kg)	NS	**219,000**	**219,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	(ug/kg)	NS	**182,000**	**182,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trimethylbenzene Total (1,2,4- & 1,3,5-)	(ug/kg)	*1,382*	NS	NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	(ug/kg)	NS	**108,000**	**108,000**	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
sec-Butylbenzene	(ug/kg)	NS	**145,000**	**145,000**	<25	<25	<25	<25	<25	77.2 J	<25	<25	<25	<25	<25	<25	<25	<25
tert-Butylbenzene	(ug/kg)	NS	**183,000**	**183,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloromethane	(ug/kg)	*15.5*	**669,000**	**159,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene (Cumene)	(ug/kg)	NS	**268,000**	**268,000**	<25	<25	<25	<25	<25	178	<25	<25	<25	<25	<25	<25	<25	<25
p-Isopropyltoluene	(ug/kg)	NS	**162,000**	**162,000**	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Propylbenzene	(ug/kg)	NS	**264,000**	**264,000**	<25	<25	<25	<25	<25	188	<25	<25	<25	<25	<25	<25	<25	<25
Gasoline Range Organics	mg/kg	NS	NS	NS														
Diesel Range Organics	mg/kg	NS	NS	NS														
Lead	mg/kg	27	800	400						9.8	3.3	6.3	6.4	6.0	6.7	7.6	7.4	5.5

Bold font with outline indicates individual or cumulative DC RCL exceedance per DNR RCL calculator 3,

Notes:
Analytes with no historic detections not shown
NS = No standard established
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RCL = Residual Contaminant Level
DC = Direct Contact

Table 1
Excavation Soil Chemistry Results - VOCs
Shorewood Queensway Cleaners
4300 N. Oakland Ave., Shorewood, WI 53211
BRRTS# 02-41-552089

Sample ID		Groundwater Pathway RCL (ug/kg)	Industrial Direct-Contact (0-4') RCL (ug/kg)	Non-Industrial Direct-Contact (0-4') RCL (ug/kg)	EX-56	EX-57	EX-58		MW-10	PZ-11	PZ-11	PZ-11	PZ-12	PZ-12
Date					7/28/20	7/28/20	7/28/20		9/22/20	8/14/20	8/14/20	8/14/20	8/14/20	8/14/20
Depth					7'	3'	10'		Cuttings	15-16'	19 - 20'	29 - 30'	19 - 20'	28 - 29'
Description					SE Floor	SW Wall	Floor Under Tank		From Drum	At MW-5R	At MW-5R	At MW-5R	At MW-3R	At MW-3R
DEPTH to Seasonal Low Water Table (ft BGS)					8'	8'	8'		8'	8'	8'	8'	8'	8'
Saturated (S) or Unsaturated (U)					U	U	S		S	S	S	S	S	S
PID Reading					10.3	0.5	6.2			4	3	1.9	1	2
Post-Excvn Status (R- remain, T - Treated, LF - Dug and direct LF)					R	R	R		LF	R	R	R	R	R
Tetrachloroethene (PCE)	(ug/kg)	*4.50*	**145,000**	**33,000**	<38.7	<38.7	<38.7		--	<38.7	<38.7	<38.7	<38.7	<38.7
Trichloroethene (TCE)	(ug/kg)	*3.60*	**8,410**	**1,300**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
cis-1,2-Dichloroethene	(ug/kg)	*41.2*	**2,340,000**	**156,000**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
trans-1,2-Dichloroethene	(ug/kg)	*62.6*	**1,860,000**	**1,560,000**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
Vinyl Chloride	(ug/kg)	*0.1*	**2,080**	**67**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
Methylene Chloride	(ug/kg)	*2.6*	**1,150,000**	**61,800**	<26.3	<26.3	<26.3		--	<26.3	<26.3	<26.3	<26.3	<26.3
Benzene	(ug/kg)	*5.12*	**7,070**	**1,600**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	(ug/kg)	*1,570*	**35,400**	**8,020**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
Toluene	(ug/kg)	*1,107*	**818,000**	**818,000**	<25.0	<25.0	<25.0		--	<25.0	<25.0	<25.0	<25.0	<25.0
m&p-Xylene	(ug/kg)	NS	**778,000**	**778,000**	--	--	--		--	--	--	--	--	--
o-Xylene	(ug/kg)	NS	**434,000**	**434,000**	--	--	--		--	--	--	--	--	--
Xylenes (TOTAL)	(ug/kg)	*3,960*	**260,000**	**260,000**	<75.0	<75.0	<75.0		--	<75.0	<75.0	<75.0	<75.0	<75.0
Naphthalene	(ug/kg)	*658*	**24,100**	**5,520**	<27.3	<27.3	<27.3		--	<27.3	<27.3	<27.3	<27.3	<27.3
MTBE	(ug/kg)	*27*	**282,000**	**63,800**	<25	<25	<25		--	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	(ug/kg)	NS	**219,000**	**219,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	(ug/kg)	NS	**182,000**	**182,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
Trimethylbenzene Total (1,2,4- & 1,3,5-)	(ug/kg)	*1,382*	NS	NS	<25	<25	<25		--	<25	<25	<25	<25	<25
n-Butylbenzene	(ug/kg)	NS	**108,000**	**108,000**	<30	<30	<30		--	<30	<30	<30	<30	<30
sec-Butylbenzene	(ug/kg)	NS	**145,000**	**145,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
tert-Butylbenzene	(ug/kg)	NS	**183,000**	**183,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
Chloromethane	(ug/kg)	*15.5*	**669,000**	**159,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
Isopropylbenzene (Cumene)	(ug/kg)	NS	**268,000**	**268,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
p-Isopropyltoluene	(ug/kg)	NS	**162,000**	**162,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
n-Propylbenzene	(ug/kg)	NS	**264,000**	**264,000**	<25	<25	<25		--	<25	<25	<25	<25	<25
Gasoline Range Organics	mg/kg	NS	NS	NS					85					
Diesel Range Organics	mg/kg	NS	NS	NS					74.8					
Lead	mg/kg	27	800	400	6.6	6.9	7.7		--					

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Notes:
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NS = No standard established
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