I M P O R T A N T

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GILES ENGINEERING ASSOCIATES, INC.

Site Investigation Work Plan

The Couture
909 East Michigan Street
Milwaukee, Wisconsin

Prepared for:

The Couture LLC
Milwaukee, Wisconsin

May 15, 2017
Project No. 1E-1704002

WDNR BRRTS No. 02-41-579105
WDNR FID No. 341286220

GILES
ENGINEERING ASSOCIATES, INC.

GILES
ENGINEERING ASSOCIATES, INC.
GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

- Atlanta, GA
- Baltimore, MD
- Dallas, TX
- Los Angeles, CA
- Manassas, VA
- Milwaukee, WI

May 15, 2017

Wisconsin Department of Natural Resources
2300 North Martin Luther King Jr. Drive
Milwaukee, WI 53212

Attention: Ms. Nancy Ryan
Director of Finance

Subject: Site Investigation Work Plan
The *Couture* Development
909 East Michigan Street
Milwaukee, Wisconsin
Project No. 1E-1704002
WDNR BRRTS No. 02-41-579105
WDNR FID No. 341286220

Dear Ms. Ryan:

Giles Engineering Associates, Inc. Giles has prepared the enclosed Site Investigation Work Plan in general accordance with the Wisconsin Administrative Code Ch. 716.09. We are submitting this Site Investigation Work Plan with a $1,050 review fee to petition the Wisconsin Department of Natural resources (WDNRs) for their review and concurrence, prior to initiating the proposed scope of services. If there are any questions regarding the information contained herein, or if we can be of any additional service, please contact the undersigned at your convenience.

Respectfully submitted,

GILES ENGINEERING ASSOCIATES, INC.

Kelly M. Hayden
Staff Scientist

Kevin T. Bugel, P.G., C.P.G.
Environmental Division Manager

Distribution: Barrett Lo Visionary Development LLC
Attn: Mr. Joel Aizen (1 via email: jaizen@barrettlo.com)

Wisconsin Department of Natural Resources
Attn: Ms. Nancy Ryan (1 copy delivered)

TABLE OF CONTENTS

SITE INVESTIGATION WORK PLAN

THE *COUTURE* DEVELOPMENT
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002
WDNR BRRTS No. 02-41-579105
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SITE INVESTIGATION WORK PLAN

THE *COUTURE* DEVELOPMENT
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1. INTRODUCTION

1.1. Objective and Purpose

Giles Engineering Associates, Inc. (Giles) has prepared this Site Investigation Work Plan (SIWP) on behalf of The Couture LLC, and Barrett Lo Visionary Development, the developer for the property located at 909 East Michigan Street, in the City of Milwaukee, Milwaukee County, Wisconsin (herein referred to as the "Site"). This SIWP was prepared in response to a release notification and subsequent "responsible party" ("RP") letter issued by the Wisconsin Department of Natural Resources (WDNR), dated March 20, 2017.

The purpose of this SIWP is to provide a written plan to specify the media to be sampled, the locations the samples will be collected, and the methods and procedures to be employed during the investigation of soil and groundwater impacts initially identified during a Limited Phase II Environmental Site Assessment (Ltd. Phase II ESA), completed by Giles in October/November 2016. The scope of services presented in the SIWP were developed to evaluate the potential presence, extent, and magnitude of soil and potential groundwater contamination associated with the existing urban fill which was placed at the property in the late 1900's.

This SIWP was prepared in general accordance with Wisconsin Administrative Code (WAC), Natural Resources Chapter (NR) 716.09. Upon completion of the scope of services presented in the SIWP, the Site Investigation results and Giles conclusions and recommendations will be presented in a Site Investigation Report.

1.2. Site Location and Setting

The Site is located in the NE ¼, of the SE ¼, of Section 28, Township 6 North, Range 21 East of U.S. Public Land Survey. The Site is located at the (former) address of 909 East Michigan Street, in the city of Milwaukee, Milwaukee County, Wisconsin. Figure 1 illustrates the general location of the Site.

The Site consists of approximately 2.12-acres of land and is currently undeveloped and vacant. The Site was formerly occupied by the Milwaukee County Transit Center and bus marshalling garage structure from 1990 through December 2016. The Transit Center and garage structure were razed from November 2016 through January 2017 in preparation for

the *Couture* Development; however, the concrete slab from the former transit center structure and bus marshalling garage remains intact.

The Site is located in a commercial area with East Michigan Street abutting to the north, Lake Drive abutting to the east, and East Clybourn Street abutting to the south. Based on the review of an ALTA Survey prepared for the property, dated August 10, 2016, the Site appears to grade downward to the south, with an elevation change of approximately 5 feet across the Site.

1.3. Previous Studies

Giles concurrently completed due diligence Phase I ESA activities, Limited Phase II ESA and a Geotechnical Exploration field activities for the Site between October 20, and November 4, 2016. The Phase I ESA identified the presence of fill containing foundry material on Site. In addition, a historic recognized environmental condition was documented in the Phase I ESA for the adjoining property to the east. The property is a closed ERP Site where similar fill conditions were encountered, and suspected spills/releases of chlorinated volatile organic compounds (VOCs) have occurred. The adjoining Site was closed with a GIS Soil Registry identifying that residual soil impact remained. Based on information gathered for the Phase I ESA, further environmental investigation of the Site was recommended.

Giles completed sixteen soil borings in conjunction with the Limited Phase II ESA to evaluate the soil environmental conditions, eight of which were completed as Ch. NR 141 variance temporary groundwater wells with prepacked well screens, to evaluate the groundwater environmental conditions of the Site. Materials encountered during the advancement of the soil borings included an 8.5-inch thick concrete slab, underlain by 1 to 2 feet of sand and gravel granular fill material. The sand and gravel granular fill was underlain by fill consisting of brown fine to medium sand with varying amounts of clay and gravel, and trace wood fragments. Fill material in several borings also included 0.5 to 5 feet of suspected foundry material and/or burnt refuse (incinerated waste), consisting of black fine to medium sand and cinders. The fill materials extended to depths ranging from approximately 4 to 18 feet below ground surface (bgs), and increased in thickness from west to east. The fill materials were underlain by native soil generally consisting of brown to gray medium sand, brown to gray clay, and silty clay with varying amounts of gravel. No staining, or unusual odors were detected in the soil samples.

Shallow groundwater was encountered between approximately 10.3 to 15.6 feet bgs. Based upon local topography, the direction of groundwater flow for shallow groundwater is inferred to be east across the Site towards Lake Michigan.

Volatile Organic Compounds (VOCs) including benzene and trichloroethene (TCE) were detected in the shallow fill material at the Site. Benzene was detected at concentrations

exceeding the WAC Ch. NR 720 Residual Contaminant Level (RCL) for groundwater protection in samples collected in six boring locations. TCE was detected in the sample collected from the shallow fill material in one soil boring. No other VOCs were detected above the RCLs for groundwater protection or direct contact in the remaining soil borings.

PAHs and metals (arsenic, lead, selenium, and mercury) were detected at concentrations that exceed their respective RCLs for direct contact and/or groundwater protection in the 16 shallow fill material soil samples submitted for laboratory analysis. No PAHs were detected above their respective RCLs in samples from native soil. The distribution of PAH impacts was noted to be widespread throughout the fill.

Select VOCs (p-isopropyltoluene and toluene) were detected in the groundwater samples collected from two of the eight temporary wells sampled. However, the detected VOCs do not exceed their respective WAC Ch. NR 140 preventive action limits (PALs). No other VOCs were detected above their respective laboratory method detection limits (MDLs) in the groundwater sampled.

Select PAHs (benzo(a)pyrene, benzo(b)flouranthene, and chrysene) were detected in the groundwater samples collected from two of the eight temporary wells sampled at concentrations that exceeded their respective PALs, but were below their respective WAC Ch. NR 140 Enforcement Standards (ESs). The detected PAH concentrations are considered biased high due to the presence of suspended solids (turbidity) within the groundwater samples. No other PAHs were detected above their respective PALs or ESs.

Dissolved arsenic and lead were detected in the groundwater samples collected from three of the eight temporary wells sampled. The detected dissolved arsenic slightly exceeded the WAC Ch. NR 140 ES in one sample, and the PAL in another sample. Dissolved lead exceeded the PAL for one groundwater sample.

The soil boring and temporary well locations are illustrated on Figure 2. The soil and groundwater sample analytical results from the limited Phase II ESA and includes as Tables 1 through 6.

The soil borings (B-2, B-3, B-6, B-8, B-9, B-12, B-15, and B-16), and temporary wells (BTW-1, BTW-4, BTW-7, BTW-10, BTW-11, BTW-13, and BTW-14) were abandoned on November 1, 2017. Flush-grade well protector covers were cemented in place over temporary well BTW-5, and geotechnical observation wells MW-1, MW-2, and MW-3 to protect and preserve these locations during the demolition activities which took place from November 2016 through January 2017.

Based on the findings of the Ltd. Phase II, Giles informed the owner of that the documented contaminant conditions at the Site require that the WDNR be notified of a suspected release or spill. The WDNR was provided release notification on March 7, 2017. The WDNR issued a RP letter on March 20, 2017, requesting that a site investigation be performed at the Site

in accordance with NR 716, in an effort to evaluate the extent of the impacted soil and groundwater, resulting from historic fill material placed at the Site.

Based on the data obtained and reviewed during the Limited Phase II ESA and Geotechnical Evaluation, Giles estimates between 39 thousand to 45 thousand cubic yards (cy) of fill exists over the native soil, and this material will need to be managed during construction activities. Based on the levels of VOCs, PAHs, and metals detected in the fill, it is our opinion that the fill may be disposed of at a licensed solid waste landfill with limited sampling of the excavation walls and floor prior to or during construction. Alternatively, the developer has requested that Giles structure the Scope of services for the SIWP to collect sufficient data for the fill material in order to petition the WDNR for under Ch. NR 718 to permit the disposal of the fill at an alternative disposal facility (e.g. quarry reclamation). It is understood that the disposal at an alternative facility rather than a landfill would require approval by the WDNR, and the collection of approximately 120 to 130 additional soil samples from the contaminated material to be removed. These samples would be analyzed for VOCs, PAHs, and select metals. In addition, Synthetic Precipitation Leaching Procedure (SPLP) fresh water leach tests by ASTMD Method 3987-85 will be utilized to demonstrate that the leaching risk from contaminated fill material is low.

Giles has also included the completion up to two groundwater sampling events at the Site. Although concentrations of VOCs and PAHs detected in groundwater samples from the limited Phase II ESA did not exceed their respective ES, the additional groundwater sampling was is included as a contingency measure, should conditions change from those revealed during the Limited Phase II ESA.

A detailed description of Giles investigation strategy, scope of services, and schedule to complete the SI activities are presented in the subsequent sections.

2. TECHNICAL APPROACH AND SCOPE OF SERVICES

2.1. Technical Approach

Based on the findings of Giles Limited Phase II ESA and Geotechnical Evaluation, and the work performed by others for the former ERP Site adjoining to the west, it is known that the fill condition is not limited to the development property limits of the Site, but is an area-wide condition extending along the Lake Michigan shoreline. Therefore, the proposed sampling for the SI is designed to achieve three objectives: 1) define the limits of known VOC-impacted fill, which will require disposal at a licensed landfill; 2) collect samples throughout the Site to provide a sufficient sample set to petition the WDNR for off-Site disposal of the impacted soil at an alternative fill site (other than a landfill) under Ch. NR 718., if appropriate; and, 3) Perform two groundwater sampling events and to evaluate the Site for a potential threat of vapor intrusion if conditions at the Site would warrant these efforts.

