REMEDIAL INVESTIGATION REPORT

for

Former Design for Leisure
NYSDEC BCP Site No. C360163

41 Kensico Drive
Mount Kisco, New York

Prepared for:

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LANGAN

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AWQS	Ambient Water Quality Standards and Guidance Values
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	Below Grade Surface
CAMP	Community Air Monitoring Program
CU	Restricted Use – Commercial
CVOC	Chlorinated Volatile Organic Compound
DER	Division of Environmental Remediation
DNAPL	Dense Non-Aqueous Phase Liquid
DOT	Department of Transportation
DUSR	Data Usability Summary Report
el	Elevation
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
ESI	Environmental Site Investigation
eV	Electron Volt
FEMA	Federal Emergency Management Agency
FWRIA	Fish and Wildlife Resources Impact Analysis
GPR	Ground Penetrating Radar
HASP	Health and Safety Plan
IDW	Investigation-Derived Waste
L/min	Liters per Minute
$\mu g/m^3$	Micrograms per Cubic Meter
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MTBE	Methyl tert butyl ether
NAVD88	North American Vertical Datum of 1988
NTU	Nephelometric Turbidity Units
NYCRR	New York City Rules and Regulations
NYSDOH	New York State Department of Health
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
PFAS	Polyfluoroalkyl Substances
PID	Photoionization Detector

Acronym	Definition
PPE	Personal Protective Equipment
ppm	Parts per million
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SCO	Soil Cleanup Objective
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOGS	Technical and Operational Guidance Series
UN/DOT	United Nations/Department of Transportation
USEPA	United Stated Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
UU	Unrestricted Use
VOC	Volatile Organic Compound

CERTIFICATION

I, Michael Burke, certify that I am currently a Qualified Environmental Professional as defined in 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 and that this Remedial Investigation Report was prepared in accordance with applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).

Michael D. Burke, PG, CHMM

1.0 INTRODUCTION

This Remedial Investigation Report (RIR) was prepared on behalf of NY Luxury Motors of Mt. Kisco, Inc. (the Volunteer) for the property at 41 Kensico Drive in Mount Kisco, New York (the site). The Volunteer was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to remediate the site in accordance with the June 20, 2018, BCP acceptance letter. A Brownfield Cleanup Agreement was executed on November 13. 2018.

This RIR presents environmental data and findings from the Remedial Investigation (RI) conducted between August 7 and September 7, 2018 and a Supplemental RI (SRI) conducted between May 2 and May 9, 2019. This RIR also incorporates previous environmental data obtained during a Phase II Environmental Site Investigation (ESI) completed by URS Corporation (URS) in October and November 2016, a Limited Site Assessment completed by AECOM in May 2017, and a geotechnical report completed by Carlin Simpson & Associates (Carlin Simpson) in May 2018. The RI was conducted in accordance with Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 375-3.8, NYSDEC DER-10, and applicable New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006. The objectives and goals of this RIR are to:

- Define the nature and extent of contamination in all media at or emanating from the site
- Generate sufficient data to evaluate remedial action alternatives
- Generate sufficient data to evaluate the actual and potential threats to human health and the environment

The remainder of this report is organized as follows:

- Section 2.0 describes the site setting and physical characteristics
- Section 3.0 describes the site background including results of previous investigations and identified areas of concern (AOC)
- Section 4.0 presents the investigation field procedures
- Section 5.0 describes the field observations and analytical results
- Section 6.0 presents an assessment of the exposure risks of site contaminants to human, fish, and wildlife receptors
- Section 7.0 presents the nature and extent of contamination in all site media as determined through the field investigation and analysis of environmental samples
- Section 8.0 summarizes the results of the investigation and presents conclusions based on field observations and analytical results

2.0 SITE BACKGROUND

2.1 Site Description

The site, owned by NY Luxury Motors of Mt. Kisco, Inc., is a 1.73-acre lot with a 13,000-square-foot vacant commercial building with a slab-on-grade foundation, an asphalt-paved parking lot, landscaped areas around the building and parking lot and a wooded area along Branch Brook, a surface water body. The site is located in the Village/Town of Mount Kisco, New York and is identified as Westchester County Tax Map No. 17258 Section 69.50, Block 1, Lot 2 (69.50-1-2). The site is located in a commercial office park and is bound by a 2-story commercial office building with multiple tenants (45 Kensico Drive) to the north; Branch Brook and a raised, railway embankment with stone ballast utilized by Metro-North Railroad to the east; a propane supplier (Suburban Propane, 25 Kensico Drive) to the south; and, a hotel (Holiday Inn, 1 Holiday Inn Drive) and a car dealership (Lexus of Mt. Kisco, 265-281 Kisco Avenue) to the west. Site topography slopes to the east towards a wooded area along Branch Brook. A raised, railway embankment with stone ballast is located on the opposite side of Branch Brook and roughly parallels the course of the brook and the site's eastern property boundary. The railway embankment includes northbound and southbound tracks and is utilized by the Metro North Railroad. A site location map and site plan illustrating current conditions are included as Figures 1 and 2A, respectively.

The proposed development includes construction of a parking lot and vehicle storage area with impervious pavement for the Land Rover Mt. Kisco dealership located to the west of the site at 299 Kisco Avenue, Mount Kisco, NY. The development will include demolition of the existing building and installation of paved surfaces across most of the site footprint. A 10-foot minimum landscaped buffer will be constructed along the entire perimeter of the site. The proposed development plan is illustrated in Figure 2B.

<u>2.1.1 Surrounding Property Land Use</u>

The site is in a suburban area characterized by residential, commercial and industrial buildings. Surrounding property usage is summarized in the following table:

Direction	**Adjoining Properties**				**Surrounding Properties**
	Section	**Block No.**	**Lot No.**	**Description**	
North	69.50	1	1	Westchester EMS Ambulance Service (45 Kensico Drive)	Commercial buildings, parking lots, warehouses, shopping center, automobile dealerships
		1	1	Commercial Buildings (43 Kensico Drive)	
East	Part of 69.58	1	1	Railway embankment / Metro-North Railroad	

Direction	Adjoining Properties				Surrounding Properties
	Section	Block No.	Lot No.	Description	
	n/a	n/a	n/a	Branch Brook	
South	69.50	1	3	Suburban Propane (25 Kensico Drive)	
West	69.42	1	1	Holiday Inn (1 Holiday Inn Drive)	
	69.49	3	1	Lexus dealership (265-281 Kisco Avenue)	

Land use within a half mile of the site is suburban and characterized by mixed-use buildings, retail, preservation and conservation areas with associated infrastructure, including underground utility lines, storm drains, and sewers. A railroad corridor utilized by the MetroNorth Railroad adjoins the site to the east. A map of surrounding land use is included as Figure 3.

The nearest ecological receptor is the Branch Brook, which adjoins the site to the east and is a tributary to the Kisco River, which feeds the New Croton Reservoir, a part of New York City's drinking water supply system. There are no sensitive human receptors (e.g., schools and/or daycare centers) within a half mile of the site.

2.1.2 Topography

According to a November 20, 2017, survey by JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC, the site grade ranges from about elevation (el) 292 feet in the southwest to el 286 feet in the east. Elevations presented in the survey are measured in feet and referenced to the North American Vertical Datum of 1988 (NAVD88). The surrounding local topography also generally slopes east toward Branch Brook with properties southwest of the site generally at a higher elevation than the site.

2.1.3 Surface Water and Drainage

The property is partially covered with vegetation subject to rainwater infiltration during precipitation events and partially covered with impervious surfaces, including a vacant slab-on-grade building and an asphalt-paved parking lot. Stormwater on the building roof is collected and directed by roof leaders and underground piping to a storm sewer in Kensico Drive and a storm sewer that runs west to east across the site just south of the northern property boundary. This storm sewer empties in Branch Brook at an outfall near the northeastern corner of the site. Stormwater from the parking lot flows overland from the southwest to the northeast where a curb cut directs stormwater to a graded, runoff channel that directs flow in the direction of Branch Brook. A site visit completed on June 21, 2019 found evidence of soil erosion in the runoff channel and deposits of eroded soil along the stormwater flow path in the direction of Branch Brook. This condition was not observed during the RI and SRI and appears to be a new condition, a result of heavy precipitation events the week of June 17-21, 2019. Stormwater runoff from the surrounding area also drains via overland flow to the east-northeast and through catch basins into the village/town sewer system.

According to the Westchester County Department of Information Technology Geographic Information Systems May 2014 "Mount Kisco FEMA Flood Zones," the site is within the 100- and 500-year floodplains.

2.1.4 Wetlands

According to a review of the November 6, 2017, Wetland Delineation Report, prepared by Ecological Solutions LLC, no NYSDEC-regulated wetlands exist on the site or adjoining properties. A copy of the Wetland Delineation Report is included in Appendix A.

2.2 Geology and Hydrogeology

2.2.1 Regional Geology

Predominant geological surface features were not observed at the site. Soil and bedrock stratigraphy throughout Mount Kisco typically consists of a layer of historic fill overlying till, decomposed unconsolidated bedrock, and bedrock. The USGS "Surficial Geologic Map of New York Lower Hudson Sheet" indicates the surficial geology is comprised of outwash sand and gravel. This soil unit is characterized as coarse to fine gravel with sand of proglacial fluvial deposition, with well-rounded and stratified grains that are generally finer in texture away from the ice border with unit thickness varying between 2 to 20 meters. The USGS "Geologic Map of New York Lower Hudson Sheet" indicates the bedrock underlying the site is part of the Inwood Marble Formation. The Inwood Marble Formation is comprised of dolomite marble, calc-schist, granulite, and quartzite, overlain by calcite marble. Continental glaciation at the end of the Pleistocene and beginning of the Holocene epochs likely caused this distinctive stratigraphy identified beneath the fill layer. Melting of the Wisconsin glacier contributed glacial outwash deposits to the region. Bedrock was encountered during the RI at depths of about 24 to 71 feet below ground surface (bgs).

2.2.2 Regional Hydrogeology

Groundwater flow is typically topographically influenced because shallow groundwater tends to originate in areas of topographic highs and then flows toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, subsurface utilities, and coverage by impervious surfaces. Other factors influencing groundwater include depth to bedrock, the presence of artificial fill, and variability in local geology and groundwater sources or sinks. Infiltration of precipitation to the water table at the site is primarily within landscaped and unpaved areas. The asphalt-paved parking lot and building are impermeable cover systems. Regional groundwater is expected to flow towards Branch Brook, a tributary to the Kisco River that feeds New Croton Reservoir.

Groundwater elevation data recorded during the RI is summarized in Table 2. According to the 2017 Annual Drinking Water Quality Report for Mount Kisco, drinking water in the village/town of Mount Kisco is sourced from the Byram Lake Reservoir and supplemented by the Leonard Park Well Field since 2001.[1] The Byram Lake Reservoir is located about 3.5 miles southeast of the site and the Leonard Park Well Fields are located about 2 miles south of the site. Water is pumped from the Byram Lake Reservoir to the Byram Lake Filtration Plant before entering the distribution system.