The Site investigation will include collecting soil samples for VOC analysis from 21 perimeter borings, and up to 18 additional borings to "infill" the 75-foot grid completed during the Limited Phase II ESA, resulting in a 35-foot grid spacing across the Site. A contingency for 5 additional perimeter borings is also included should additional VOCs be detected and require delineation for landfill disposal acceptance. Proposed soil boring and temporary well locations are shown on Figure 3.

2.2. Scope of Services

The following Section outlines the proposed SI scope of services and briefly describes the methods and procedures for each task performed. Detailed descriptions of the methods and procedures to be implemented during this SI are included in Appendix A.

- **Prepare a Site Health and Safety Plan (SHSP).** A SHSP will be prepared in accordance with 29 CFR 1910 to maintain compliance with the Occupational Safety and Health Administration's (OSHA's) Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) for the proposed field activities to be performed at the Site.
- **Conduct a WAC Ch. NR 716 Site Investigation**. As specified in the aforementioned Technical Approach Section, the fill is an area-wide condition extending along the Lake Michigan shoreline. Therefore, the investigation sampling will be designed to achieve three objectives: The Site investigation will include collecting soil samples for VOC analysis from 21 perimeter borings, and up to 18 additional borings to "infill" the 75-foot grid completed during the Limited Phase II ESA thus resulting in a 35-foot grid spacing across the Site. A contingency for 5 additional perimeter borings is also included should additional VOCs be detected and require delineation for landfill disposal acceptance. Sampling criteria shall include:
    - Soil samples will be collected continuously and logged and described on two foot intervals. Each two foot soil sample interval will be field screened in the field using a photoionization detector (PID).
    - Soil fill samples will be collected from varying intervals in each boring based on the thickness and type of fill encountered.
    - Submit soil samples from each boring to a State of Wisconsin certified analytical laboratory for laboratory analysis of VOCs by US EPA Method 8260B, PAHs by US EPA Method 8070, and the select metals arsenic, lead, mercury and selenium.
    - Collect 6 soil samples from areas where high VOCs, PAHs, and or metals exist and submit them to State of Wisconsin certified analytical laboratory for SPLP preparation and for the ASTM 3987-85 freshwater leaching procedure and analysis of the leachate for VOCs, PAHs, and or metals.
    - Construct WAC Ch. NR 141 variance temporary wells with prepacked well screens in up to ten of the soil borings to facilitate groundwater sampling (if required by the WDNR).

  - Gauge and sample the temporary wells for two consecutive events, should groundwater contamination be detected.
  - Abandon the borings in accordance with the WAC Ch. NR 141 requirements.
- **Site Investigation-Derived Waste Management and Disposal.** Investigation-derived soil cuttings and development and purge water generated during the SI will be containerized. The soil and development/purge water investigative waste will be profiled and disposed of through a licensed waste disposal facility. Field decontamination procedures for the down-hole sampling equipment will be performed in accordance with Giles SOPs, included in Appendix A.
- **Site Investigation Report Preparation.** Following completion of the SI field activities, Giles will prepare Site Investigation report to summarize the findings. This report will be submitted to the WDNR for review and concurrence with findings and conclusions of the SI. The Si will also include a Remedial Options Alternatives Section which will specify and discuss the appropriate alternatives for soil management under WAC Ch. NR 718.12.

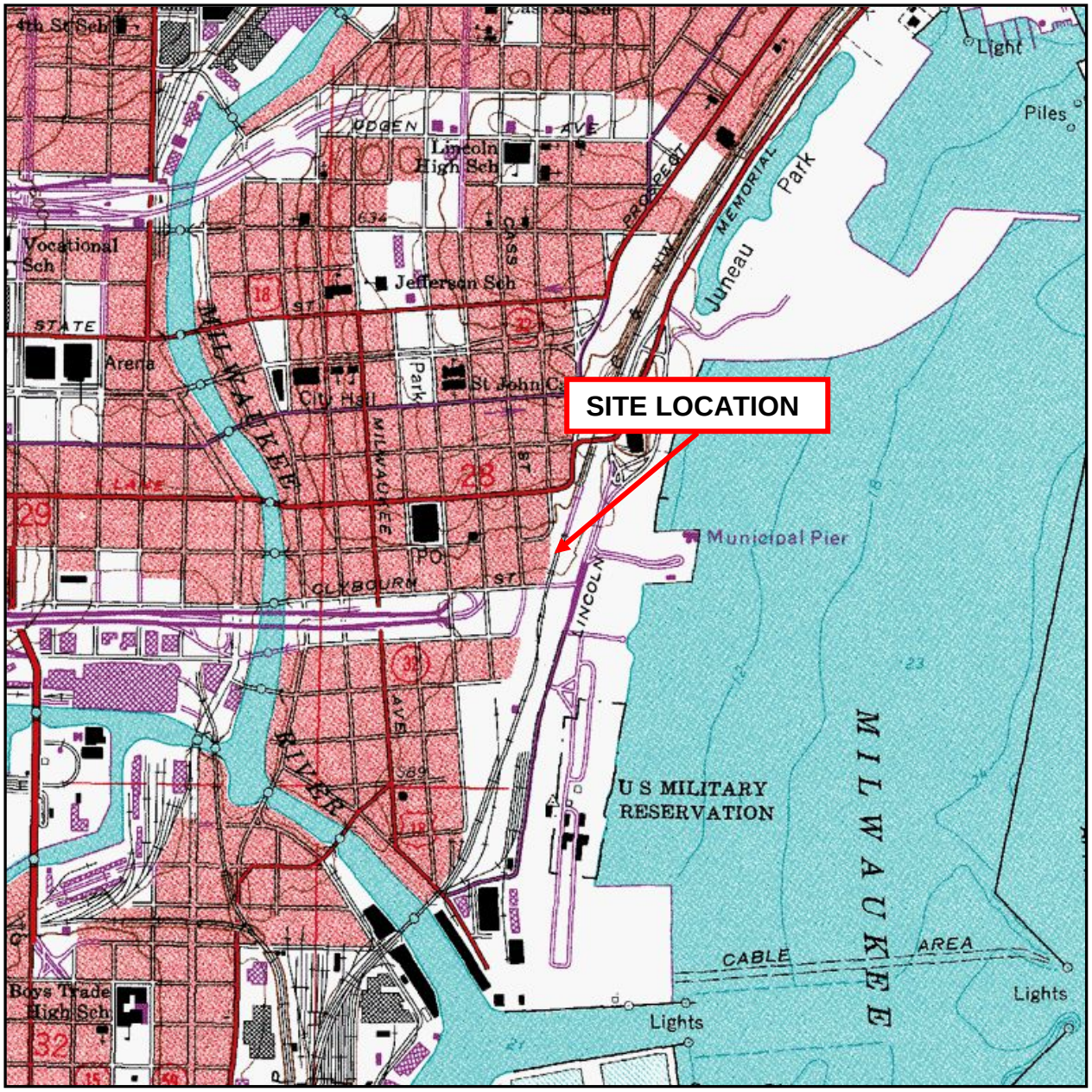
2.3. Site Surveying

Sampling locations will be measured in and documented on a Site Plan. Site physical features, monitoring well and direct-push boring locations, and other pertinent above-ground features will be included. Site elevation data will be established to a temporary benchmark for future reference and elevations to the well top of casing and ground surface will be established for each temporary well.

3. SCHEDULE

Giles anticipates two weeks to initiate the utility location, drilling, and soil sampling work. Giles anticipates a ten working day turnaround time for laboratory results. The SI activities, as listed, are expected to take up to 4 months to complete. We will provide copies of the final SIR within eight weeks after receipt of the laboratory results. A Project Schedule is included as Appendix B.

FIGURES



Source: USGS *Milwaukee, Wisconsin* 7.5-Minute Series (topographic) Quadrangle Map (1958; photorevised in 1971)

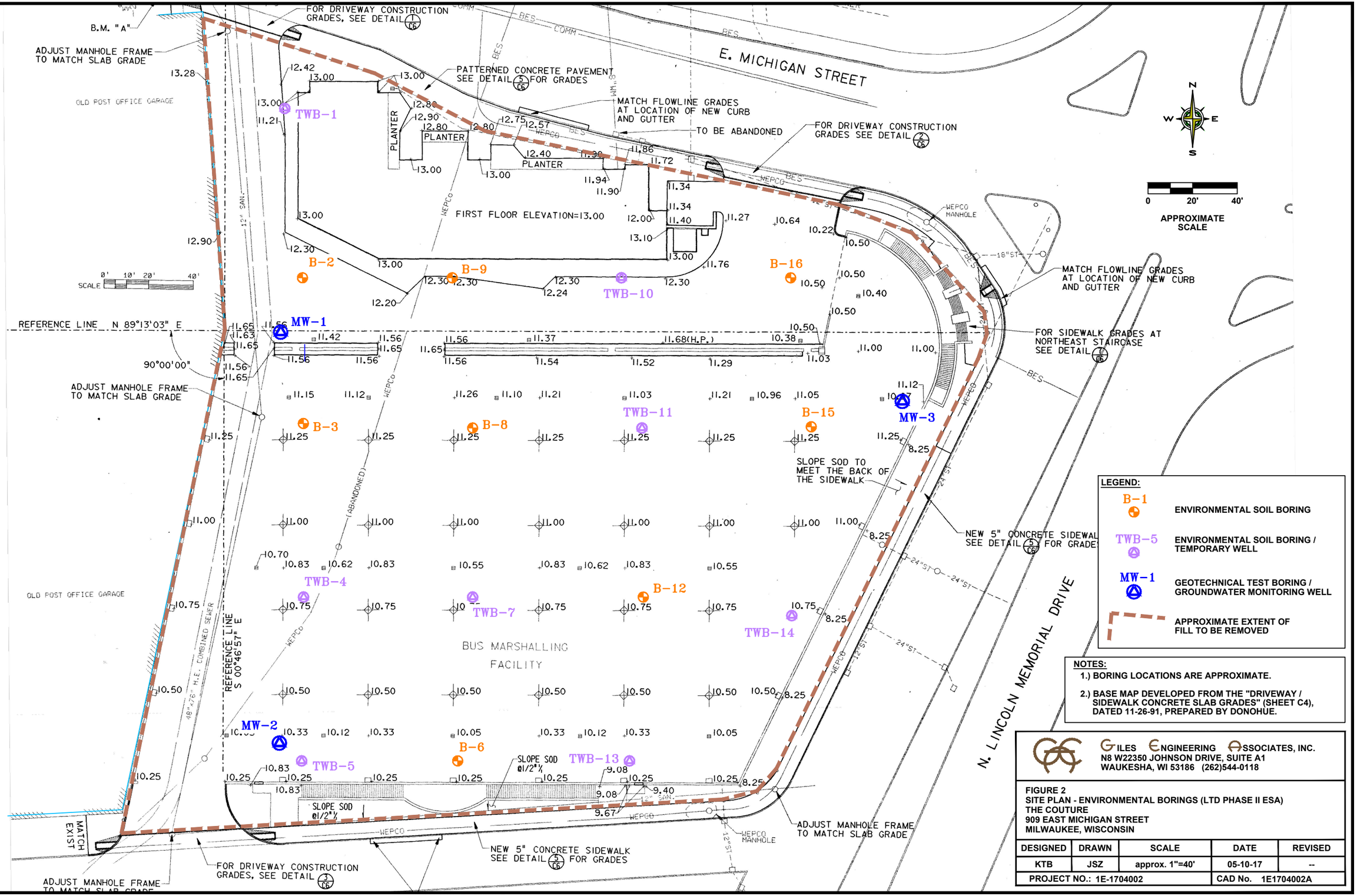
Scale: 1:24,000
Contour Interval: 10 Feet