[1] Source: Village/Town of Mount Kisco Department of Water website:
http://www.mountkiscony.gov/departments/water_and_sewer_department/drinking_water_quality_reports.php

3.0 SITE HISTORY

This section describes historical site use, the proposed redevelopment, and provides discussion on the findings from previous environmental investigations. Potential AOCs were developed based on a review of the previous reports and are summarized in Section 3.4.

3.1 Historical Site Usage

The existing building on the site was constructed as a commercial office building in 1976 and was used as a veterinary hospital (1976 to 1982), manufacturing facility for pool tables and bar stools (1982 to 1998), and offices for a commercial and movie production company (1998 to 2017).

The site and northern, southern, and western adjoining properties were undeveloped until about 1955, after which time they were developed into commercial properties. The railroad embankment to the east of the site was constructed circa 1892.

3.2 Summary of Previous Environmental Investigations

Previous environmental reports are summarized below and are included in Appendix A.

<table>
<tr><th>Document</th><th>Comments</th></tr>
<tr><td>Phase I Environmental Site Assessment, 41 Kensico Drive, Mount Kisco, New York prepared by URS Corporation, dated September 21, 2016</td><td>The site appears to have been undeveloped land from 1892 through 1975. The site is in its current configuration in the 1984 aerial photograph. The building was constructed in 1976 and was originally occupied by a veterinary hospital. Between 1982 and 1998, Design for Leisure, a manufacturer of pool tables and bar stools occupied the site, followed by Human Relations Media. The Phase I ESA identified one Recognized Environmental Condition (REC) associated with historical operation of two steel heating-oil underground storage tanks east of the building, which were upgraded in 1998 to one 1,000-gallon fiberglass heating-oil UST, and subsequently removed in 2008 as part of a conversion to natural gas. Following removal of the USTs in 1998, post-excavation end-point soil samples were collected that indicated no constituents of concern above applicable criteria and the NYSDEC granted a No Further Action (NFA) determination on August 26, 1998.</td></tr>
<tr><td>Phase II Environmental Site Assessment (ESA), 41 Kensico Drive, Mount Kisco, New York prepared by URS Corporation (URS), an AECOM Company, dated December 14, 2016</td><td>The Phase II included a limited assessment of soil quality from eleven borings in the vicinity of former USTs on November 14, 2016, collection of two sub-slab soil-vapor samples in the eastern area of the building, and installation of 10 temporary 1-inch-diameter PVC monitoring wells for groundwater sampling. The following is the summary of findings:
Soil consisted of a mix of sand and gravel fill to about 8 feet below grade surface (feet bgs), silty sand with some clay to about 10 feet bgs, and silt to about 15 feet bgs. No soil borings extended beyond 15 feet bgs.
URS collected two soil samples from depths of 1 to 2 feet bgs and 4 to 5 feet bgs in the vicinity of the former USTs, for laboratory analysis of Volatile Organic Compounds (VOC). Soil results indicated no concentrations of volatile organic halocarbons (VOH) above the New York State Department of Environmental Conservation (NYSDEC) Unrestricted Use Soil Cleanup Objectives (UU SCO).
Sub-slab soil-vapor results identified the chlorinated solvent trichloroethene (TCE) above the NYSDOH Air Guideline Value (AGV) (2 micrograms per cubic meter [$\mu g/m^3$]).
Two of the 10 temporary wells were installed on October 13, 2016 to 15 feet bgs, and the remaining eight temporary wells were installed on November 14, 2016 to 12 feet bgs.
Two groundwater samples collected on October 13, 2016, were analyzed for volatile organic compounds (VOC) by EPA Method 8260 and Polycyclic Aromatic Hydrocarbons (PAH) by EPA Method 8270. The eight groundwater samples collected on November 14, 2016, were analyzed for VOHs by EPA Method 8260. The sample results showed chlorinated solvent-related contaminants (primarily cis-1,2-dichloroethene [cis-1,2-DCE] and TCE) at concentrations exceeding Ambient Water Quality Standards (AWQS) in nine locations (maximum cis-1,2-DCE = 333 micrograms per liter [µg/L], maximum TCE = 683 µg/L). One sample near the southeastern perimeter did not have VOHs above the AWQS.</td></tr>
</table>

Document	Comments
Limited Site Assessment, Commercial Property, 41 Kensico Drive, Mount Kisco, Westchester County, New York prepared by AECOM, dated May 8, 2017	The Limited Site Assessment was conducted to further evaluate shallow groundwater conditions through the installation of permanent groundwater monitoring wells. The Limited Site Assessment was implemented in March 2017 and consisted of the installation of six, permanent shallow monitoring wells across the site. Additionally, one groundwater probe was completed within the former UST area to 50 feet bgs. Two groundwater probe grab samples were collected at 30 and 50 feet bgs in this boring. The following is a summary of findings: • Shallow groundwater generally flows from the west-southwest to the east-northeast. • Soil consisted of brown, fine to coarse sand, and fill with brick fragments and gravel to 5 feet bgs, followed by fine-grained sand to about 10 feet bgs, and gray silt to the end of the boring at 50 feet bgs. One-inch-thick interbedded lenses of clay were noted at 42 and 44 feet bgs. • Groundwater samples were analyzed for VOHs by EPA Method 8260. VOH concentrations in the deep groundwater probe and four monitoring wells exceeded the NYSDEC AWQS, with the highest concentration of TCE detected at 2,940 µg/L. The highest concentration of chlorinated solvent-related compounds (cis-1,2-DCE, 1,1-dichloroethane [1,1-DCA], and 1,1-dichloroethene [1,1-DCE]) were detected within the western part of the site. • VOC concentrations were generally higher than in previous sampling events. • Groundwater impacts extend deeper than 50 feet bgs and appear to be increasing with depth. AECOM concluded that shallow groundwater flows from west to east and that VOH groundwater impacts are migrating onto the site from an off-site source to the west-southwest.
Report on Subsurface Soil and Foundation Investigation, Proposed AutoNation Mt. Kisco, 41 Kensico Drive, Mt. Kisco, NY prepared by Carlin Simpson & Associates, dated May 3, 2018	The investigation was conducted to determine the nature and engineering properties of soil and groundwater conditions for the new construction. Existing fill was encountered from 5 to 10 feet bgs followed by native layers of sand, silt and clay lenses. Soft-/loose and/or organic soil was identified extending from the ground surface to 7 to 30 feet bgs. The report recommendations include the following: existing fill and soft, loose, and organic soil layers are not suitable for support of the proposed building foundations or floor slab; placement of 2 to 4 feet of new fill could cause settlement on the order of 2 to 5 inches in the next 2 to 3 years following construction with additional settlement observed over the next 20 years; new building shall be supported on a pile foundation system; and special subgrade preparation procedures will be required for the retaining wall, utility pipes, and utility structures.

3.3 Summary of Potential Areas of Concern (AOC)

Based on site observations, historical site uses, and the findings of the previous environmental reports, the AOCs investigated during this RI are described in detail below. An AOC map is included as Figure 4.

AOC 1: Former Tank Area

AOC 1 includes the former on-site tank area, which historically contained three heating oil USTs and petroleum-impacted soil. Two steel heating oil USTs were removed from the property in 1998 along with an unspecified volume of contaminated soil. Endpoint samples were collected, no constituents of concern were detected above applicable cleanup criteria, and the NYSDEC issued a No Further Action (NFA) determination in August 1998. The steel USTs were replaced with a 1,000-gallon fiberglass heating oil UST, which was removed in 2008 during a natural gas conversion.

AOC 2: Historic Fill

A layer of historic fill material from surface grade to about 8 feet bgs was identified during previous subsurface investigations. Historic fill material is typically sourced from an unknown origin and may potentially contain contaminants above applicable standards.

AOC 3: Chlorinated Volatile Organic Compounds (CVOC) in Groundwater

The chlorinated volatile organic compound (CVOC), TCE and its breakdown products including trans-1,2-dichloroethene (trans-1,2-DCE), cis-1,2-DCE, and vinyl chloride were detected in groundwater samples collected during previous subsurface investigations. In addition, 1,1,1-trichloroethane (1,1,1-TCA) and its breakdown products including 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), and chloroethane were detected in groundwater samples collected during previous subsurface investigations.

AOC 4: CVOCs in Soil Vapor

Previous studies reported the detection of TCE in two soil vapor samples at concentrations ranging from 20 $\mu g/m^3$ to 28 $\mu g/m^3$.

AOC 5: Floor Drains

Previous studies identified six floor drains in the existing building that are believed to discharge to the sanitary-sewer system. The floor drains may serve as conduits and preferential pathways for contaminant migration into the subsurface.

AOC 6: Chlorinated Solvents from Off-Site Sources

Previous studies indicated that the CVOCs identified in groundwater originated from an off-site source. One potential offsite source may be an upgradient historical Large Quantity Generator (Toyota North at 255 Kisco Avenue, Mount Kisco, NY) of spent halogenated solvents (F001 and F002) as identified in URS’s September 2016 Phase I ESA.

4.0 REMEDIAL INVESTIGATION

The RI was completed between August 7 and September 7, 2018 to investigate and characterize the nature and extent of contamination at the site. A SRI was completed in May 2019 at the request of the NYSDEC to evaluate data gaps identified by the agency and supplement the RI data set. A bulleted summary of the RI and SRI is provided below. A sampling summary and rationale (in relation to the AOCs) is provided in Tables 1A and 1B. Sample locations are presented on Figure 4.

The RI and SRI consisted of the following:

- Geophysical survey to identify potential USTs, underground structures, and subsurface utilities.
- Advancement of 30 soil borings to between 8 and 71 feet bgs and collection and laboratory analysis of 95 soil samples (including quality assurance/quality control [QA/QC] samples, including five field duplicate samples, nine equipment blank samples, one matrix spike [MS] sample, and one matrix spike duplicate [MSD] sample).
- Collection and laboratory analysis of 19 surface soil samples (including QA/QC samples, including one field duplicate sample, two equipment blank samples, one MS sample, and one MSD sample) at from 0 to 2-inch bgs and 10 to 12-inch bgs at seven locations throughout the site.
- Installation of 14 groundwater monitoring wells, including shallow and deep couplets, and collection and laboratory analysis of 29 groundwater samples (including QA/QC samples, including one field duplicate sample, two field blank samples, four trip blank samples, one MS sample, and one MSD sample) from new and existing monitoring wells at the site.
- Collection and laboratory analysis of three co-located off-site stream sediment and surface water samples from Branch Brook as well as QA/QC samples for surface water (one field duplicate sample, one field blank sample, one trip blank samples, one MS sample, and one MSD sample).
- Surveying and gauging of monitoring wells to evaluate groundwater elevation and flow direction.
- Installation of one temporary sub-slab vapor point and collection and laboratory analysis of one sub-slab vapor sample.

The RI and SRI were conducted in accordance with the Remedial Investigation Scope Letter, prepared by Langan and dated August 6, 2018; the Supplemental Remedial Investigation Work Plan (SRIWP) prepared by Langan, dated April 11, 2019: NYCRR Part 375-3.8; NYSDEC DER-10 Technical Guidance for site Investigation and Remediation (May 2010); the NYSDEC Draft

Brownfield Cleanup Program Guide (May 2004); and NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006) and subsequent updates (May 2017). Site work also complied with the safety guidelines outlined in the HASP.

4.1 Geophysical Survey

On August 2, 2018, NOVA Geophysical & Environmental, Inc. of Douglaston, New York completed a geophysical survey under the supervision of a Langan field geologist. NOVA used ground-penetrating radar (GPR) to identify potential USTs and locate subsurface utilities in the vicinity of each boring location. Borings were relocated as necessary to avoid subsurface utilities and anomalies. Findings of the geophysical survey are discussed in Section 5.1 below. A copy of the geophysical survey report presenting these findings is included in Appendix B.

4.2 Soil Investigation

4.2.1 Investigation Methodology

In August 2018, twenty soil borings (LB01, LB07 through LB17, and LB19 through LB26) were completed during the RI by AARCO Environmental Services (AARCO) of Lindenhurst, New York. In May 2019, ten soil borings (LB18, LB23, LB27, and LB28 and five delineation borings around LB23) were completed during the SRI by Eastern Environmental Solutions, Inc. (Eastern) of Manorville, New York. Two soil borings (LB18 and LB22) were advanced using a Geoprobe® 420M direct-push drilling rig; two soil borings (LB10 and LB20) were advanced using a Geoprobe® 8140LC rotary sonic drilling rig; eleven soil borings (LB12, LB15, LB19, LB23 (SRI), LB23_E1, LB23_N1, LB23_N2, LB23_S1, LB23_S2, LB27, and LB28) were advanced using a Geoprobe® 6610DT direct-push drilling rig; and the remaining borings (LB01, LB07 through LB09, LB11, LB13, LB14, LB16, LB17, LB21 and LB23 [RI] through LB26) were advanced using a Geoprobe® 7822DT direct-push drilling rig. The soil borings were advanced to between 8 and 71 feet bgs. A map showing the boring locations is included as Figure 4.

Discrete soil samples were collected from various depth intervals at each boring and were visually classified for soil type, grain size, texture, and moisture content. Samples were collected in 3-foot and 4-foot long Macro-Core® (open and closed point) and dual-tube sample barrels with dedicated acetate liners. Soil was screened for visual, olfactory, and instrumental evidence of a chemical or petroleum release. Instrument screening for the presence of VOCs was performed with a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. In addition, soil samples exhibiting the highest PID readings or where NAPL was suspected were subject to hydrophobic dye testing (using pre-packaged Sudan Red III dye test kits) during the RI to evaluate the presence of sorbed NAPL.

During the May 2019 SRI, Eastern used a hand auger to collect surface soil samples at seven locations (SS1 through SS7) throughout the site. Soil samples were screened for visual, olfactory, and instrumental evidence of a chemical or petroleum release.

Soil boring logs are included in Appendix C. Boring logs from previous studies are also included in Appendix C for reference.

4.2.2 Sampling Methodology

During the RI, soil samples (at least one sample per boring) were collected for laboratory analysis to investigate AOCs and to vertically delineate identified VOC impacts. The soil samples were collected from the historic fill layer, groundwater interface, intervals of observable impacts (i.e., staining, odor, maximum PID reading), and the sand-silt interface which was generally observed at approximately 10 to 23 feet bgs.

During the SRI, soil samples were collected from borings LB18, LB27, and LB28 to investigate a potential source of residual petroleum impacts near monitoring well LMW19S. Soil samples from boring LB23 (re-drilled) and the five step-out borings were collected to delineate the elevated concentrations of total lead found in this area during the RI. Soil samples were collected from the 0 to 2-inch bgs and 10 to 12-inch bgs intervals at each sampling locations SS1 through SS7 to evaluate cover soil quality.

Samples submitted for VOC analysis were collected directly from the acetate sleeve or hand auger pit via laboratory-supplied Terra Core® soil samplers. The remaining sample volume was homogenized and placed in appropriate laboratory-supplied containers for additional analyses. The sample containers were labeled, placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of 4°C). The sample coolers were picked up and delivered via courier under standard chain-of-custody protocol to York Analytical Laboratories, Inc. (York) in Stratford, Connecticut, a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory.

Shallow soil samples collected from all borings during the RI were analyzed for Part 375/Target Compound List (TCL) VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and Part 375/Target Analyte List (TAL) metals/inorganics. Deep soil samples collected during the RI were analyzed for VOCs and SVOCs only, per field discussions and verbal approval with the NYSDEC Project Manager on August 14, 2018. In addition, 12 soil samples from borings LB01 and LB12 from 18 to 54 feet bgs were collected during the RI and analyzed for total organic carbon (TOC), biochemical oxygen demand (BOD), and chemical oxygen demand (COD) to evaluate in-situ groundwater remediation alternatives.

Soil samples collected from borings LB18, LB27, and LB28 during the SRI were analyzed for Part 375/TCL VOCs, SVOCs, and the emerging contaminant, 1,4-dioxane. Soil samples from LB27 and LB28 were also analyzed for the NYSDEC's list of twenty-one per- and polyfluoroalkyl substances (PFAS), a class of emerging contaminants.

Surface soil samples collected from locations SS1 through SS7 and sediment samples collected from locations SED1 through SED3 were analyzed for Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals/inorganics, including hexavalent and trivalent chromium; soil and sediment samples from locations SS1, SS3, SS5, SS7, SED1, and SED3 were also analyzed for 1,4-dioxane.

Soil samples from boring LB23 (re-drilled) and the five delineation borings were analyzed for total lead and lead via the Toxicity Characteristic Leaching Procedure (TLCP); one sample from boring LB23 was also analyzed for PFAS.

4.3 Groundwater Investigation

Eleven soil borings advanced during the RI were converted to groundwater monitoring wells, including wells LMW01D, LMW08S, LMW08D, LMW11, LMW12S, LMW12D, LMW15, LMW19S, LMW19D, LMW20S, and LMW20D. Monitoring wells with an "S" or "D" suffix denote shallow and deep monitoring well screens, respectively. The newly installed monitoring wells and six of the existing monitoring wells (MW-1 through MW-6) were sampled to investigate potential impacts to groundwater associated with the AOCs. During the SRI, three additional groundwater monitoring wells (GWG01 through GWG03) were installed and sampled along the northern property boundary to assess potential off-site petroleum-related contaminant migration.

4.3.1 Monitoring Well Installation and Development Methodology

A summary of the groundwater monitoring well construction details is included in the following table:

Groundwater Monitoring Well Construction Summary														
WELL ID	**LMW01D**	**LMW08S**	**LMW08D**	**LMW11**	**LMW12S**	**LMW12D**	**LMW15**	**LMW19S**	**LMW19D**	**LMW20S**	**LMW20D**	**GWG01**	**GWG02**	**GWG03**
Drilling equipment used to install well	Geoprobe® 7822 DT	Geoprobe® 7822 DT	Geoprobe® 7822 DT	Geoprobe® 7822 DT	Geoprobe® 8140LC Sonic Drill rig	Geoprobe® 8140LC Sonic Drill rig	Geoprobe® 8140LC Sonic Drill rig	Geoprobe® 6610 DT	Geoprobe® 6610 DT	Geoprobe® 8140LC Sonic Drill rig	Geoprobe® 8140LC Sonic Drill rig	Geoprobe® 6610 DT	Geoprobe® 6610 DT	Geoprobe® 6610 DT
Well-screen diameter	2-inch PVC													
Well screen type	0.02-inch/ 20-slot	0.02-inch/ 20-slot	0.02-inch/ 20-slot	0.02-inch/ 20-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.02-inch/ 20-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot	0.01-inch/ 10-slot
Screened Interval (feet bgs)	44 to 54	2 to 15	42 to 47	4 to 24[2]	17 to 22	37 to 42	31 to 36	2 to 15	32 to 37	30 to 35	42 to 47	2 to 15	2 to 15	2 to 12
2-foot sump (Y/N)	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	N	N	N
Filter Material	No. 2 filtration sand	No. 2 filtration sand	No. 2 filtration sand	No. 2 filtration sand	No. 1 filtration sand	No. 1 filtration sand	No. 1 filtration sand	No. 2 filtration sand	No. 2 filtration sand	No. 1 filtration sand	No. 1 filtration sand	No. 1 filtration sand	No. 1 filtration sand	No. 1 filtration sand

[2] A 20-foot well screen was used to construct LMW11. This well was originally planned to be a deep monitoring well; however, refusal at rock was encountered at about 24 feet bgs during installation. Groundwater was observed at about 5 feet bgs and the highest photoionization detector (PID) readings were found at about 12 to 15 feet bgs; therefore, a longer screen was used to capture the groundwater surface and the impacted zone.

Following installation, monitoring wells were developed by surging with a surge block attached to a 1-inch PVC pipe and pumping the well using a submersible whale pump. Development water was placed in labeled 55-gallon UN/DOT drums pending off-site disposal.

Groundwater monitoring well locations are presented on Figure 4. Well construction logs are included in Appendix D. The top of well casings were surveyed by Langan on September 7, 2018 and May 14, 2019. A Langan field engineer completed a synoptic groundwater gauging of all RI wells on September 5, 2018. Monitoring wells installed as part of the SRI were gauged on May 9, 2019. Well gauging data and information, including depth to groundwater measurements and groundwater elevations, are presented in Table 2.

4.3.2 Groundwater Sampling

Monitoring wells were sampled one to two weeks after installation and development during the RI and SRI as required by NYSDEC and in general accordance with NYSDEC DER-10 and USEPA's *Low Flow Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells*. Before sampling, the headspace of existing and new monitoring wells were monitored with a PID and the wells were gauged with an interface probe to determine the depth to groundwater and thickness of any NAPL (LNAPL or DNAPL). Before the groundwater samples were collected, the wells were continuously purged until groundwater quality parameters (pH, conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential) stabilized, to the extent practical, in accordance with the USEPA low-flow guidance. A multi-parameter water quality system was used to monitor the groundwater quality parameters during sampling. Samples were collected with a peristaltic pump and dedicated high density polyethylene (HDPE) tubing. Purge water was containerized into labeled 55-gallon UN/DOT drums pending off-site disposal. Groundwater sampling logs are included in Appendix E.