N
W E
S

FIGURE 1
SITE LOCATION MAP

The Couture Development
909 East Michigan Street
Milwaukee, Wisconsin
Project No. 1E-1704002

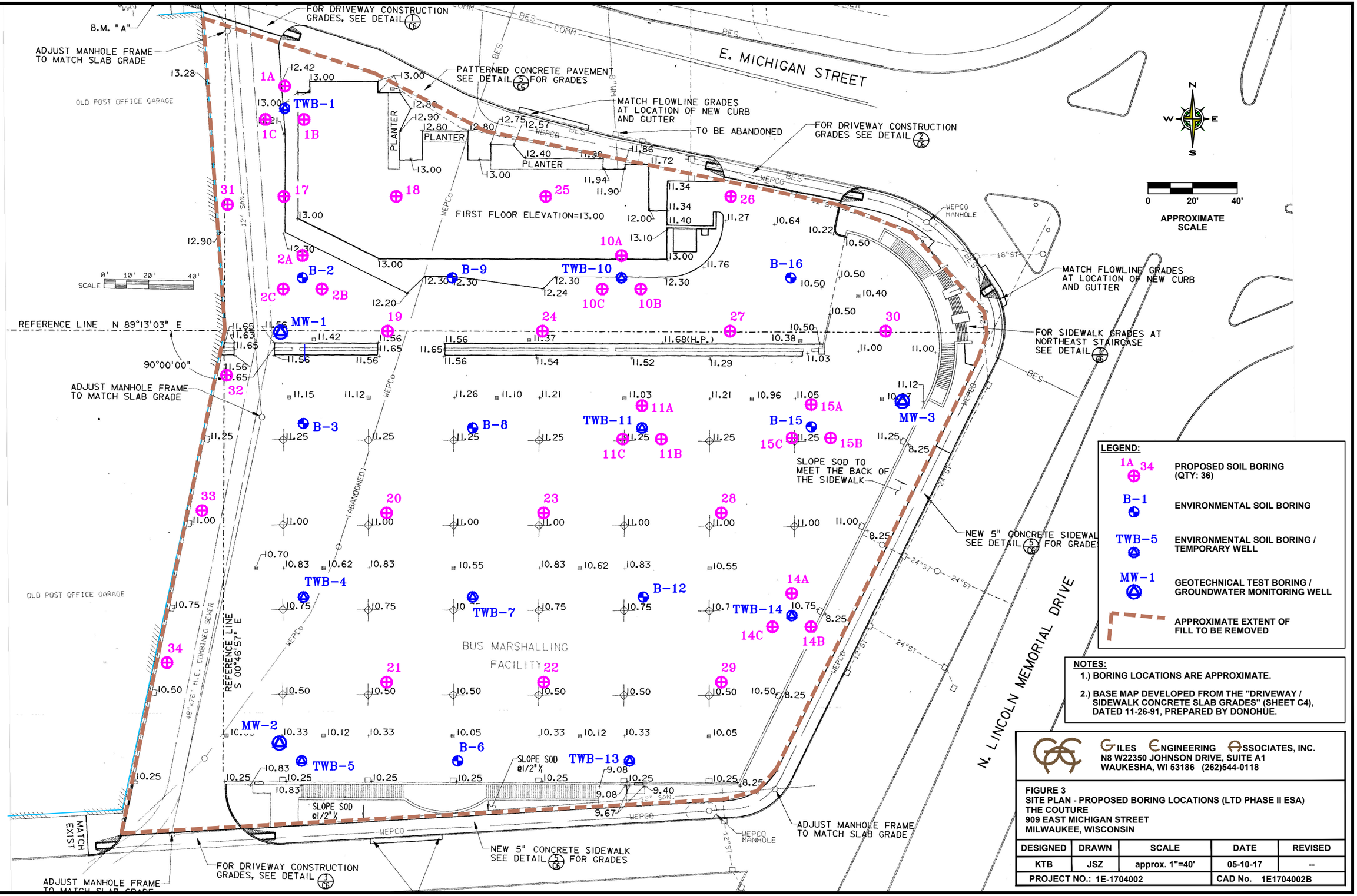
GILES
ENGINEERING ASSOCIATES, INC.



GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 2
SITE PLAN - ENVIRONMENTAL BORINGS (LTD PHASE II ESA)
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
KTB	JSZ	approx. 1"=40'	05-10-17	--
PROJECT NO.: 1E-1704002			CAD No. 1E1704002A	



GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 3
SITE PLAN - PROPOSED BORING LOCATIONS (LTD PHASE II ESA)
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
KTB	JSZ	approx. 1"=40'	05-10-17	--
PROJECT NO.: 1E-1704002			CAD No. 1E1704002B	

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY-DETECTED VOCs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location																NR 720 RCL[1] (µg/kg)	
	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8		Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)
Sample Depth (feet)	2-4	12-14	2-4	10-12	2-4	14-18	2-4	14-16	2-4	14-16	2-4	14-16	2-4	16-18	2-4	12-14^		
Sample Collection Date	10/20/16	10/20/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16		
PID (instrument units)	20	<5	15	15	25	25	18	<5	25	21	20	16	25	<5	<5	<5		
Detected VOCs (µg/kg)																		
Benzene	**376**	<25.0	**120**	<25.0	<25.0	NA	**31.5 J**	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**5.1**	**1,490**
Ethylbenzene	32.2 J	<25.0	38.0 J	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**1,570**	**7,470**
p-Isopropyltoluene	<25.0	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**NS**	**162,000**
Naphthalene	65.4 J	<40.0	74.7 J	<40.0	65.0 J	NA	71.7 J	<40.0	134 J	<40.0	68.0 J	NA	52.8 J	<40.0	50.5 J	<40.0	**658**	**5,150**
Toluene	<25.0	<25.0	29.6 J	<25.0	<25.0	NA	40.4 J	<25.0	33.0 J	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**1,107**	**818,000**
Trichloroethene	<25.0	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**3.6**	**1,260**
1,2,4-TMB	38.4 J	<25.0	31.1 J	<25.0	<25.0	NA	<25.0	<25.0	37.7 J	<25.0	<25.0	NA	<25.0	<25.0	<25.0	<25.0	**1,382**	**89,800**
Xylenes, Total	<75.0	<75.0	<75.0	<75.0	<75.0	NA	<75.0	<75.0	85.3 J	<75.0	<75.0	NA	<75.0	<75.0	<75.0	<75.0	**3,960**	**260,000**

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
VOCs: Volatile Organic Compounds
µg/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
J: Concentration reported between the laboratory method detection limit and the reporting limit.
^ Non-detect results for deep soil samples collected from B-8, B-9, and B-12 are based on a wet weight basis.
NA: Not Analyzed
NS: No Standard
Result shown "underlined / red" exceeds the calculated RCL for the soil to groundwater pathway.

TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS SUMMARY-DETECTED VOCs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location															NR 720 RCL[1] (µg/kg)	
	B-9		B-10		B-11		B-12		B-13		B-14		B-15		B-16	Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)
Sample Depth (feet)	2-4	10-12^	2-4	14-16	2-4	12-14	2-4	14-16^	2-4	14-16	2-4	14-15	2-4	16-18	2-4		
Sample Collection Date	10/20/16	10/21/16	10/20/16	10/21/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16		
PID (instrument units)	25	25	10	<5	28	<5	30	<5	20	14	20	<5	20	<5	5		
Detected VOCs (µg/kg)																	
Benzene	<25.0	<25.0	**120**	<25.0	**56.8 J**	<25.0	<25.0	<25.0	<25.0	<25.0	**65.3**	**92.1**	<25.0	<25.0	<25.0	**5.1**	**1,490**
Ethylbenzene	<25.0	<25.0	<25.0	<25.0	31.4 J	<25.0	<25.0	<25.0	<25.0	<25.0	29.0 J	<25.0	<25.0	<25.0	<25.0	**1,570**	**7,470**
p-Isopropyltoluene	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	86.2	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**NS**	**162,000**
Naphthalene	48.9 J	<40.0	125 J	<40.0	175 J	<40.0	53.0 J	<40.0	47.6 J	<40.0	119 J	155 J	66.2 J	<40.0	65.8 J	**658**	**5,150**
Toluene	<25.0	<25.0	49.2 J	<25.0	144	<25.0	<25.0	101	<25.0	<25.0	57.1 J	33.1 J	<25.0	<25.0	43.5 J	**1,107**	**818,000**
Trichloroethene	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**46.7 J**	<25.0	<25.0	**3.6**	**1,260**
1,2,4-TMB	<25.0	<25.0	41.8 J	<25.0	59.8 J	<25.0	<25.0	<25.0	<25.0	<25.0	45.4 J	<25.0	<25.0	<25.0	<25.0	**1,382**	**89,800**
Xylenes, Total	<75.0	<75.0	103 J	<75.0	161 J	<75.0	<75.0	<75.0	<75.0	<75.0	127 J	<75.0	<75.0	<75.0	<75.0	**3,960**	**260,000**

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
VOCs: Volatile Organic Compounds
µg/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
J: Concentration reported between the laboratory method detection limit and the reporting limit.
^ Non-detect results for deep soil samples collected from B-8, B-9, and B-12 are based on a wet weight basis.
NA: Not Analyzed
NS: No Standard
Result shown "underlined / red" exceeds the calculated RCL for the soil to groundwater pathway.

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY - DETECTED PAHs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location																NR 720 RCL[1] (µg/kg)	
	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8		Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)
Sample Depth (feet)	2-4	12-14	2-4	10-12	2-4	14-18*	2-4	14-16	2-4	14-16	2-4	14-16*	2-4	16-18	2-4	12-14		
Sample Date	10/20/16	10/20/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16		
PID (instrument units)	20	<5	15	15	25	25	18	<5	25	21	20	16	25	<5	<5	<5		
Detected PAHs (µg/kg)																		
Acenaphthene	27.8 J	<4.7	50.9 J	<4.7	18.3 J	<4.7	77.2	<4.7	14.5 J	<4.2	7.4 J	<4.6	14.7	<4.3	4.3 J	<4.3	NS	3,440,000
Acenaphthylene	10.3 J	<4.0	<14.3	<4.0	27.7	<4.0	21.9 J	<4.0	39.0	<3.6	17.5	<3.9	32.5	<3.6	6.0 J	<3.6	NS	NS
Anthracene	123	15.2 J	191	<7.0	92.2	<6.8	257	<7.0	129	<6.2	48.8	<6.7	86.4	<6.3	21.1	8.3 J	196,949	17,200,000
Benzo (a) anthracene	(65.4 J)	43.0	(74.7 J)	<3.9	(65.0 J)	<3.8	(71.7 J)	<3.9	(134 J)	<3.4	68.0 J	<3.7	(52.8 J)	<3.5	50.5 J	9.0 J	NS	147
Benzo (a) pyrene	(308)	44.6	(400)	<3.1	(364)	<3.0	831	<3.1	(236)	<2.7	(153)	<3.0	(217)	<2.8	(55.5)	7.1 J	470	15
Benzo (b) fluoranthene	(390)	58.4	487	<3.4	503	<3.4	1,170	<3.4	(378)	<3.1	(226)	<3.3	(299)	<3.1	77.4	9.5 J	479	148
Benzo (g,h,i) perylene	182	32.0	235	3.4 J	224	<2.4	681	<2.5	118	<2.2	55.2	<2.4	80.3	<2.2	34.3	4.7 J	NS	NS
Benzo (k) fluoranthene	164	25.2	216	<3.1	207	<3.0	496	<3.1	137	<2.7	83.5	<3.0	129	<2.8	32.4	4.8 J	NS	1,480
Chrysene	338	52.6	447	7.6 J	407	<4.0	849	4.8 J	343	<3.7	179	<4.0	267	<3.7	67.6	11.4 J	145	14,800
Dibenz (a,h) anthracene	(46.9)	8.5 J	(58.0)	<2.7	(64.5)	<2.7	(173)	<2.7	(32.9)	<2.4	(21.9)	<2.6	(30.0)	<2.5	9.2	<2.5	NS	15
Fluoranthene	705	89.3	948	<6.3	576	<6.2	1,310	<6.4	483	<5.7	256	<6.1	455	<5.8	96.3	21.0	88,878	2,290,000
Fluorene	36.5	<5.1	43.4 J	<5.0	19.1 J	<5.0	68.8	<5.0	14.7 J	<4.5	6.0 J	<4.9	15.8	<4.6	<4.4	<4.6	14,830	2,290,000
Indeno (1,2,3-cd) pyrene	(159)	25.8	(214)	<2.7	(201)	<2.6	(559)	<2.7	97.5	<2.4	59.6	<2.6	83.3	<2.4	28.5	3.8 J	NS	148
1-Methylnaphthalene	46.2	<4.9	64.5	<4.9	45.6	<4.8	69.7	<4.9	79.4	<4.4	63.9	<4.7	45.0	<4.4	24.1	5.5 J	NS	15,600
2-Methylnaphthalene	60.1	<6.1	107	<6.1	58.8	<6.0	77.4	<6.1	126	<5.4	81.5	<5.9	63.8	<5.5	32.0	8.2 J	NS	229,000
Naphthalene	38.1 J	<10.3	93.6 J	<10.2	54.7 J	<10.1	59.8 J	<10.3	85.4	<9.2	63.4	<9.9	62.1	<9.3	20.6 J	<9.3	658	5,150
Phenanthrene	340	46.3 J	485	<14.2	308	<14.0	801	<14.2	360	<12.7	186	<13.7	325	<12.9	85.6	24.0 J	NS	NS
Pyrene	563	83.5	770	<5.5	523	<5.4	1,130	<5.5	475	<4.9	224	<5.3	386	<5.0	93.5	17.2	54,546	1,720,000

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016.
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
PAHs: Polynuclear Aromatic Hydrocarbons
µg/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
J: Estimated concentration at or above the laboratory limit of detection and below the limit of quantitation.
* Laboratory analysis for the deep soil samples collected from B-3 and B-6 was conducted outside of the recognized method holding time.
NS: No Standard
Result shown "underlined / red" exceeds the calculated RCL for the soil to groundwater pathway.
Result shown "(parenthesis / green)" exceeds the calculated RCL for the non-industrial land use direct-contact pathway.

TABLE 2 (Continued)
SOIL ANALYTICAL RESULTS SUMMARY - DETECTED PAHs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location															NR 720 RCL[1] (µg/kg)	
	B-9		B-10		B-11		B-12		B-13		B-14		B-15		B-16	Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)
Sample Depth (feet)	2-4	10-12	2-4	14-16	2-4	12-14	2-4	14-16	2-4	14-16	2-4	14-15	2-4	16-18	2-4		
Sample Date	10/20/16	10/21/16	10/20/16	10/21/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16		
PID (instrument units)	25	25	10	<5	28	<5	30	<5	20	14	20	<5	20	<5	5		
Detected PAHs (µg/kg)																	
Acenaphthene	20.2	<4.0	33.8	6.5 J	40.9	<4.6	4.7 J	112	19.6	13.3 J	65.7	189	5.1 J	<4.7	5.9 J	NS	3,440,000
Acenaphthylene	3.7 J	<3.4	18.6 J	5.0 J	54.5	<3.9	14.3	232	10.1 J	<4.0	15.3 J	26.8 J	14.3	<4.0	6.3 J	NS	NS
Anthracene	64.4	<5.9	124	22.6 J	155	<6.8	32.2	395	72.6	15.8 J	241	347	25.2	10.4 J	30.8	196,949	17,200,000
Benzo (a) anthracene	48.9 J	<3.3	(125 J)	45.0	(175 J)	<3.8	53.0 J	1,010	47.6 J	25.2	(119 J)	486	66.2 J	79.6	65.8 J	NS	147
Benzo (a) pyrene	(137)	<2.6	(438)	43.5	(351)	<3.0	(63.5)	1,300	(139)	24.3	650	490	(101)	117	(74.7)	470	15
Benzo (b) fluoranthene	(179)	<2.9	665	49.8	537	<3.4	88.8	1,190	(176)	26.0	818	526	135	213	106	479	148
Benzo (g,h,i) perylene	46.7	<2.1	222	21.2	112	<2.4	40.4	691	45.7	14.3	228	244	64.7	82.5	47.8	NS	NS
Benzo (k) fluoranthene	77.6	<2.6	255	23.6	189	<3.0	41.8	496	83.1	15.7	385	245	57.7	72.2	42.4	NS	1,480
Chrysene	142	3.7 J	490	50.4	470	<4.0	88.0	1,060	162	33.7	654	547	119	144	109	145	14,800
Dibenz (a,h) anthracene	(15.1)	<2.3	(72.9)	6.0 J	(44.5)	<2.7	11.5	169	(15.9)	<2.7	(79.7)	72.4	(19.3)	27.6	13.8	NS	15
Fluoranthene	319	<5.3	772	94.2	730	<6.2	121	1,480	363	59.1	1,380	1,200	176	113	155	88,878	2,290,000
Fluorene	19.3	<4.2	30.4	5.5 J	49.0	<5.0	<4.6	115	26.5	<5.0	71.3	156	4.4 J	<5.0	7.5 J	14,830	2,290,000
Indeno (1,2,3-cd) pyrene	49.2	<2.3	(212)	19.5	119	<2.6	33.9	562	46.5	11.7	(244)	224	55.1	70.6	39.5	NS	148
1-Methylnaphthalene	6.8 J	<4.1	124	<4.9	258	<4.8	29.9	83.0 J	11.0 J	<4.9	32.0 J	77.8 J	29.1	<4.9	156	NS	15,600
2-Methylnaphthalene	8.1 J	<5.1	199	<6.1	323	<6.0	36.4	131	10.9 J	<6.1	42.9 J	77.0 J	36.4	<6.1	211	NS	229,000
Naphthalene	9.1 J	<8.6	107	<10.3	242	<10.1	25.9 J	438	14.2 J	<10.3	36.1 J	364	38.0	<10.2	181	658	5,150
Phenanthrene	215	<12.0	530	44.4 J	849	<13.9	105	851	291	36.8 J	667	1,150	127	55.8	207	NS	NS
Pyrene	253	<4.6	638	80.3	659	<5.4	109	1,750	301	69.5	1,100	1,050	164	91.5	140	54,546	1,720,000

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016.
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
PAHs: Polynuclear Aromatic Hydrocarbons
µg/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
J: Estimated concentration at or above the laboratory limit of detection and below the limit of quantitation.
* Laboratory analysis for the deep soil samples collected from B-3 and B-6 was conducted outside of the recognized method holding time.
NS: No Standard
Result shown "underlined / red" exceeds the calculated RCL for the soil to groundwater pathway.
Result shown "(parenthesis / green)" exceeds the calculated RCL for the non-industrial land use direct-contact pathway.

TABLE 3
SOIL ANALYTICAL RESULTS SUMMARY-DETECTED RCRA METALS
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location																NR 720 RCL[1] (mg/kg)		
	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8		Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)	Background Threshold Value
Sample Depth (feet)	2-4	12-14	2-4	10-12	2-4	14-18	2-4	14-16	2-4	14-16	2-4	14-16	2-4	16-18	2-4	12-14			
Sample Date	10/20/16	10/20/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16			
PID (instrument units)	20	<5	15	15	25	25	18	<5	25	21	20	16	25	<5	<5	<5			
Detected RCRA Metals (mg/kg)																			
Arsenic	5.5 J	**3.1 J**	4.9 J	**3.9 J**	6.5	**5.8**	4.6 J	**5.4 J**	5.8	**1.6 J**	5.9	**1.4 J**	3.8 J	**3.8 J**	**(9.8)**	**3.1 J**	**0.584**	**0.613**	**8.0**
Lead	**58.7**	20.2	**113**	17.3	**115**	7.6	25.6	8.7	**144**	2.9	**57.5**	1.8	22.7	6.3	**142**	3.5	**27**	**400**	**52**
Mercury	0.10 J	<0.045	0.19	<0.040	**0.27**	NA	0.047 J	<0.042	**0.69**	<0.040	0.11 J	NA	0.053 J	<0.038	**0.24**	<0.039	**0.208**	**3.13**	**NS**
Selenium	**65.4 J**	<1.3	**74.7 J**	<1.3	**65.0 J**	NA	**71.7 J**	<1.5	**134 J**	<1.1	**68.0 J**	NA	**52.8 J**	<1.2	**50.5 J**	<1.2	**0.52**	**391**	**NS**

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016.
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
RCRA: Resource Conservation and Recovery Act
mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)
J: Concentration reported between the laboratory method detection limit and the reporting limit.
NS: No Standard
Background Threshold Value (BTV) applies to industrial and non-industrial direct-contact (upper 4 feet of soil)
Result shown "underlined/red" exceeds the calculated RCL for the soil to groundwater pathway.
Result shown "parenthesis /(green)" exceeds the calculated RCL for the non-industrial land use direct-contact pathway.