Groundwater samples were collected in laboratory-supplied glassware, packed with ice to maintain a temperature of 4°C, and transported via courier service to York under chain-of-custody protocol. Groundwater samples were analyzed by York for one or more of the following parameters:

- Part 375/TCL VOCs
- Part 375/TCL SVOCs
- Part 375/TCL PCBs
- Part 375/TCL pesticides
- Part 375/TAL metals/inorganics (field-filtered and unfiltered)
- Emerging contaminants, including 1,4-dioxane and PFAS

Select groundwater samples from wells MW-1, LMW08S, and LMW12S were also analyzed for the following parameters to evaluate in-situ groundwater remediation alternatives: nitrite, nitrate, methane, ethane, ethene, sulfate, TOC, COD, BOD, alkalinity, iron and manganese (total and dissolved), and *Dehalococcoides* (DHC).

4.4 Soil Vapor and Sub-slab Vapor Investigation

NYSDEC DER-10 requires an assessment of soil vapor quality at contaminated sites to evaluate the health risk associated with potential exposure to VOCs through vapor intrusion into occupied structures. After discussions with the NYSDEC Project Manager on August 14, 2018, one sub-slab soil vapor point (LSV22) was installed at a point centrally located within the existing building slab and sampled during the RI. The sub-slab vapor sampling location is presented on Figure 4. No additional sub-slab or soil vapor samples were collected during the SRI.

4.4.1 Sub-slab Vapor Point Installation

The sub-slab vapor point was installed using a hammer drill to 2 inches below the bottom of existing building slab in general accordance with the NYSDOH's *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006) (hereafter referred to as NYSDOH Guidance). The vapor collection point consisted of a 3/8-inch diameter and 6-inch log polyethylene implant and inert, Teflon-lined polyethylene sample tubing. The annulus (i.e., the sampling zone) around the probes were filled with a clean, course sand pack followed by a hydrated bentonite seal to the top of the slab. The sub-slab soil vapor-point construction and sampling log is provided in Appendix F.

Samples were collected in general accordance with NYSDOH guidance. Before collecting vapor samples, a minimum of three implant volumes (i.e., the volume of the sample probe and tubing) were purged from each sample port at a rate of less than 0.2 liters per minute using a RAE Systems MultiRAE® meter. The purged soil vapor was monitored for VOCs and methane with the MultiRAE® during purging.

A helium tracer gas was used in accordance with the NYSDOH protocols to serve as a quality assurance/quality control (QA/QC) technique to document the integrity of each soil vapor sampling point seal before and after sampling. The tracer gas was introduced into an overturned container, sealed at the ground surface with bentonite, which acted as a shroud for the vapor point and seal. Helium was measured from the sampling tube and inside the container. If the sample tubing contained more than 10% of the tracer gas concentration that was introduced into the container, then the seal was considered compromised and was enhanced or reconstructed to reduce outdoor air infiltration.

After each seal was confirmed, the sub-slab vapor sample was collected into laboratory-supplied batch-certified clean 6-liter Summa® canisters calibrated with flow controllers. A log sheet for the sub-slab vapor sample was completed to record the following:

- Sample identification name;
- Date and time of sample collection;
- Sampling depth;
- Name of the field engineer responsible for sampling;
- Sampling methods and equipment;
- Soil vapor purge volumes;
- Volume of soil vapor extracted;
- Flow rate; and
- Vacuum of canisters before and after sample collection.

The sub-slab vapor sample was collected over an approximately 2-hour sampling period. The Summa® canister was transported via courier service to York under chain-of-custody protocol and analyzed for VOCs by USEPA Method TO-15 by York.

4.5 Off-Site Surface Water and Sediment Investigation

4.5.1 Investigation Methodology

During the SRI, three co-located, off-site surface water samples (SW1 through SW3) and sediment samples (SED1 through SED3) were collected from Branch Brook at three locations, including near the storm sewer outfall, downstream of the stormwater runoff channel proximate to the existing parking lot, and near the southern site boundary. The surface water and sediment sampling locations are presented on Figure 4.

4.5.2 Sampling Methodology

Three off-site surface water samples (SW1 through SW3) were collected from Branch Brook starting downstream and working upstream. Surface water samples were collected directly into laboratory-supplied glassware.

Three off-site sediment samples (SED1 through SED3) were collected from the top 6 inches of sediment from the bed of Branch Brook and were co-located with each of the surface water samples. Sediment samples were collected starting at the most downstream location and progressed sequentially upstream. The samples were placed into laboratory-supplied glassware using a stainless steel shovel that was decontaminated between sampling locations using Alconox® and deionized (DI) water rinse. Sediment samples submitted for VOC analysis were collected directly from the shovel using laboratory-supplied Terra Core® soil samplers. The remaining sample volume was homogenized and placed in appropriate laboratory-supplied containers for additional analyses.

Surface water and sediment samples were packed in coolers with ice to maintain a temperature of 4°C, and transported via courier service to York under chain-of-custody protocol. Surface water and sediment samples were analyzed by York for one or more of the following parameters:

- Part 375/TCL VOCs
- Part 375/TCL SVOCs
- Part 375/TCL PCBs
- Part 375/TCL pesticides
- Part 375/TAL metals/inorganics (field-filtered and unfiltered)
- Emerging contaminants, including 1,4-dioxane and PFAS

4.6 Quality Assurance and Quality Control Sampling

The following QA/QC samples were collected for laboratory analysis by media during the RI and SRI in accordance with the Quality Assurance Project Plan (QAPP). QA/QC samples are summarized below and detailed in Table 1.

Soil/sediment samples

- Six field duplicate samples
- Eleven equipment blanks
- Two MS/MSD sample sets

Groundwater samples

- One field duplicate sample
- One MS/MSD sample set
- Two field blanks
- Three trip blanks

Surface water samples

- One field duplicate sample
- One MS/MSD sample set
- One field blank
- One trip blank

Soil vapor samples

- None

The coded soil, sediment, groundwater, and surface water field duplicates were collected to determine the accuracy of the analytical methods. Duplicates were collected from the same material as the parent samples by splitting the volume of sample collected in the field into two sample containers. The samples are termed "coded" because they were labeled in such a manner that the laboratory would not be able to determine the identity of each duplicate's parent sample. This serves to eliminate possible bias that could arise during analysis. Field duplicates were analyzed for the same parameters as the primary sample.

The MS/MSD samples were also collected to determine the accuracy of the analytical methods. The MS/MSD samples were collected from the same material as the primary sample by splitting the volume of sample collected in the field into three sample containers (one for the parent sample, one for the matrix spike and one for the matrix spike duplicate). Laboratory accuracy is assessed by evaluating the percent recoveries of MS/MSD samples. MS/MSD percent recoveries were compared to either method-specific control limits or laboratory-derived control limits.

Equipment blanks were collected to determine the effectiveness of decontamination procedures for the sampling equipment used to collect soil samples and groundwater samples, the cleanliness of unused nitrile gloves and acetate liners used to collect soil samples, and to confirm that laboratory-supplied DI water used for decontamination procedures is PFAS-free.

Equipment blank samples were collected by pouring deionized, distilled water provided by the laboratory over the decontaminated sampling apparatus and other equipment into laboratory-supplied containers. Equipment blank samples were analyzed for the following parameters:

- Part 375/TCL VOCs
- Part 375/TCL SVOCs
- Part 375/TCL PCBs
- Part 375/TCL pesticides
- Part 375/TAL metals/inorganics
- Emerging contaminants, including 1,4-dioxane and PFAS

Trip blank samples were collected to assess the potential for contamination of the sample containers and samples during the trip from the laboratory to the field and from the field back to the laboratory for analysis. Trip blanks contained about 40 milliliters of acidic water (doped with hydrochloric acid) in vials sealed by the laboratory when the empty sample containers were shipped to the field, and were unsealed and analyzed by the laboratory when a sample shipment was received from the field. The trip blank samples were analyzed for VOCs only.

4.7 Data Validation

Laboratory analyses of soil, groundwater, and soil vapor samples were conducted by a NYSDOH ELAP-approved laboratory in accordance with USEPA SW-846 methods and analytical data was reported consistent with the NYSDEC Analytical Services Protocol (ASP) Category B deliverable format. Environmental data was reported electronically using the database software application EQuIS as part of NYSDEC's Environmental Information Management System (EIMS).

QA/QC procedures required by the NYSDEC ASP and SW-846 methods, including initial and continuing instrument calibrations, standard compound spikes, surrogate compound spikes, and analysis of other samples (blanks, laboratory control samples, and matrix spikes/matrix spike duplicates) were followed. The laboratory provided sample bottles were pre-cleaned and preserved in accordance with the SW-846 methods. Where there were differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP took precedence.

Data validation was performed in accordance with the USEPA validation guidelines for organic and inorganic data review. Validation included the following:

- Verification of QC sample results (both qualitative and quantitative).
- Verification of sample results (both positive hits and non-detects).
- Recalculation of 10 percent of all investigative sample results.
- Preparation of Data Usability Summary Reports (DUSRs).

Laboratory analytical results from the RI and SRI were reported in NYSDEC ASP Category B deliverable format and validated by the Data Validator identified in the QAPP. Appropriate QA/QC samples were also collected as part of those investigations.

4.7.1 Data Usability Summary Report Preparation

A data usability summary report (DUSR) was prepared for each laboratory delivery group following data validation. DUSRs and the data validator's credentials are provided in Appendix G. Each DUSR presents the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of analytical and sampling deficiencies for each analytical method.

For the soil/sediment and aqueous samples, the following items were assessed:

- Holding times

- Sample preservation
- Sample extraction and digestion
- Laboratory blanks
- Laboratory control samples
- System monitoring compounds
- Matrix spike (MS) and matrix spike duplicate (MSD) recoveries
- Initial and continuing calibrations
- Target compound identification and qualification
- Instrument tune
- Internal standard area counts
- Dual column imprecision
- Contract-required detection limit standards
- ICP serial dilutions
- Field duplicate, trip blanks, and field blanks sample results
- Overall method performance

For the air samples, the following items were assessed:

- Holding times
- Clean canister certification
- Initial and final canister pressurization
- Laboratory blanks
- Laboratory control samples
- System monitoring compounds
- Initial and continuing calibrations
- Internal standard area counts
- Target compound identification and qualification
- Field duplicate sample results

Based on the results of data validation, the following qualifiers may be assigned to the data in accordance with the USEPA guidelines and best professional judgment:

- "U" – The analyte was analyzed for, but was not detected at a level greater than or equal to the reporting limit (RL), or the sample concentration results were impacted by blank contamination.
- "UJ" – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.

- "J" – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- "NJ" – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- "R" – The sample results are not useable due to quality of the data generated because certain criteria were not met. The analyte may and may not be present in the sample.

Based on the data validation, the data was determined to be usable. No major deficiencies were identified. Minor deficiencies, including anomalies that directly impact data quality and necessitate qualification but do not result in unusable data, are described in detail in the DUSRs.

4.8 Field Equipment Decontamination

Macro-Core® barrels, dual-tube samplers, down-hole rods, hand augers, and stainless steel shovel used during the RI and/or SRI were cleaned with Alconox® and rinsed at the start of work, between sampling locations, and at the completion of the work. The back of the drill rig and associated tools were decontaminated at the completion of the work before leaving the site. Groundwater sampling equipment, including interface probe and water quality meters, were also cleaned with Alconox® and rinsed with water at the start of work, between sampling locations during groundwater sample collection, and at the completion of work. Dedicated sampling equipment (e.g., acetate sleeves and tubing) was disposed of after single use. Decontamination occurred at the sampling locations or at the decontamination tub and liquids were contained in 55 gallon drums for disposal. Between rinses, equipment was placed on polyethylene sheets, avoiding contact with the ground.

4.9 Investigation-Derived Waste Management

Following sample collection, borings were backfilled with clean sand and/or non-contaminated soil cuttings. Contaminated soil cuttings and purged groundwater (hereafter referred to as investigation-derived waste [IDW]) were containerized into labeled 55-gallon UN/DOT drums and characterized for disposal. The drums are staged in secured areas on-site pending transport by a licensed waste hauler for disposal at an approved facility.

5.0 FIELD OBSERVATIONS AND ANALYTICAL RESULTS

This section summarizes the field observations and laboratory analytical results from the RI and SRI. Soil analytical results are compared to the Part 375-6.8(a) Track 1 Unrestricted Use (UU) and Restricted Use – Commercial Use (CU) SCOs. Groundwater analytical results are compared to the 6 NYCRR Part 703.5 Water Quality Standards for Class GA waters and the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGVs) for Class GA water (collectively referred to as SGVs). Surface water analytical results are compared to 6 NYCRR Part 703.5 Water Quality Standards for Class GA waters and the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGVs) for Class C water. Sediment analytical results were compared to the Class A, B and C guidance values for freshwater sediment as described in Table 5 of the NYSDEC guidance document *Screening and Assessment of Contaminated Sediment (SACS)* dated June 24, 2014. Sub-slab soil vapor results were not compared to any regulatory criteria (no standard for direct comparison of soil vapor samples exists in New York State). The nature and extent of contamination are discussed separately in Section 7.0.

A complete list of samples (soil, groundwater, sub-slab soil vapor, surface water, sediment, QA/QC) collected during the RI and SRI is provided in Tables 1A and 1B. Copies of the laboratory analytical data reports for data generated during the RI and SRI are provided in Appendix H. Summaries of soil, groundwater, sub-slab soil vapor, surface water, sediment, and QA/QC sample analytical result detections for samples collected during the RI and SRI are provided in the following tables:

- Table 3A: Soil Sample Analytical Results Summary – VOCs and SVOCs
- Table 3B: Soil Sample Analytical Results Summary – Pesticides, PCBs, and Metals
- Table 3C: Soil Sample Analytical Results Summary – PFAS
- Table 3D: Soil Sample Analytical Results Summary – Total and TCLP Lead Delineation
- Table 4A: Groundwater Sample Analytical Results Summary – VOCs and SVOCs
- Table 4B: Groundwater Sample Analytical Results Summary – Pesticides, PCBs, and Metals
- Table 4C: Groundwater Sample Analytical Results Summary - PFAS
- Table 5: Sub-Slab Soil Vapor Sample Analytical Results Summary
- Table 6A: Off-Site Surface Water Sample Analytical Results Summary

- Table 6B: Off-Site Sediment Sample Analytical Results Summary
- Table 7: QA/QC Sample Analytical Results Summary

5.1 Geophysical Investigation Findings

No anomalies indicating the presence of USTs were identified during the geophysical survey. Multiple utilities including electric, gas, sanitary and storm sewers, water, telecommunication lines, and street lighting were identified along the west property boundary. A storm sewer line was also identified along the northern property boundary and east of the building with an outfall terminating at Branch Brook. A copy of the August 2018 Geophysical Engineering Survey Report is included in Appendix B.

5.2 Geology and Hydrogeology

A description of the geologic and hydrogeological observations made during the RI and SRI is provided in this section. Boring logs from the RI are provided in Appendix C.

5.2.1 Site Geology

The site's stratigraphy comprises a historic fill layer of variable thickness underlain by native soil and bedrock. The historic fill consists of brown, fine-grained sand with varying amounts of fine gravel, medium and coarse sand, silt, clay, brick, concrete, asphalt, timber, rubber, plastic, and glass and generally extends from ground surface to about 9 feet bgs. The historic fill is present at most boring locations across the site (including around the existing building and in the northern and eastern areas of the site), but was not observed in borings completed in the southern-central and southwestern parts of the site. Native soil underlying the historic fill included an organic clay layer consisting of soft to medium-dense silt and clay or by a fine-grained sand layer with varying amounts of silt and clay. Continental glaciation at the end of the Pleistocene and beginning of the Holocene epochs and the melting of the Wisconsin ice sheets resulted in the deposition of glacial outwash materials to the region and likely caused the distinctive stratigraphy identified beneath the historic fill. The organic clay layer was observed in boring LB07 (with a thickness of about 4 feet from about 7 to 11 feet bgs) and boring LB08 (with a thickness of 1.5 feet, from about 6 to 7.5 feet bgs); the organic clay layer was not present in any other boring at the site. The fine-grained sand layer is present below surface cover (where historic fill was not identified) or the historic fill layer to the top of bedrock; thickness of this unit ranges from about 25 feet to 65 feet. Intermittent clay lenses (about 0.5 to 5 feet thick) were observed in this unit at depths ranging from between 2 and 50 feet bgs. Bedrock was encountered at depths ranging from 24 feet bgs at boring LB11 near the southwest corner of the site to 71 feet bgs at boring LB08 near the east-central part of the site. The bedrock is metamorphic in nature, consistent with the USGS reference map, and appears to slope from west to east.

5.2.2 Site Hydrogeology

Synoptic groundwater-level measurements were collected on September 5, 2018 from all monitoring wells completed during the RI. Depth to groundwater was measured between 0.05 feet (LMW08D) to 5.48 feet (MW-1) below top of well casing with corresponding groundwater elevations from about el. 284.31 to 288.21 feet NAVD88. The groundwater elevations indicate the site has two distinct groundwater systems with a zone of transitional permeability that trends north-south located in the central part of the site. The shallow monitoring wells cluster about a head elevation of el. 285 feet NAVD88 on the eastern half of the site and about el. 287 and 288 feet NAVD88 on the western half of the site. The groundwater elevation is highest in the southwestern part of the site and groundwater appears to flow from the southwest to the northeast toward Branch Brook with a hydraulic gradient of about 0.002 feet per foot (ft/ft). Underground utilities and other subsurface structures or previously disturbed areas (i.e., previous UST excavation and the foundation for the existing building) may locally influence the direction of groundwater flow. Groundwater elevations are summarized in Table 2 and a groundwater contour map with the 2018 data is included as Figure 5A. Synoptic groundwater-level measurements were also collected on May 9, 2019 during the SRI, and a groundwater contour map with 2019 data is included as Figure 5B. A detailed discussion of the zone of transitional permeability is presented in Appendix I.

5.3 Soil Findings

5.3.1 Field Observations

Evidence of solvent-like impacts, evidenced only by PID readings above background levels, were apparent in 16 of the 29 borings from 2.5 to 51.5 feet bgs. No staining or odors were identified in soil borings. The following table presents, for each boring, the boring completion depth, depth of maximum PID reading, maximum PID reading, and the result of a hydrophobic dye test screening.

Boring ID	Boring Completion Depth (feet bgs)	Depth of Maximum PID Reading (feet bgs)	Maximum PID Reading (ppm)	Dye Test Screening Result
LB01	60	49	3.5	Negative
LB07	20	–	0.0	NT
LB08	71	51.5	6.4	Negative
LB09	20	–	0.0	NT

Boring ID	Boring Completion Depth (feet bgs)	Depth of Maximum PID Reading (feet bgs)	Maximum PID Reading (ppm)	Dye Test Screening Result
LB10	47	31.5	535.3	Negative
LB11	24	11.5	38.9	Negative
LB12	44	20	414	Negative
LB13	30	23.5	6.4	Negative
LB14	30	14	75.0	Negative
LB15	56	33	105	Negative
LB16	20	–	0.0	NT
LB17	50	44	4.7	Negative
LB18	12	11.5	15.3	NT
LB19	45	34.5	156	Negative
LB20	49	33	115.8	Negative
LB21	20	19	4.4	Negative
LB22	15	–	0.0	NT
LB23 (RI)	20	–	0.0	NT
LB23 (SRI)	10	–	0.0	NT
LB23_N1	8	–	0.0	NT
LB23_N2	8	–	0.0	NT
LB23_E1	8	–	0.0	NT
LB23_S1	8	–	0.0	NT
LB23_S2	8	–	0.0	NT
LB24	20	14	2.7	Negative
LB25	20	–	0.0	NT
LB26	20	–	0.0	NT
LB27	12	11.5	22.0	NT
LB28	12	12	113.6	NT

Notes:

ppm = parts per million

Boring ID	Boring Completion Depth (feet bgs)	Depth of Maximum PID Reading (feet bgs)	Maximum PID Reading (ppm)	Dye Test Screening Result
-- = reading was not collected or zero *NT = not tested*				

5.3.2 Analytical Results

This section summarizes the soil results generated during the RI and SRI. The soil analytical results are discussed below by analyte class (VOCs, SVOCs, PCBs, pesticides, metals, and emerging contaminants [1,4-dioxane and PFAS]). The lists below summarize the compounds detected above the Part 375 UU and CU SCOs. The soil analytical results are presented in Tables 3A, 3B, 3C and 3D and Figures 6A and 6B. The full laboratory soil analytical data reports are provided in Appendix H.

VOCs

Two VOCs were detected at concentrations exceeding the UU SCOs in 32 soil samples collected from borings LB01, LB07, LB08, LB10, LB11, LB12, LB13, LB14, LB15, LB17, LB19, LB20, LB21, LB24, and LB28 at depths up to 70 feet bgs. No VOCs were detected above the CU SCOs. The following table lists the minimum and maximum concentrations (by sample) of VOCs detected above the UU SCOs.