TABLE 3 (Continued)
SOIL ANALYTICAL RESULTS SUMMARY-DETECTED RCRA METALS
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location															NR 720 RCL[1] (mg/kg)		
	B-9		B-10		B-11		B-12		B-13		B-14		B-15		B-16	Soil to Groundwater Pathway	Direct-Contact Pathway (Non-Industrial)	Background Threshold Value
Sample Depth (feet)	2-4	10-12	2-4	14-16	2-4	12-14	2-4	14-16	2-4	14-16	2-4	14-15	2-4	16-18	2-4			
Sample Date	10/20/16	10/21/16	10/20/16	10/21/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16	10/25/16	10/20/16	10/31/16	10/20/16	10/21/16	10/20/16			
PID (instrument units)	25	25	10	<5	28	<5	30	<5	20	14	20	<5	20	<5	5			
Detected RCRA Metals (mg/kg)																		
Arsenic	5.5	**1.9 J**	6.0	**2.2 J**	6.5	**4.3 J**	5.8	**7.9**	5.5	**2.0 J**	6.0	**5.5 J**	4.5 J	**4.9 J**	2.1 J	**0.584**	**0.613**	**8.0**
Lead	51.5	2.7	**71.7**	15.8	**82.9**	11.6	**132**	**120**	**59.0**	14.8	**137**	**63.6**	**67.5**	11.2	18.6	**27**	**400**	**52**
Mercury	0.13	<0.035	**0.37**	0.056 J	**0.21**	<0.040	0.13	**0.84**	0.11 J	0.059 J	**0.29**	<0.040	0.14	<0.041	0.047 J	**0.208**	**3.13**	**NS**
Selenium	**48.9 J**	<1.1	**125 J**	<1.2	**175 J**	<1.3	**53.0 J**	**2.0 J**	**47.6 J**	<1.2	**119 J**	<1.3	**66.2 J**	<1.3	**65.8 J**	**0.52**	**391**	**NS**

Notes:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 720 Residual Contaminant Levels from WDNR RCL Spreadsheet updated June 2016.
RCLs: Residual Contaminant Levels
PID: Photoionization Detector
RCRA: Resource Conservation and Recovery Act
mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)
J: Concentration reported between the laboratory method detection limit and the reporting limit.
NS: No Standard
Background Threshold Value (BTV) applies to industrial and non-industrial direct-contact (upper 4 feet of soil)
Result shown "underlined/red" exceeds the calculated RCL for the soil to groundwater pathway.
Result shown "parenthesis /(green)" exceeds the calculated RCL for the non-industrial land use direct-contact pathway.

TABLE 4
GROUNDWATER ANALYTICAL RESULTS - DETECTED VOCs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location									NR 140[1] PAL (µg/L)	NR 140[1] ES (µg/L)
	TWB-1	TWB-4	TWB-5	TWB-7	TWB-10	TWB-11	TWB-13	TWB-14	MW-3		
Sample Date	11/1/16	11/4/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16		
Detected VOCs (µg/L)											
p-Isopropyltoluene	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	**10**	**100**
Toluene	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50	0.77 J	**160**	**800**

NOTES:

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

ES: WAC NR 140 Enforcement Standards

PAL: WAC NR 140 Preventive Action Limit

VOCs: Volatile Organic Compounds

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

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

TABLE 5
GROUNDWATER ANALYTICAL RESULTS SUMMARY - DETECTED PAHs
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location									NR 140[1] PAL (µg/L)	NR 140[1] ES (µg/L)
	TWB-1	TWB-4	TWB-5	TWB-7	TWB-10	TWB-11	TWB-13	TWB-14	MW-3		
Sample Date	11/1/16	11/4/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16		
Turbidity (NTU)	>>>	1055	7.82	20.90	61.40	10.35	5.83	87.60	14.00	**NS**	**NS**
Detected PAHs (µg/L)											
Acenaphthene	<0.0057	0.014 J	<0.0057	<0.0058	<0.0055	<0.0057	0.059	<0.0061	<0.0057	**NS**	**NS**
Acenaphthylene	<0.0047	0.032	<0.0047	<0.0047	<0.0045	<0.0047	<0.0050	<0.0050	<0.0047	**NS**	**NS**
Anthracene	0.025 J	0.064	<0.0099	<0.010	0.014 J	<0.0099	0.021 J	<0.010	<0.0099	**600**	**3,000**
Benzo(a)anthracene	0.021 J	0.13	<0.0071	<0.0072	0.021 J	<0.0071	<0.0076	<0.0076	<0.0071	**NS**	**NS**
Benzo(a)pyrene	**(0.028 J)**	**(0.12)**	<0.0099	<0.010	0.017 J	<0.0099	<0.011	<0.011	<0.0099	**0.02**	**0.2**
Benzo(b)fluoranthene	**(0.030)**	**(0.20)**	<0.0054	<0.0055	0.018 J	<0.0054	<0.0057	<0.0057	0.014 J	**0.02**	**0.2**
Benzo(g,h,i)perylene	0.025 J	0.11	<0.0064	<0.0065	0.019 J	<0.0064	<0.0068	<0.0068	0.0093 J	**NS**	**NS**
Benzo(k)fluoranthene	0.023 J	0.13	<0.0071	<0.0072	0.015 J	<0.0071	<0.0076	<0.0076	0.0078 J	**NS**	**NS**
Chrysene	**(0.043 J)**	**(0.23)**	<0.012	<0.012	0.018 J	<0.012	<0.013	<0.013	0.022 J	**0.02**	**0.2**
Dibenz(a,h)anthracene	<0.0095	0.017 J	<0.0095	<0.0095	<0.0091	<0.0095	<0.010	<0.010	<0.0095	**NS**	**NS**
Fluoranthene	0.057	0.36	<0.010	<0.010	0.047 J	<0.010	0.028 J	<0.011	0.029 J	**80**	**400**
Fluorene	<0.0075	0.012 J	<0.0075	<0.0076	<0.0072	<0.0075	0.034 J	<0.0080	<0.0075	**80**	**400**
Indeo (1,2,3-cd)pyrene	0.019 J	0.082 J	<0.017	<0.017	<0.016	<0.017	<0.018	<0.018	<0.017	**NS**	**NS**
1-Methylnaphthalene	<0.0056	0.017 J	<0.0056	<0.0056	<0.0054	<0.0056	0.014 J	<0.0059	<0.0056	**NS**	**NS**
2-Methylnaphthalene	0.0062 J	0.020 J	<0.0046	<0.0047	<0.0045	<0.0046	0.0060 J	<0.0049	0.0056 J	**NS**	**NS**
Naphthalene	<0.017	0.023 J	0.018 J	<0.017	<0.017	<0.017	0.051 J	<0.018	<0.017	**10**	**100**
Phenanthrene	0.033 J	0.18	<0.013	<0.013	0.030 J	<0.013	0.100	<0.014	0.018 J	**NS**	**NS**
Pyrene	0.059	0.31	<0.0072	<0.0073	0.049	<0.0072	0.021 J	<0.0076	0.033 J	**50**	**250**

NOTES:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 140
PAL: Preventive Action Limit
ES: Enforcement Standards
PAHs: Polynuclear Aromatic Hydrocarbons
NTU: Nephelometric Turbidity Unit
µg/L: Micrograms per Liter; equivalent to parts per billion (ppb)
>>> : Result exceeded calibration range of instrument
J: Result is less than the reporting limit but greater than the method detection limit, therefore the concentration is an approximate value
NS: No Standard Established
Concentrations expressed in (Blue / Parentheses) exceed NR 140 Preventive Action Limit

TABLE 6
GROUNDWATER ANALYTICAL RESULTS SUMMARY - DETECTED RCRA METALS
THE COUTURE
909 EAST MICHIGAN STREET
MILWAUKEE, WISCONSIN
PROJECT NO. 1E-1704002

Analyte	Sample Location									NR 140[1] PAL	NR 140[1] ES
	TWB-1	TWB-4	TWB-5	TWB-7	TWB-10	TWB-11	TWB-13	TWB-14	MW-3		
Sample Date	11/1/16	11/4/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16	11/1/16		
Turbidity (NTU)	>>>	1055	7.82	20.90	61.40	10.35	5.83	87.60	14.00	**NS**	**NS**
Detected Select RCRA Metals (µg/L)											
Arsenic	<8.3	<5.4	<8.3	**(9.0 J)**	<8.3	**10.1 J**	<8.3	<8.3	<8.3	**1**	**10**
Lead	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	**(5.1 J)**	<4.3	<4.3	**1.5**	**15**

NOTES:
(1) Wisconsin Administrative Code Natural Resources Chapter (NR) 140
ES: Enforcement Standards
PAL: Preventive Action Limit
RCRA: Resource Conservation and Recovery Act
NTU: Nephelometric Turbidity Unit
µg/L: Micrograms per Liter; equivalent to parts per billion (ppb)
>>> : Result exceeded calibration range of instrument
J: Result is less than the reporting limit but greater than the method detection limit and the concentration is an approximate value
NS: No Standard Established
Concentrations expressed in (Blue / Parentheses) exceed NR 140 Preventive Action Limit
Concentrations expressed in Red / Underline exceed NR 140 Enforcement Standard

APPENDIX A

Giles Field Standard Operating Procedures

Field
Standard Operating Procedures

Completion of Soil Borings

Field Screening and Visual Soil Classification

Soil Sample Collection and Analyses

Monitoring Well Installation and Development

Groundwater Level Measurements

Groundwater Quality Measurements

Groundwater Sample Collection and Analyses

Decontamination

Chain-of-Custody

Field Note Documentation

GILES
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Standard Operating Procedure

for

Completion of Soil Borings

Direct Push Soil and Groundwater Sampling

Soil borings will be advanced with a direct-push unit to retrieve a soil sample from a desired depth interval and/or install a temporary well for groundwater sample collection. The direct-push unit uses a 1 or 2-inch diameter Macrocore sampler to reach the top of the desired sampling depth. Once the sampler is positioned at the desired depth, a soil sample obtained with the Macrocore sampler lined with an acetate liner. To push the soil sample into the liner, the rod is advanced 2 or 4 feet with a hydraulically driven percussion hammer.

When the liner containing soil is brought to the surface and removed from the Macrocore sampler, the liner is cut open to allow access to the soil. Soil retrieved from the liner is used for PID/FID screening and visual classification (*Standard Operating Procedure for Field Screening and Visual Soil Classification)* and collection of soil sample for laboratory analyses (*Standard Operating Procedure for Soil Sample Collection and Analyses)*.

Prior to reinserting the Macrocore sampler for retrieval of another soil sample, the Macrocore sampler will be decontaminated to prevent cross-contamination between the sampling intervals. A new plastic liner will be inserted into the Macrocore sampler to be advanced to the top of the next sample interval. The sampling procedure will be repeated at 2- or 4-foot continuous depth intervals until the end of each Direct-push boring.

The information collected during Direct-push advancement will be presented on the final borehole logs. The logs will include information on sampling intervals and other pertinent information related to the Direct-push activities. Soil investigative waste management and disposal will follow the Standard Operating Procedure for Investigative Derived Waste.

Standard Operating Procedure
for
Field Screening and Visual Soil Classification

A portion of each soil sample will be screened for organic vapors, using a photoionization detector (PID) or a flame ionization detector (FID). The volatile vapor scan technique with either a PID or FID is a field screening method used to assess the presence of total volatile compounds. The PID will typically be equipped with a 10.6 electron-volt (eV) lamp. However, this may vary depending upon contaminant type anticipated. The PID will be zeroed, using ambient air, and then calibrated with 100 parts per million (ppm) isobutylene gas (benzene equivalent) in accordance with the manufacturers specifications prior to use each day. The PID calibration data will be recorded on the *Photoionization Detector Calibration Documentation* form.

At the discretion of the Giles project manager, an FID may be used instead of the PID. An FID must be rented, and subsequently calibrated to the manufacturer's specifications prior to use in the field for the first time and daily thereafter.

Note: This SOP for Soil Sample Field Screening and Soil Sample Collection must be applied to all sites regulated by the Wisconsin Department of Natural Resources (WDNR). This protocol may not be approved or recognized as an acceptable SOP for soil sample screening/sampling in other states and therefore, should be re-evaluated for other states, or when the EPA has regulatory jurisdiction.

This protocol has been adopted with consideration given for field-time constraints, reducing the amount of hazardous waste (methanol) generated, and unnecessary use/waste of glass-ware. However, this protocol can only be implemented properly if the field technician allows adequate time to perform the following tasks correctly. The Giles technician, being the environmental technician onsite, is the manager of the field activity, and the drilling crew must adhere to the speed the field representative dictates. Environmental field screening and soil sample collection will always dictate the work (drilling) rate. If work rate problems arise, contact the Giles project manager immediately.

- Prior to drilling each borehole, prepare heavy-duty re-sealable containers (i.e. zip-lock bags) freezer bags for each soil sample interval anticipated to be collected per boring. The re-sealable container will be used for field screening. With a ball point pen (avoid indelible large markers), write the sample interval depth on the bags (ie; 0-2, 2-4, etc.). Laboratory supplied glassware will be provided for samples to be submitted for analysis.

- Once the drilling crew provides the split-spoon or sleeve sample (interval of soil), a representative portion of the entire spoon length will be collected and split into replicate portions and placed in the laboratory supplied glassware and re-sealable container. The laboratory samples will be immediately placed in a sample cooler on ice, and cooled to 4 degrees Celsius; the re-sealable container will be placed in a location to promote volatilization. Volatilization will occur by warming the sample, preferably to room temperature if possible.

- The split portion of the interval will be classified by Giles field personnel in general accordance with the Unified Soil Classification System (USCS) guidelines.

- Once the boring has been completed and the split soil samples have been containerized for field screening and potential laboratory analysis, field screening will be performed. Field screening will be performed by inserting the probe end of the PID into re-sealable container. The PID should register a stable value within 5 seconds. Avoid subjecting the PID unit to excessive moisture by using a moisture trap on the probe end at all times. After removing the PID probe from the sample, allow the PID several seconds to return to background prior to subjecting the instrument to the next field screening sample. Measure and record the readings of the field screening soil samples one after another.

- Based on the field screening results and the field protocol determined by the Project Manager, select the split portion of the sample intervals for laboratory analysis preparation from the cooler. Follow the SOP for Soil Sample Collection and Analyses.

- The samples not selected for laboratory submittal and the field-screened samples will be managed in the same manner as the soil cuttings.

Soil samples should be containerized within 30 minutes of collection from the split spoon or sleeve sample. Again note the lamp of a PID may become saturated and produce false (high) readings if subjected to high repeated moisture. Moisture traps should always be used and then be replaced after use.

Upon completion of soil classification of each soil sample, the soil sample description will be logged on the soil boring log. The description of each soil sample interval will include information on soil type, gradation, color, moisture content, field PID/FID readings, sample recoveries, N values, total boring depth and whether a well/piezometer was installed. Sample intervals where the soil was collected for laboratory analysis will be clearly marked on the logs. The appearance of the soil samples and any incidental odors will also be noted on the logs.

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Soil Sample Collection and Analyses

The results of soil sample field screening combined with visual and olfactory observations will aid in selecting samples for laboratory analysis. The select soil samples will be submitted to a laboratory for analyses as required by the sampling plan. Depending on suspected contaminants at a specific site, these analyses may include volatile organic compounds (VOCs) or petroleum VOCs (PVOCs), polynuclear aromatic hydrocarbons (PAHs), Resource Conservation and Recovery Act (RCRA) metals, and/or polychlorinated biphenyls (PCBs).

Upon opening of the sampling device (e.g., split-spoon or plastic liner), the soil sample will be split for organic vapor field screening and collection of laboratory analyses, in accordance with the SOP for Field Screening and Visual Classification. The recovered soil will be partitioned in the sampling device and will be placed in two re-sealable containers per interval. One re-sealable container will be immediately placed in a cooler and stored at 4 degrees Celsius. The second re-sealable container per interval will be set aside for field screening. This will provide temporary sample preservation while field screening is performed on the replicate portion of the sample. Sticks, rocks and large debris will be removed from the sample aliquots sent to the laboratory. A new pair of Nitrile gloves will be worn for the handling of each sampling interval.

The soil sample collection, storage, and transportation will be performed in general accordance with USEPA, and/or Wisconsin Department of Natural Resources (WDNR) specifications and follow standard Chain-of-Custody (COC) requirements (including keeping samples in a refrigerator or on ice in a cooler).

Certain soil analyses (e.g. VOCs, PVOCs, etc) require that a specific amount of soil be weighed in the field before placing in the sample container. To weigh appropriate amount of soil, the field scale will be used. Prior to use, the scale will be properly calibrated in accordance with the calibration procedure described in the *Standard Operating Procedure for Use of Field Equipment*. Calibration will be recorded in a field book or on the appropriate form.

Specific requirements for sample container type, preservative, and holding times are discussed in the following section of this SOP and summarized in Table 1, attached. Please note that the type of containers may vary for different laboratories. The following section describes the specific container types.

<u>VOCs & PVOCs</u>
Soil samples collected for the VOC and PVOC analyses will be preserved with methanol, which must be noted on the Chain-of-Custody. The soil samples must be preserved with methanol using one of the following techniques:

Standard Soil Sample Collection - Immediate Methanol Preservation.
After field screening, collect soil into tarred VOC vials and preserve immediately with methanol. Store samples on ice or at 4 ° C. Vials should be shipped in an upright position. Vials should also be placed in separate "zip lock" bags to limit the potential for cross contamination. Field personnel should be aware that laboratories use a variety of vial tare methods, so it is important to use only vials supplied by the specific laboratory.

PAHs
For the PAH analysis, a minimum 100 grams of soil will be packed into a non-preserved, labeled 4-oz glass container, and sealed with a Teflon-lined lid. Following collection, the sample will be placed on ice in a cooler.

RCRA Metals
For RCRA metals analysis, a minimum 20 grams of soil will be packed into a non-preserved, labeled 100-ml plastic container and sealed with plastic lid. Following collection, sample will be placed on ice in a cooler.

PCBs
For PCB analysis, a minimum 100 grams of soil will be packed into a non-preserved, labeled 4-oz glass container, and sealed with a Teflon-lined lid. Following collection, the sample will be placed on ice in a cooler.

The sample containers designated for laboratory analyses will be labeled and identified by sample number, date and time of collection, sample depth interval, analyses to be performed, and the project number. The same information will be recorded on the COC.

Table 1. Sample Container, Preservation, and Holding Time Requirements for Select Soil Analyses.

Analysis	**Container**	**Preservation**	**Holding Time**
VOCs/PVOCs	1-2oz glass jar	Methanol & Cool to 4° C	14 days
PAHs	1-4 oz glass jar	Cool to 4° C	14 days
PCBs	1-4 oz glass jar	Cool to 4° C	14 days
Metals	1-100 ml plastic container	Cool to 4° C	6 months, except chromium hexavalent 24 hrs, mercury 28 days

Table 2. QA/QC Sample Requirements

QA/QC Sample Type	**Frequency of Sample Analysis**	**Details**
Methanol Trip Blank	1 blank per sampling event	To prepare the methanol trip blank sample, field personnel will transfer methanol from a premeasured vial to an empty, but tarred, vial. (This QA/QC sample is not required for samples preserved with methanol in the laboratory.)
Methanol Field Blank	1 blank per sampling event or day	To prepare a methanol field blank, open the sample container or vial to the atmosphere to expose the methanol to potential atmospheric background – contamination.

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Monitoring Well Installation and Development

Monitoring wells will be installed in a manner that permits the screened interval to intercept the water table through seasonal water table level fluctuations. Monitoring wells will be constructed of 0.01-inch slotted, 2-inch diameter (1-inch for the interior well), flush-threaded, Schedule 40 polyvinyl chloride (PVC) screen. The screen will be 10 feet in length for monitoring wells. The riser pipe will consist of Schedule 40, flush threaded PVC. A 4-inch long flush threaded, Schedule 40 PVC cap will be placed on the bottom of the monitoring well screens.

The annular space surrounding each well screen will be backfilled with clean, well-sorted silica sand as a filter between the formation material and the well screen. Monitoring wells will be constructed inside of the 4¼-inch inside diameter hollow-stem augers. Care will be taken to properly place a continuous filter pack between the well screen and the borehole wall. The filter packs will extend approximately 1 to 2 feet above the top of the well screens. The top of the filter pack will be measured with a weighted measuring tape for depth confirmation.

A bentonite seal, 2 to 3 feet thick, will be placed in the annular space above the filter pack. The seal will be composed of commercially-manufactured bentonite chips. The bentonite will be slowly poured through the hollow-stem augers to minimize the potential for bridging. The finished bentonite surface will be measured with a weighted measuring tape for depth confirmation. The well screen will be positioned so as to intercept the chemicals of concern or assess the hydrogeologic properties of the saturated zone.

Granular bentonite will be placed above the bentonite seal to the ground surface. The bentonite will be slowly poured through the hollow-stem augers to minimize the potential for bridging. The bentonite will be backfilled until it is observed near the ground surface. The annular seal will be added in lifts; alternating between bentonite placement through the hollow-stem augers and auger removal.

During well construction, a cap will be installed at the top of the riser to prevent material from entering the well. A flush-mount (road box) type, protective casings will be used in high traffic areas. A lock on the compression cap will be installed on monitoring wells, completed with a road box; the protective casing cover will be bolted in place.

Monitoring Well Development

The Monitoring wells will be developed following well installation.

The objectives of the well development are to:

- assure that groundwater enters the well screen freely, thus yielding a representative groundwater sample and water level measurement;

- remove fine-grained sediment in the filter pack and the nearby formation adjacent to the filter pack to minimize groundwater sample turbidity and silting of the well; and,

- maximize the efficiency of the filter pack for aquifer hydraulic testing.

Well development will consist of alternating periods of surging with a disposable bailer and purging using a 2-inch diameter centrifugal pump, an air lift pump, or equivalent. The pumping rate will be set to correspond with the aquifer yield. Well development activities will continue until the groundwater effluent turbidity is reduced to clear conditions or until the suspended sediments have stabilized. For wells exhibiting low recharge (i.e. clay) development will consist of pumping until the well until it no longer yields water.

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Groundwater Level Measurements

Static water level measurements will be made using a Solinst Model 102 groundwater level indicator (or equivalent) prior to groundwater monitoring well development, purging, down-hole groundwater quality measurements and groundwater sample collection.

- Do not place groundwater level indicator in monitoring wells known or suspected to contain free-product.
- The groundwater level indicator will be decontaminated before and after each measurement location with a solution of water/Alconox solution and 2 water rinses.
- Monitoring wells will be opened and allowed to equilibrate for a minimum of 10 minutes prior to measurements.
- The depth to groundwater within each well will be recorded at the time the measurement is completed.
- The measurement shall be made referenced to a mark in the PVC top of casing, which is also indicated by a mark made on the northern most edge of the top of the casing.
- Groundwater measurements will be recorded to the nearest 0.01–foot.
- The data will be recorded on the Giles *Summary Sheet for Groundwater Sampling*. The completed form will contain the following information: monitoring well number; time and date of the measurement; depth to groundwater; type of measuring device used; initials of individuals collecting the data; project number; location of the site; weather conditions; and any additional observations noted (i.e. well protector top condition).

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Groundwater Sample Collection and Analyses

Groundwater samples will be submitted to a laboratory for analyses as required. These analyses may often include, but are not limited to volatile and semi volatile organic analyses (VOCs/PVOCs, and PAHs), and inorganic analyses (RCRA metals).