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU and CU SCOs	Frequency of Detection above SCO
Acetone[1]	0.051 mg/kg in LB19_44-45	0.15 mg/kg in LB25_7-8	UU: 0.05 mg/kg CU: 500 mg/kg	7 of 76
TCE	0.57 mg/kg in LB08_62-63	13 mg/kg in LB14_13-14	UU: 0.47 mg/kg CU: 200 mg/kg	24 of 76
Notes: 1. *mg/kg – milligram per kilogram* 2. *Acetone is a common lab contaminant and it was detected in laboratory QA/QC blanks – its presence in soil is not likely representative of site conditions.*				

SVOCs

Seven SVOCs were detected in one soil sample (LB28_3-4) at concentrations exceeding the UU and/or CU SCOs from boring LB28. The following table lists the minimum and maximum concentrations of SVOCs detected above the UU and/or CU SCOs. Concentrations above the CU SCO are in bold.

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU and CU SCOs	Frequency of Detection above SCO
Benzo(a)anthracene	3.29 mg/kg		UU: 1 mg/kg CU: 5.6 mg/kg	1 of 76
Benzo(a)pyrene	**3.06 mg/kg**		UU: 1 mg/kg CU: 1 mg/kg	1 of 76
Benzo(b)fluoranthene	2.81 mg/kg		UU: 1 mg/kg CU: 5.6 mg/kg	1 of 76
Benzo(k)fluoranthene	2.13 mg/kg		UU: 0.8 mg/kg CU: 56 mg/kg	1 of 76
Chrysene	2.88 mg/kg		UU: 1 mg/kg CU: 56 mg/kg	1 of 76
Dibenzo(a,h)anthracene	0.466 mg/kg		UU: 0.33 mg/kg CU: 0.56 mg/kg	1 of 76
Indeno(1,2,3-cd)pyrene	2.15 mg/kg		UU: 0.5 mg/kg CU: 5.6 mg/kg	1 of 76

PCBs

PCBs were not detected in any soil samples at concentrations exceeding the UU and/or CU SCOs.

Pesticides

Three pesticides were detected at concentrations exceeding the UU SCOs in four soil samples collected from borings LB12, LB20, and LB21, and from surface sample SS7 at depths ranging from 0 to 6 feet bgs. No pesticides exceeded the CU SCOs. The following table lists the minimum and maximum concentrations of pesticides detected above the UU SCOs.

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU and CU SCOs	Frequency of Detection above SCO
4-4’-DDD	0.0066 mg/kg in LB21_5-6		UU: 0.0033 mg/kg CU: 92 mg/kg	1 of 44
4-4’-DDE	0.0049 mg/kg in LB21_5-6		UU: 0.0033 mg/kg CU: 62 mg/kg	1 of 44
4-4’-DDT	0.00408 mg/kg in SS7_0-2in	0.0058 mg/kg in LB21_5-6	UU: 0.0033 mg/kg CU: 47 mg/kg	4 of 44

Metals

Six metals were detected at concentrations exceeding the UU and/or CU SCOs in 22 samples collected from borings LB01, LB07, LB08, LB12, LB19, LB20, LB21, LB23, and LB25, and from surface samples SS1, SS2, SS3, SS4, SS5, SS6, and SS7 at depths ranging from 0 to 16 feet bgs. The following table lists the minimum and maximum concentrations of metals detected above the UU and/or CU SCOs. Concentrations above the CU SCO are in bold.

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU and CU SCOs	Frequency of Detection above SCO
Copper	83.2 mg/kg in LB19_5-6	132 mg/kg In LB08_4-5	UU: 50 mg/kg CU: 270 mg/kg	3 of 44
Lead	63.9 mg/kg in SS5_10-12in	**3,690 mg/kg** in LB23_4-5	UU: 63 mg/kg CU: 1000 mg/kg	19 of 44
Nickel	34.1 mg/kg in LB08_4-5		UU: 30 mg/kg CU: 310 mg/kg	1 of 44
Mercury	0.181 mg/kg in LB25_7-8	0.355 mg/kg in SS2_10-12in	UU: 0.18 mg/kg CU: 2.8 mg/kg	3 of 44
Trivalent Chromium	30.4 mg/kg in SS7_0-2in	47.6 mg/kg in LB25_7-8	UU: 30 mg/kg CU: 1,500 mg/kg	5 of 44
Zinc	116 mg/kg in LB08_4-5 and LB25_7-8	477mg/kg in SS7_0-2in	UU: 109 mg/kg CU: 10,000 mg/kg	3 of 44

Total Lead/Hazardous Lead Delineation

A total and hazardous lead delineation sampling program was performed as part of the May 2019 SRI in response to the high lead concentration found in sample LB23_4-5 during the RI. The delineation program started by re-drilling at the original location of boring LB23, advancing one step-out delineation boring 5 feet to the east of LB23, and advancing two step-out delineation borings to the north and south of boring LB23 (one 5 feet away and one 10 feet away). Lead was detected above the CU SCO in 2 of 22 delineation samples collected during the SRI. Characteristic hazardous lead concentrations (TCLP lead result above 5 milligrams per liter [mg/L]) were detected in 7 of 22 delineation samples. Hazardous lead was found in boring LB23 from 6 to 8 feet bgs, in LB23_N1 from 0 to 6 feet bgs, in LB23_S1 from 2 to 6 feet bgs, and in LB23_S2 from 2 to 4 feet bgs. The investigation successfully identified a clean interval beneath each hazardous lead concentration. Therefore, the vertical extents of hazardous lead impacts has been delineated. Based on the hazardous lead impacts identified at LB23_S2, the horizontal extent of the lead contamination was not fully delineated to the south of the original location of boring LB23. The additional delineation will be completed during the future waste characterization study as part of the implementation of the RAWP. The locations of and results for the total and hazardous lead delineation borings are presented on Figure 6B.

Emerging Contaminants

No standards for 1,4-dioxane and PFAS in soil currently exists in New York State. 1,4-dioxane was not detected in any soil samples. Two PFAS compounds were detected in 6 of 9 soil samples collected from surface soil sampling locations SS1, SS3, SS5, and SS7 at depths ranging from 0 to 12 inches bgs. PFAS were not detected in soil samples collected from LB23, LB27, and LB28. The detected PFAS compounds include the following:

- Perfluorobutanoic acid (PFBA) (non-detect to 0.00125 mg/kg, or 1.25 microgram per kilogram [µg/kg])
- Perfluorooctanesulfonic acid (PFOS) (non-detect to 0.00208 mg/kg, or 2.08 µg/kg)

5.4 Groundwater Findings

5.4.1 Field Observations

The existing and newly installed monitoring wells were gauged for LNAPL and DNAPL using an oil-water interface probe. No LNAPL or DNAPL was identified. Well headspace PID readings ranged from 0.0 to 3,139 ppm (highest reading in monitoring well LMW11) during groundwater sampling and/or well gauging activities. In addition, no sheen or odors were observed during groundwater sampling and/or well gauging activities.

5.4.2 Analytical Data

This section summarizes the groundwater results generated during the RI and SRI. The groundwater analytical results are discussed below by analyte class (VOCs, SVOCs, PCBs, pesticides, metals, and emerging contaminants). The groundwater analytical results were compared to the NYSDEC SGVs for Class GA water. The lists below summarize the analytes detected above the NYSDEC Class GA SGVs. The groundwater analytical results are presented in Tables 4A, 4B, and 4C and Figure 7. The full laboratory groundwater analytical data reports are provided in Appendix H.

VOCs

Groundwater samples collected from all monitoring wells exhibited concentrations of petroleum-related VOCs and CVOCs. The following table lists the minimum and maximum concentrations of VOCs detected above the NYSDEC Class GA SGVs.

Parameter	Minimum Detected Concentration above SGV	Maximum Detected Concentration above SGV	NYSDEC Class GA SGV	Frequency of Detection above SGV
1,1,1-Trichloroethane	8.23 µg/L in LMW19D_090718	13.1 µg/L in LMW19S_090718	5 µg/L	3 of 21
1,1-Dichloroethane	5.62 µg/L in LMW19S_090718	27.4 µg/L in LMW01D_090518	5 µg/L	10 of 21
1,1-Dichloroethylene	7.52 µg/L in GWDUP01_090518 (MW-1)	17.2 µg/L in LMW12S_090718	5 µg/L	8 of 21
1,2-Dichloropropane	2.9 µg/L in LMW12D_090618		1 µg/L	1 of 21
2-Butanone	68.10 µg/L in LMW19S_090718		50 µg/L	1 of 21
Benzene	2.88 µg/L in LMW19S_090718	7.17 µg/L in MW-2_090518	1 µg/L	2 of 21
Chloroethane	23.10 µg/L in LMW19S_090718		5 µg/L	1 of 21
cis-1,2-Dichloroethylene	7.9 µg/L in MW-4_090618	1,100 µg/L in LMW01D_090518	5 µg/L	19 of 21
p/m-xylene	6.24 µg/L in LMW19S_090718		5 µg/L	1 of 21
Tetrachloroethylene (PCE)	5.17 µg/L in LMW20S_090618	14.2 µg/L in LMW19S_090718	5 µg/L	6 of 21
Trans-1,2-dichloroethylene	5.5 µg/L in GWG03_050919	10.8 µg/L in LMW01D_090518	5 µg/L	2 of 21
TCE	15.1 µg/L in MW-6_090718	15,800 µg/L in LMW12S_090618	5 µg/L	17 of 21
Vinyl Chloride	2.35 µg/L in MW-4_090618	45.5 µg/L in LMW19S_090718	2 µg/L	17 of 21
Total xylenes	8.58 µg/L in LMW19S_090718		5 µg/L	1 of 21

Notes:

1. *µg/L – micrograms per liter*

SVOCs

A groundwater sample collected from MW-4 exhibited one SVOC exceeding the NYSDEC Class GA SGV. The following table lists the minimum and maximum concentrations (by sample) of SVOCs detected above the NYSDEC Class GA SGVs.

Parameter	Minimum Detected Concentration above SGV	Maximum Detected Concentration above SGV	NYSDEC Class GA SGV	Frequency of Detection above SGV
Bis (2-ethylhexyl) phthalate	5.07 µg/L in MW-4_090618		5 µg/L	1 of 21

Pesticides

Pesticides were not detected in any groundwater sample at concentrations exceeding the NYSDEC Class GA SGV.

PCBs

PCBs were not detected in any groundwater sample at concentrations exceeding the NYSDEC Class GA SGV.

Total Metals

Groundwater samples collected from the 12 monitoring wells, including MW-1, LMW01D, LMW08S, LMW08D, LMW11, LMW12S, LMW12D, LMW15, LMW19S, LMW19D, LMW20S, and LMW20D, exhibited total concentrations of metals above the NYSDEC Class GA SGV. The following table lists the minimum and maximum concentrations (by sample) of total metals detected above the NYSDEC Class GA SGVs.

Parameter	Minimum Detected Concentration above SGV	Maximum Detected Concentration above SGV	NYSDEC Class GA SGV	Frequency of Detection above SGV
Barium	1,450 µg/L in LMW12S_090618	3,260 µg/L in LMW19S_090618	1,000 µg/L	2 of 13
Iron	322 µg/L in MW-1_090518	15,800 µg/L in LMW15_090618	300 µg/L	12 of 13
Lead	33.3 µg/L in LMW19S_090718		25 µg/L	1 of 13
Magnesium	36,000 µg/L in LMW20D_090618	164,000 µg/L in LMW19S_090718	35,000 µg/L	6 of 13
Manganese	308 µg/L in LMW19D_090718	19,600 µg/L in LMW19S_090718	300 µg/L	10 of 13
Selenium	12.5 µg/L in LMW11_090718	42 µg/L in LMW19S_090718	10 µg/L	4 of 13
Sodium	22,900 µg/L in LMW08S_090518	70,800 µg/L in LMW11_090718	20,000 µg/L	11 of 13
Thallium	1.83 µg/L in LMW12D_090618		0.5 µg/L	1 of 13

Dissolved Metals

Groundwater samples collected from 9 wells, including MW-1, LMW08S, LMW11, LMW12D, LMW15, LMW19S, LMW19D, LMW20S, and LMW20D exhibited dissolved concentrations of metals above the NYSDEC Class GA SGV. The following table lists the minimum and maximum concentrations (by sample) of dissolved metals detected above the NYSDEC Class GA SGVs.

Parameter	Minimum Detected Concentration above SGV	Maximum Detected Concentration above SGV	NYSDEC Class GA SGV	Frequency of Detection above NYSDEC Class GA SGV
Iron	345 µg/L in GWDUP01_090518 (MW-1)	2,430 µg/L in LMW08S_090518	300 µg/L	3 of 13
Magnesium	38,000 µg/L in LMW19S_090718		35,000 µg/L	1 of 13
Manganese	305 µg/L in LMW19D_090718	6,010 µg/L in LMW19S_090718	300 µg/L	7 of 13
Sodium	22,000 µg/L in LMW08S_090518	69,700 µg/L in LMW11_090718	20,000 µg/L	10 of 13

Emerging Contaminants

No standards for 1,4-dioxane and PFAS compounds currently exist in New York State. The emerging contaminant 1,4-dioxane was detected in six monitoring wells, including wells MW-1, LMW08S, LMW12S, GWG01, GWG02, and GWG03, at concentrations ranging from 0.26 µg/L to 29 µg/L.

PFAS compounds were detected in two monitoring wells (LMW08S and MW-1). The following PFAS compounds were detected:

- Perfluoroheptanoic acid (PFHpA) (non-detect to 2.6 nanograms per liter [ng/L])
- Perfluorohexanoic Acid (PFHxA) (non-detect to 5.4 ng/L)
- Perfluorooctanesulfonic acid (PFOS) (non-detect to 4.8 ng/L)
- Perfluorooctanoic Acid (PFOA) (non-detect to 11 ng/L)
- Perfluoropentanoic Acid (PFPeA) (non-detect to 2.2 ng/L)

5.5 Sub-Slab Vapor Findings

The sub-slab soil vapor results from LSV22 were not compared to regulatory criteria, as no standard for direct comparison of soil vapor samples currently exists in New York State. Sub-slab soil vapor sample results are presented in Table 5 and Figure 8. The full laboratory groundwater analytical data reports are provided in Appendix H.

Alcohol, ketone, petroleum, and solvent-related compounds (including chlorinated volatile organic compounds [CVOCs]) were detected in the sub-slab soil vapor sample:

- Alcohol compounds included isopropanol.
- Ketone compounds included acetone, methyl ethyl ketone, 2-hexanone, and methyl isobutyl ketone.

- Petroleum compounds included benzene, toluene, ethyl benzene and xylenes (BTEX) and other petroleum-related compounds (including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-ethyltoluene, n-heptane, and n-hexane).
- Solvent-related compounds included, but were not limited to, carbon disulfide, chloroform, cyclohexane, methylene chloride, PCE, tetrahydrofuran, TCE, and trichlorofluoromethane.

The total detected VOCs in sample LSV22 was 633.592 µg/m³. TCE was detected at 3.7 µg/m³, PCE was detected at 14 µg/m³ and dichlorofluoromethane (Freon-12) was detected at 310 µg/m³. Considering the CVOC concentrations in groundwater, the vapor results appear to be biased low, likely a result of a shallow groundwater table. Moist soil within the capillary fringe is known to affect vapor concentration profiles because of partitioning from the vapor to the liquid phase.[3]

5.6 Off-Site Surface Water and Sediment Sampling Results

This section summarizes the off-site surface water and sediment analytical results generated during the SRI. The analytical results are discussed below by analyte class (VOCs, SVOCs, PCBs, pesticides, metals, and emerging contaminants). The surface water analytical results were compared to the NYSDEC SGVs for Class C water, while the sediment analytical results were compared to the Class A, B and C guidance values for freshwater sediment as described in Table 5 of the NYSDEC guidance document *Screening and Assessment of Contaminated Sediment (SACS)* dated June 24, 2014. Class A sediments are considered low risk to aquatic life, Class B sediments are considered slightly-to-moderately contaminated, and Class C sediments are considered highly-contaminated and likely pose a risk to aquatic life. The off-site surface water and sediment analytical results are presented in Tables 6A and 6B (respectively) and Figure 9. The full laboratory groundwater analytical data reports are provided in Appendix H.

VOCs

No VOCs were detected at concentrations exceeding the NYSDEC Class C SGVs in surface water. No VOCs were detected in sediment above the Class A guidance values.

SVOCs

One SVOC, bis(2-ethylhexyl) phthalate, was detected at a concentration of 1.91 µg/L exceeding the NYSDEC TOGS Class C SGV in surface water of 0.6 µg/L for Type A(C) water (Fish Propagation – Fresh Water). No SVOCs were detected in sediment above the Class A guidance values.

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[3] USEPA. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings (2004). http://www.epa.gov/oswer/riskassessment/airmodel/pdf/2004_0222_3phase_users_guide.pdf

PCBs

PCBs were not detected in any surface water or sediment samples.

Pesticides

Pesticides were not detected in any surface water or sediment samples.

Metals

Two surface water samples exhibited total or dissolved concentrations of metals above the NYSDEC Class C SGV. The following table lists the minimum and maximum concentrations (by sample) of metals detected above the NYSDEC Class C SGVs.

Parameter	Minimum Detected Concentration above SGV	Maximum Detected Concentration above SGV	Type A(C) Class C SGV	Frequency of Detection above SGV
Aluminum (dissolved)	143 µg/L in SWDUP01_050219 (SW-3)		100 µg/L	1 of 4
Iron	955 µg/L in SWDUP01_050219 (SW-3)	1,180 µg/L in SW3_050219	300 µg/L	4 of 4

Six metals were detected at concentrations exceeding the Class A guidance values in one or more of the three sediment samples. The following table lists the minimum and maximum concentrations (by sample) of metals detected above the Class A guidance values. Concentrations above the Class B guidance value and Class C guidance value are in italics and bold, respectively.

Parameter	Minimum Detected Concentration above Class A	Maximum Detected Concentration above Class A	Class A, B and C concentration ranges	Frequency of Detection above Class A
Cadmium	*1.010 mg/kg in SED3_0-0.5*		Class A: < 1 mg/kg Class B: 1 – 5 mg/kg Class C: > 5 mg/kg	1/3
Total Chromium	*43.9 mg/kg in SED2_0-0.5*		Class A: < 43 mg/kg Class B: 43 – 110 mg/kg Class C: > 110 mg/kg	1/3
Copper	*56.2 mg/kg in SED3_0-0.5*		Class A: < 32 mg/kg Class B: 32 – 150 mg/kg Class C: > 150 mg/kg	1/3
Lead	*38.4 mg/kg in SED1_0-0.5*	***201 mg/kg in SED3_0-0.5***	Class A: < 36 mg/kg Class B: 36 – 130 mg/kg Class C: > 130 mg/kg	3/3
Nickel	*28 mg/kg in SED3_0-0.5*		Class A: < 23 mg/kg Class B: 23 – 49 mg/kg Class C: > 49 mg/kg	1/3
Zinc	*134 mg/kg in SED2_0-0.5*	*244 mg/kg in SED3_0-0.5*	Class A: < 120 mg/kg Class B: 120 – 460 mg/kg Class C: > 460 mg/kg	3/3

Emerging Contaminants

No standards for 1,4-dioxane and PFAS compounds currently exist in New York State. 1,4-dioxane was not detected in any of the surface water or sediment samples.

PFAS compounds were not detected in sediment samples. PFAS compounds were detected in two surface water samples. The following PFAS compounds were detected in surface water:

- Perfluorobutanesulfonic Acid (PFBS) – 5.4 to 5.75 ng/L
- Perfluorobutanoic Acid (PFBA) – 4.06 to 4.31 ng/L
- Perfluoroheptanoic Acid (PFHpA) – 2.49 to 2.71 ng/L
- Perfluorohexanesulfonic Acid (PFHxs) – 2.34 to 2.43 ng/L
- Perfluorohexanoic Acid (PFNA) – 6.99 to 7.64 ng/L
- Perfluorooctanesulfonic acid (PFOS) – 7.96 to 11.8 ng/L
- Perfluorooctanoic Acid (PFOA) – 7.08 to 8.76 ng/L
- Perfluoropentanoic Acid (PFPeA) – 6.62 to 7.51 ng/L

5.7 Quality Control Results

Field duplicates, MS/MSDs, field equipment blanks, and trip blanks collected during the RI and SRI are listed in Table 1. Field duplicate sample results are presented in Table 3A through Table 6B alongside their parent samples and the analytical results for equipment blanks and trip blank samples are summarized in Table 7. The field duplicate results closely matched the results from their parent samples thereby demonstrating the accuracy of the analytical methods. The equipment and trip blank results indicated field decontamination procedures were effective and highlighted no cross-contamination issues during sample transport, respectively.

5.8 Data Usability

ASP Category B data deliverables for soil, groundwater, soil vapor, surface water, and sediment samples were provided by York and reviewed by Langan's data validator. DUSRs are provided in Appendix G. The results of the data validation review are summarized below.

Based on the data validation, the data was determined to be usable. No major deficiencies were identified. Minor deficiencies, including anomalies that directly impact data quality and necessitate qualification but do not result in unusable data, are described in detail in the DUSRs.

5.9 Evaluation of Areas of Concern

This section discusses the results of the RI and SRI with respect to the AOCs identified before the start of the RI and SRI (described in Section 3.4) and any new AOCs identified during the RI and SRI. Based on the results of the data from both investigations, the AOCs were re-numbered to combine AOC 3 (CVOCs in groundwater), AOC 4 (CVOCs in soil vapor), and AOC 6 (Chlorinated solvents from off-site sources) into a single AOC (AOC-3) as they all are related to a single source. The occurrence of hazardous lead in soil in the northwest corner of the site was classified as its own AOC (AOC 4). Because the floor drains do not constitute a source area for any on-site contamination, no further action is required for AOC 5. The pre-RI and SRI AOCs are shown on Figure 4. The post-RI and SRI AOCs are shown on Figure 10.