Groundwater samples may also be analyzed for natural attenuation parameters (ferrous iron, nitrate-nitrite, sulfate, alkalinity, and methane) during periodic groundwater monitoring, if conducted at the site. The ferrous iron will be tested in the field using a field kit, while sulfate, nitrate-nitrite, and methane will be analyzed in the laboratory. Standard field measurements including temperature, conductivity, pH, dissolved oxygen, and redox potential will also be collected during each sampling event using the water quality probe and will conform to the *Groundwater Quality Measurements SOP*.

Groundwater samples can be collected from a temporary well, established in the Geoprobe borehole, or from a permanent groundwater monitoring well/piezometer.

- Collection of Groundwater Samples from Temporary Wells

  Groundwater samples obtained from temporary wells will be collected by placing slotted ¾-inch inside diameter (I.D.) PVC pipe and solid PVC riser within the borehole. If possible, the temporary well will be purged and the volume of water evacuated during purging will be recorded. One-quarter inch I.D. plastic/silicone tubing with a Geo-pump© or a ½-inch disposable "pencil bailer" will be used to collect the groundwater sample.

- Collection of Groundwater Samples from Permanent Wells/Piezometers

  Groundwater samples from permanent groundwater monitoring wells/piezometers will be collected in accordance with the WDNR, Bureau of Drinking Water and Groundwater, Groundwater Sampling Field Manual, dated September 1996 (PUBL-DG-03896). A copy of Section 2.0 of the manual entitled "Sampling Procedures for Monitoring Wells" is attached with this SOP. A brief description of purging and sampling procedures is presented below.

  The permanent groundwater monitoring wells/piezometers must be purged prior to sampling. There are several methods that can be utilized for the purging of wells that do not purge dry and those that purge dry:

  <u>Wells that do NOT Purge Dry</u>

  - Low-flow purging <1 l/min, low-flow sampling <300 ml/min and monitor indicator parameters for stability in a closed flow-through cell. The procedure for low-flow purging and sampling using the closed flow-through cell is described in the above-referenced WDNR manual.

- Purging FOUR well volumes with a standard pump or a bailer. Please use Giles *Summary Sheet for Groundwater Sampling* form to calculate the well volume (in gallons) based on the well size and the height of water column in the well.

Wells that Purge Dry

- Low-flow Purging and Sampling – purge well dry. Collect groundwater samples within 24 hrs of purging.

- Purging and Sampling with a Bailer – purge well dry. Collect groundwater samples within 24 hrs of purging.

Depending on the type of analyses requested, groundwater will be collected into containers in the following order from an inline sample port located immediately before the low flow cell:

1. Unfiltered samples for in-field water quality measurements. (This is not necessary, if a down-hole or closed flow-through cell measurements are taken.)
2. VOCs.
3. Non-filtered, non-preserved (e.g., sulfate, total chromium VI, mercury, semi- and non-volatiles, pesticides.
4. Non-filtered, preserved (e.g., nitrogen series, total metals, and total organic carbon).
5. Filtered, non-preserved (e.g., dissolved chromium VI, and nitrate).
6. Filtered, preserved immediately (e.g., dissolved metals).
7. Other parameters.

The date and time of sample collection among other pertinent information (i.e., project number, sample identification number, and analysis requested) will be recorded on the sample container and on the sampling log. The groundwater sample collection, storage, and transportation will be performed in general accordance with ASTM and WDNR specifications and will follow standard COC requirements. The specific requirements for sample container type, preservative, and holding times are discussed in the following section of this SOP and summarized in Table 1, attached. Please note that the type of containers may vary for different laboratories. The following section describes the specific container types that are currently provided by Synergy of Appleton, Wisconsin.

VOCs/PVOCs

Groundwater collected for VOCs/PVOCs will be placed in three laboratory-supplied, 40-ml glass vials with Teflon® lined lids preserved with hydrochloric acid. Tip the container at a slight angle and allow a slow, steady stream of water to run down its inner wall. Fill the sample container until the water forms a positive meniscus at the vial rim, then immediately replace the cap. Invert the sample container and tap it lightly to check for bubbles. If bubbles are present, fill a new sample container. Trip and field water blank samples will also be analyzed for VOCs to serve as QA checks (see Table 2, attached).

RCRA Metals

Groundwater collected for RCRA metals will be field-filtered and placed in laboratory-supplied, 500-ml plastic bottles, preserved with nitric acid and sealed.

PCBs
Groundwater collected for PCBs will be placed in a laboratory-supplied, unpreserved 1,000-ml amber glass bottle sealed with Teflon® lined lids.

Ferrous Iron
Ferrous iron will be measured in the field using a Hach kit.

Nitrate
Groundwater samples collected for nitrate will be placed in a laboratory-supplied, 250-ml plastic high-density polyethylene (HDPE) container.

Sulfate
Groundwater collected for sulfate will be placed in a laboratory-supplied, unpreserved 500-ml plastic HDPE container.

Methane
Groundwater collected for methane will be placed in two laboratory-supplied, 40-ml glass vials with Teflon® lined lids preserved with hydrochloric acid.

The groundwater samples collected for laboratory analysis will be placed on ice in a cooler immediately following collection. Samples accompanied by COC will be picked up from the Giles office by the laboratory courier the next day. Overnight storage must be at a minimum temperature of 4°C (i.e., on ice or in a refrigerator).

Groundwater generated as a part of permanent monitoring well/piezometer purging will be contained in labeled drums and temporarily staged pending receipt of groundwater analytical results. If based on the analytical results, the drummed water contains detectable concentrations of contaminants; the drummed groundwater will be disposed of in the sanitary sewer system (if approved) or off site by a licensed waste hauler. If groundwater does not contain any detectable contaminants, it will be dispersed on site (thin spread on pavement). Due to small quantity, the groundwater evacuated from temporary wells set in Geoprobe boreholes will be dispersed on site.

Table 1. Sample Container, Preservation, and Holding Time Requirements for Select Groundwater Sample Analyses.

Analysis	Container	Preservation	Holding Time
Metals, Dissolved and Field-Filtered	1-500 ml HDPE jar	HNO3 to pH<2, cool to 4° C	6 months, chromium hexavalent 24 hrs, mercury 28 days
VOCs	3-40 ml, glass vials	HCL, cool to 4° C	14 days
PAHs	1-1,000 ml amber glass bottles	Cool to 4° C	7 days
Nitrate	1-250 ml HDPE jar	Cool to 4° C	48 hrs
Sulfate	1-500 ml HDPE jar	Cool to 4° C	28 days
Methane	2-40ml, glass vials	HCL, cool to 4° C	14 days

Table 2. QA/QC Sample Requirements

QA/QC Sample Type	Frequency of Sample Analysis	Details
Duplicates	1 duplicate per 20 samples	Duplicate sample is a groundwater sample that will be collected by the same methods and at the same time as original sample.
Trip Blanks	1 trip blank per cooler containing samples for VOC analysis	Trip blank is a laboratory-prepared blank containing DI water. The trip blank will be submitted for VOC analysis to assess potential contamination during sample container shipment and storage.
Field Blanks	1 field blank per day collected for VOC analysis or other analysis dependant of background conditions	Field blank is a background atmospheric blank sample. The field blank consists of laboratory reagent grade (contaminant-free) water that is exposed to the atmosphere where the water sampling is taken place. The field blank will be submitted for VOC analysis to assess the potential for background contamination during sampling. Additional analyses may be requested depending on Site conditions.
Equipment Blanks	1 equipment blank per day collected for VOC analysis	Equipment blank is a rinsate blank, decontamination blank, or equipment blank sample. The equipment blank consists of laboratory reagent grade (contaminant-free) water that is ran through the sampling device (e.g., bailer or pump) that has been decontaminated in the field. The field blank will be submitted for VOC analysis to assess adequacy of field decontamination procedures and potential for cross-contamination during sampling.

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Decontamination

The objective of decontamination is to limit false positives and potential cross-contamination by the removal of contaminants from environmental investigation/remedial equipment and personal protective equipment (PPE), or directly from the field technician's body. Decontamination will serve two purposes for the Giles field technician prior to sampling; equipment decontamination, and personnel decontamination. For high profile projects, a regulatory agency may require that an equipment rinsate blank be submitted to verify that decontamination procedures adequately remove contaminants from sampling equipment. Personnel decontamination procedures are used in order to protect Giles field personnel from accidental absorption, ingestion, and inhalation of residual contaminants, to which the field technician may have become exposed and to prevent false positives through cross-contamination.

Giles environmental field activities will be performed wearing Level-D PPD. Level D PPE includes a minimum standard of steel-toed shoes or boots, full length pants, and nitrile/latex gloves. Level D PPE may also include wearing a hard hat, long-sleeve shirt, hearing, and eye protection. Disposable coveralls will be made available to field personnel if warranted, or if required by the site-specific Health and Safety Plan. When site activities include the handling or exposure to potentially contaminated soil/groundwater, decontamination proceedings such as hand washing (soap and warm water), should take place prior to taking breaks where food or drink may be consumed. Soil/sludge should be removed from boots prior to leaving site. Disposable PPE should be removed and containerized onsite. Onsite personnel decontamination stations should be made available whenever possible. Equipment decontamination stations should not be used for personal decontamination.

Equipment (ie; water level indicators, down-hole measuring devices) will be decontaminated between sampling points (ie; monitoring wells). Multiple equipment uses while at a same monitoring point do not require decontamination. Decontamination should be conducted with a stationary set of wash buckets positioned outside the work area. Equipment decontamination should include a minimum of three separate 5-gallon bucket wash/rinse cycles. The first bucket should contain a De-ionized (DI) water/Alconox detergent solution (or equivalent), in which scrub brushes will be used to clean residual debris from the instrument. The following two buckets are rinses. If equipment appears unclean, repeat the procedure, and replace decontamination water with clean water. Cleaned equipment shall be placed on clean plastic sheeting for immediate use. If use is prolonged the equipment should be dried, and stored in the equipment case. Water used for decontamination should be replaced with clean water at minimum, on a daily basis. Depending upon the severity of contamination to which the equipment is being exposed, several water changes may be required daily.

To further reduce cross-contamination, and by using prior site data, measurements with field equipment should always progress from the least contaminated monitoring point to the most contaminated. The sampling order should be established prior to the site visit. Cross-contamination can also be prevented using disposable sampling equipment,

which does not require decontamination. Disposable sampling equipment is intended for retrieval of one sample and cannot be reused to collect from a second sampling point.

Personnel Decontamination

Field personnel will adhere to the following procedure with respect to personal decontamination:

- Perform decontamination when leaving the contaminated area, during breaks, and at the end of the field day.
- If available, wash boots, gloves, and outer PPE in Alconox solution, then rinse with water. If disposable latex booties or Tyvex coverall suits are worn, rinse with water, remove, and discard.
- Wear the required minimum PPE.
- Wash hands/face before handling food or drink.
- Do not eat or drink while in the work zone or while wearing contaminated PPE.
- Do not use equipment decontamination stations for personal decontamination.
- At the end of the work day, shower entire body.

Equipment Decontamination

The field technician will adhere to the following procedure with respect to soil sampling equipment (split-spoons, spatulas, etc.) decontamination:

- Scrape soil from sample device.
- Decontamination of the sampling equipment occurs between each sampling and at the end of every working day.
- Wash sample barrel in water/Alconox solution or equivalent, then rinse with tap water, and final rinse with DI water.
- Place on plastic sheeting and allow to air dry or wipe with clean paper towel.
- Depending upon the severity of the contamination for which the equipment is exposed, disposal of decontamination solution will be site-specific, and may involve disposal/thinspreading onsite, or containerization in 55-gallon drums for future disposal.

Monitoring Equipment Decontamination

The field technician will adhere to the following procedure with respect to the decontamination of monitoring equipment:

- Always progress the sample point order from least contaminated to most contaminated location.
- Decontamination of the monitoring equipment occurs between each sampling location, and at the end of every working day.
- In between each measurement location, wash equipment in water/Alconox solution or equivalent, then rinse with tap water, and final rinse with DI water.
- Place on plastic sheeting and allow to air dry or wipe with clean paper towel.

- Depending upon the severity of the contamination for which the monitoring equipment is exposed, disposal of spent decontamination solutions will be site-specific, and may involve disposal onsite, or containerization in 55-gallon drums for future disposal.

Drill/Geoprobe Rig and Drill/Geoprobe Equipment Decontamination

The drill rig and drilling equipment such as augers and drill rods will be decontaminated between boring locations by washing surfaces that have been in contact with soil and groundwater using a pressurized steam cleaner. If available and appropriate, a decontamination location should be selected where a bermed decontamination pad can be constructed to collect decontamination water. Depending upon the severity of the contamination for which the drill rig/geoprobe equipment is exposed, disposal of spent decontamination solutions will be site-specific, and may involve disposal onsite, or containerization in 55-gallon drums for future disposal.

Giles Engineering Associates, Inc.

Standard Operating Procedure
for
Chain-of-Custody

Custody procedures will be used to record and document the custodial possession of samples during the project. The sample media requiring custody procedures includes soil, groundwater, air, and vapor samples that are submitted to a laboratory for chemical analyses. The samples are considered in custody, if they are:

- In person's possession;
- In view of the person after being in their possession;
- Sealed in a manner that they cannot be tampered with after having been in physical possession;
- In a secure area restricted to authorized personnel.

A Giles Chain-of-Custody (COC) form (or a laboratory-provided form) will be used to ensure that the proper custody procedures have been followed for the samples collected and submitted to the laboratory.

Upon collection, samples will be cataloged on the Giles COC form using the sample identification designation and/or number. In addition, the date and time of collection, the number of containers for each type of sample, the type of sample preservation, and the type of analyses requested will be recorded on the COC form. A separate COC will accompany each cooler or shipping container containing samples at all times.

The COC form will be sealed in a plastic bag and placed inside the sample container for transportation to the laboratory. Upon relinquishing the sample container to the laboratory (or the laboratory courier), Giles field personal will transfer custody of the samples to laboratory personnel by signing and dating the bottom of the COC form. Giles field personnel will retain one copy (pink) of the COC form. The original COC will be sent to the laboratory with the samples.

The completed original copy of the COC will be included with the final laboratory report.

Giles Engineering Associates, Inc.

Standard Operating Procedures
For
Field Note Documentation

Giles site visits under this QAPP require the completion of the documentation of the site visit in a dedicated project field book. The dedicated field book will be kept in the project file at the respective Giles office. The field book/notes will supplement field forms. **Note: Field notes are not intended to substitute for the completion of all Giles field forms**. Field notes are used to document the following;

- Chronological account of the field day,
- Objectives for the day,
- Phone discussions,
- Changes in scope or methodologies,
- Site conditions,
- Weather conditions,
- Subcontractor and subcontractor personnel,
- Times onsite and times offsite for applicable personnel,
- Site visits and discussions with client personnel or regulatory personnel,
- Photographs taken,
- Equipment calibration results (if in-field re-calibration is necessary),
- Health and safety meeting proceedings or incidents, if any,
- Other pertinent information such as tons removed, trucks leaving site, gallons pumped, feet drilled, bailers used, samples collected, drums left onsite, etc.
- Cross-reference the field forms completed for that event. Examples of field forms to be completed will include the following;
    - *Record of Subsurface Exploration,*
    - *Photoionization Detector Calibration Documentation,*
    - *Summary sheet for groundwater sampling,*
    - *Natural attenuation parameters*.

    Other forms such as *Giles Equipment Billing (Unit Rates), Expense* forms, in-house drilling forms, and WDNR forms, (i.e.; Monitoring Well Construction, Development, Well/Drillhole/Borehole Abandonment, and Groundwater Monitoring Well Information) will be finalized at the office, immediately following field activities.

On a per day and per site basis, field notes will always be started on the left hand page of the field note book. The title block of each daily site entry will start with the following;

Date;
Project Name:
Project Number:
Objective for the day:
Miles driven to site, and vehicle used:
Giles personnel:
Subcontractor name, personnel, and arrival time:
Current weather conditions (and if they drastically change during the day):

Arrival time onsite:

Following the title block data, the field note entries then document the site activities on a chronological basis, beginning each entry with the time of the day. Field notes will adhere to the following guidelines.

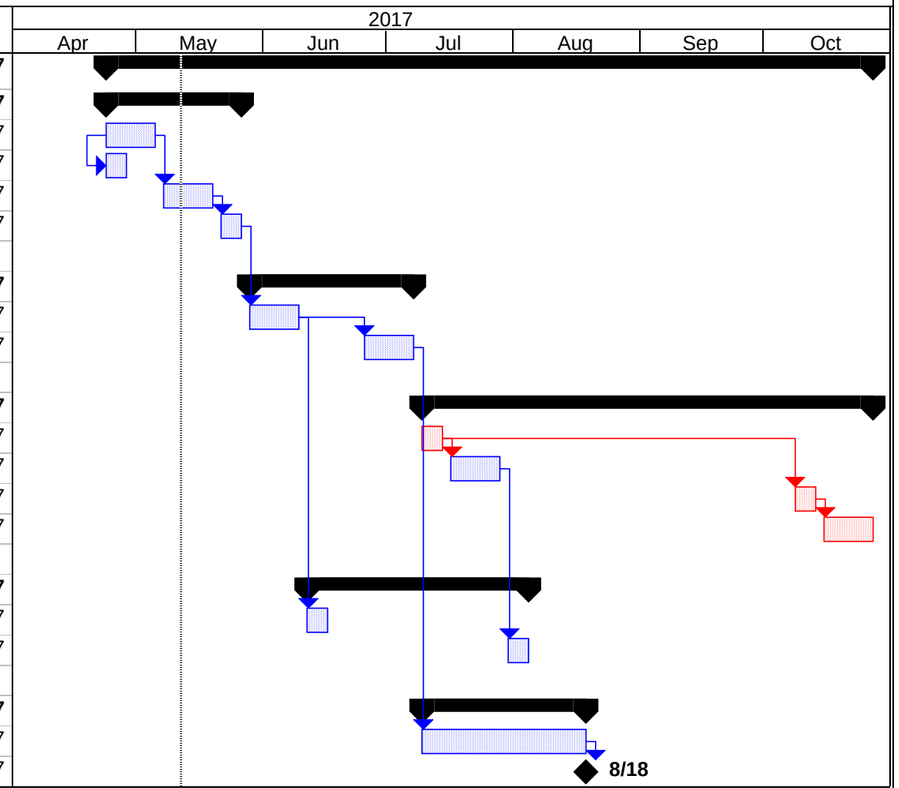
- Notes will be legibly printed or typed into a lap top computer.
- If pages are skipped to start on the left-hand page, a strike through of the skipped page will be made with one line diagonally across the page, and the strike through will be initialized and dated by the person making the strike through.
- All pages will be numbered in the upper right hand corner of each page and will be labeled 1/6 or 1 of 6, indicating page 1 of 6 pages per one day.
- No lines will be skipped.
- The documentation will be in pen, and must be made immediately after activity, measurement, or event.
- An error in documentation will be striked through with a single line and initialized.
- The pages will be initialized and dated at the bottom of each page by the person taking notes.
- The field notes will be finalized before leaving the site on a daily basis.
- Figures are drawn on the right-hand page and adhere to the following guidelines.
    1. The plan view North arrow and scale (if applicable) must be put in upper right hand corner of page.
    2. Dimensions should be shown on the figure.
    3. Monitoring well/soil boring locations must be put on figure with a minimum of 2 dimensions (X,Y coordinates) to permanent points (i.e.; building corners),
    4. The figures must show at minimum; approximate property lines, buildings (dimensioned), monitoring well/soil boring locations, pavement/grass areas, tree lines, known utility/UST locations, overhead obstructions (i.e.; power lines), manhole locations, and surface water impoundment areas.
    5. Offsite adjacent properties integral to the site activities, such as adjacent surface waters, may be required on site figure.

APPENDIX B

SI Project Schedule

SITE INVESTIGATION - PROPOSED PROJECT SCHEDULE
THE COUTURE DEVELOPMENT
909 EAST MICHIGAN STREET
MILWAUKEE, WI

ID	Task Name	Duration	Start	Finish
1	**The Couture**	**135 days**	**Mon 4/24/17**	**Fri 10/27/17**
2	**PRE-FIELD ACTIVITIES**	**25 days**	**Mon 4/24/17**	**Fri 5/26/17**
3	SIWP Preparation	2 wks	Mon 4/24/17	Fri 5/5/17
4	Site Health & Safety Plan Preparation	1 wk	Mon 4/24/17	Fri 4/28/17
5	WDNR SIWP Review & Approval	2 wks	Mon 5/8/17	Fri 5/19/17
6	Coordinate Utility Location	1 wk	Mon 5/22/17	Fri 5/26/17
7				
8	**DIRECT-PUSH MW INSTALLATION & DEVELOPMENT**	**30 days**	**Mon 5/29/17**	**Fri 7/7/17**
9	Fieldwork (Soil sampling and MW installation)	2 wks	Mon 5/29/17	Fri 6/9/17
10	Soil Laboratory Analysis	2 wks	Mon 6/26/17	Fri 7/7/17
11				
12	**GROUNDWATER SAMPLING (IF REQUIRED)**	**80 days**	**Mon 7/10/17**	**Fri 10/27/17**
13	Event 1 Fieldwork	1 wk	Mon 7/10/17	Fri 7/14/17
14	Event 1 Groundwater Laboratory Analyses	2 wks	Mon 7/17/17	Fri 7/28/17
15	Event 2 Fieldwork	1 wk	Mon 10/9/17	Fri 10/13/17
16	Event 2 Groundwater Laboratory Analyses	2 wks	Mon 10/16/17	Fri 10/27/17
17				
18	**INVESTIGATION DERIVED WASTE DISPOSAL**	**40 days**	**Mon 6/12/17**	**Fri 8/4/17**
19	Drummed Soil Cuttings Disposal	1 wk	Mon 6/12/17	Fri 6/16/17
20	Development/Purge Water Disposal	1 wk	Mon 7/31/17	Fri 8/4/17
21				
22	**SITE INVESTIGATION REPORT PREPARATION**	**30 days**	**Mon 7/10/17**	**Fri 8/18/17**
23	Data Reduction & Report Preparation	6 wks	Mon 7/10/17	Fri 8/18/17
24	Report Submittal	0 days	Fri 8/18/17	Fri 8/18/17



Project: PROJ SCH
1E-1704002

Task	Summary	Rolled Up Progress	Group By Summary		
Critical Task	Rolled Up Task	Split	Deadline		
Progress	Rolled Up Critical Task	External Tasks			
Milestone	Rolled Up Milestone	Project Summary			

Geotechnical, Environmental & Construction Materials Consultants

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