5.9.1 AOC 1: Former Tank Area

AOC 1 represented the location of former USTs, immediately east of the existing building. Potential subsurface impacts related to the former tanks were investigated during the RI and SRI. Contaminants of concern (COC) for this AOC included petroleum-related VOCs. Sampling locations associated with AOC 1 delineation include soil borings LB01, LB16, LB17, LB18, LB19, LB21, LB25, LB27 and LB28, and monitoring wells MW-1, LMW01D, LMW19S, LMW19D, MW20S, MW20D, GWG01, GWG02, and GWG03. A summary of findings and conclusions associated with AOC 1 are presented below.

AOC-1 Findings

- The geophysical survey did not identify anomalies consistent with USTs within AOC 1 or any other area at the site.

- Petroleum-like impacts, evidenced by odors, staining, or PID readings above background levels, were not observed in soil borings or monitoring wells.
- Petroleum-related VOCs were not detected in any of the soil or groundwater samples, except for LMW19S. Three petroleum-related VOCs, including benzene, m/p xylene and total xylenes exceeded the NYSDEC Class GA SGVs in groundwater in well LMW19S. No potential source area around LMW19S was identified during the SRI. No petroleum-related VOCs were detected in the wells installed along the northern site boundary. The petroleum-related VOCs in LMW19S may be attributed to incidental historical onsite releases.

AOC-1 Conclusions

- No petroleum source area was identified on-site during the RI and SRI and no petroleum-related contaminants appear to be are migrating off-site.
- The detected concentrations of petroleum-related VOCs identified in LMW19S are considered residual in nature. No further action associated with the former USTs and AOC 1 is warranted.

5.9.2 AOC 2: Historic Fill Material

AOC 2 represents the near ubiquitous historic fill layer below the existing site cover systems. AOC 2 is a site-wide AOC and investigation locations include all borings, surface soil sampling locations, and monitoring wells. Constituents of concern for this AOC include SVOCs and metals (including characteristic hazardous lead). Historic fill is present at most boring locations across the site (including around the existing building and in the northern and eastern areas of the site), but was not observed in borings completed in the southern-central and southwestern parts of the site (LB10, LB11, LB12, LB14, LB15, LB24, and LB26). A summary of findings and conclusions associated with AOC 2 are presented below.

AOC-2 Findings

- Historic fill was identified through field observations and review of analytical data from surface grade to depths up to 9 feet bgs. The vertical extent of historic fill was documented by field observations of the historic fill/native soil contact and one or more samples collected from the native soil interval in borings at the site.
- Field observations determined the historic fill generally consists of brown, fine-grained sand with varying amounts of fine gravel, medium and coarse sand, silt, clay, brick, concrete, asphalt, timber, rubber, plastic, and glass.

- Several SVOCs, pesticides, and metals exceeded the UU SCOs in one or more soil samples collected within the historic fill layer. Benzo(a)pyrene and lead were the only contaminants that exceeded the CU SCOs. Benzo(a)pyrene exceeded the CU SCO in boring LB28 (at 3-4 feet bgs) and lead exceeded the CU SCO in boring LB23 and one of the delineation borings (LB23_N1) at depths up to 6 feet bgs. Seven delineation samples contained characteristic hazardous lead concentrations from 0 to 8 feet bgs.
- No SVOCs were detected in groundwater above the NYSDEC Class GA SGV with the exception of bis (2-ethylhexyl) phthalate at one monitoring well, MW-4. No source of bis (2-ethylhexyl) phthalate was identified on-site; the detection is likely related to impurities present in groundwater sampling equipment and tubing.
- Barium, iron, magnesium, manganese, selenium, sodium, and thallium were detected in total and/or dissolved concentrations above the NYSDEC Class GA SGV in most of the groundwater samples. These metals are characteristic of naturally-occurring groundwater conditions.
- Lead was detected in total concentrations above the NYSDEC Class GA SGV in one groundwater sample (LMW19S). This concentration in groundwater at LMW19S is likely attributed to the presence of suspended solids/particles derived from historic fill.

AOC-2 Conclusions

- Historic fill was identified below surface cover to depths up to 9 feet bgs and nearly ubiquitous across the site. SVOCs and metals present in historic fill were detected at isolated concentrations above the CU SCOs. The RI and SRI characterized the historic fill layer and also defined the native soil horizon through visual observation and analytical data. Surface soil surrounding the existing building and parking lot (with the exception of area of characteristic hazardous lead) meets the CU SCOs and is suitable for cover soil. Hazardous lead soil will be addressed as its own AOC (see AOC-4).
- The presence of metals in groundwater appears to be related to natural occurrence (barium, iron, magnesium, manganese, selenium, sodium, and thallium) or historic fill (lead). Characteristic hazardous concentrations of lead in the vicinity of LB23 do not appear to be have impacted groundwater quality.

5.9.3 AOC 3: Chlorinated Solvents in Soil, Groundwater, and Soil Vapor from Off-Site Sources

AOC 3 represents CVOCs identified in groundwater during previous investigations, the RI and SRI. AOC 3 is a site-wide AOC and investigation locations include all borings, monitoring wells, and sub-slab vapor sampling locations. Constituents of concern for this AOC include PCE and

TCE and their breakdown products (trans-1,2-DCE, cis-1,2-DCE, and vinyl chloride), and 1,1,1-TCA and its breakdown products (1,1-DCA, 1,1-DCE and chloroethane). A summary of findings and conclusions associated with AOC 3 are presented below.

AOC-3 Findings

- TCE was detected at concentrations above the UU SCO in soil samples from 13 borings, including LB01, LB08, LB10, LB11, LB12, LB13, LB14, LB15, LB17, LB19, LB20, LB21, and LB24 at depths ranging from about 11 feet to 63 feet bgs. Although present in these borings, no on-site source of TCE was identified. The presence of TCE in these soil samples is explained by the presence of TCE in water molecules entrained in soil pore space and/or adsorbed to soil particles. No other CVOC was detected in soil above the UU SCO.
- CVOCs, including PCE, TCE, 1,1,1-TCA and/or their breakdown products, were detected in all on-site monitoring wells above the NYSDEC Class GA SGVs. The maximum concentrations of PCE, TCE and 1,1,1 TCA were 14.2 µg/L (LMW19S), 15,800 µg/L (LMW12S), and 13.1 µg/L (LMW19S), respectively.
- PCE and TCE were detected in the sub-slab vapor at concentrations 14 $\mu g/m^3$ and 3.7 $\mu g/m^3$, respectively.
- An evaluation of the groundwater elevations indicate the site has two distinct groundwater systems with a zone of transitional permeability located in the central part of the site trending north-south. The groundwater elevation is highest in the southwestern part of the site and groundwater flows from the southwest to the northeast toward Branch Brook. A detailed discussion of the zone of transitional permeability is presented in Appendix I.
- The maximum concentration of TCE was detected in the southwestern (hydraulically upgradient) part of the site. CVOC concentrations to the west of the zone of transitional permeability are generally one to two orders of magnitude higher than CVOC concentrations east of the boundary.

AOC-3 Conclusions

- No on-site source of CVOCs was identified.
- The analytical results, groundwater system, and conceptual site model indicate the suspected source of the CVOCs is off-site and is may be attributed to a known larger quantity generator (1986 to 1999) of spent halogenated solvent waste. This facility, Toyota North, is located hydraulically upgradient of the site at 255 Kisco Avenue, Mount Kisco, NY).

5.9.4 AOC 4: Hazardous Lead Soil

AOC 4 represents an area identified to contain RCRA characteristic hazardous lead in soil. AOC 4 is a localized AOC and investigation and delineation locations include borings LB23, LB23_N1, LB23_N2, LB23_E1, LB23_S1, and LB23_S2. Constituents of concern for this AOC include lead. A summary of findings and conclusions associated with AOC 2 are presented below.

AOC-4 Findings

- Total lead was detected above CU SCOs in a sample collected at 4 to 5 feet bgs from LB23 during the RI. The concentrations indicated the possibility of RCRA characteristic hazardous lead and prompted a delineation during the SRI.
- Total lead was detected above CU SCOs during the SRI delineation in two borings at depths between 0 and 6 feet bgs.
- TCLP lead concentrations exceeded the RCRA Maximum Concentration for the Toxicity Characteristic (5 mg/L) in 7 samples during the SRI delineation at depths between 0 and 8 feet bgs.

AOC-4 Conclusions

- Characteristic hazardous lead in soil was identified in a localized area near the northwest corner of the site between 0 and 8 feet bgs. The extent of hazardous soil has been vertically delineated and does not extend beyond 8 feet bgs. Additional sampling is needed to fully delineate the southern extent of hazardous lead in soil; the remaining delineation will be completed during waste characterization at a later date.
- Characteristic hazardous concentrations of lead in the vicinity of LB23 are localized and do not appear to have impacted groundwater quality.

5.9.5 AOC 5: Floor Drains

AOC 5 represented floor drains observed in the east-central part of the building. AOC 5 was a localized AOC and investigation and delineation locations included borings LB18, LB19, LB27, LB28 and groundwater monitoring wells LMW19S and LMW19D. COCs associated with this AOC included VOCs, SVOCs and metals. A summary of findings and conclusions associated with AOC 5 are presented below.

AOC-5 Findings

- According to the Phase I ESA (September 2016) prepared by URS September 2016, the drains discharge to the sanitary sewer system. The floor drains appeared to have been filled with concrete before the start of the RI.
- No VOCs were detected above the UU SCOs in shallow soil samples within AOC 5. TCE was detected in boring LB19 in one deep sample (34.5 to 35.5 feet bgs); this detection is representative of groundwater quality and not indicative of an on-site source area.
- While petroleum-related VOCs, including benzene, m/p-xylene and total xylenes, exceeded the NYSDEC Class GA SGV in well LMW19S, no petroleum source area was identified around LMW19S in borings LB18, LB27 or LB28. The petroleum-related VOCs in LMW19S may be attributed to incidental historical onsite releases.
- The SVOCs detected in boring LB28 and metals detected in boring LB19 above the UU SCOs are attributed to historic fill.
- The CVOCs detected in groundwater in wells LMW19S and LMW19D are attributed to a hydraulically upgradient off-site source (see AOC 3). The metals detected in groundwater at these two wells are attributed to naturally-occurring groundwater conditions and/or historic fill.

AOC-5 Conclusions

- The floor drains do not contribute to the subsurface contamination and do not constitute a source area and preferential pathway for contaminant migration. No further action is warranted in association with the floor drains and AOC 5.

6.0 QUALITATIVE HUMAN AND FISH/WILDLIFE EXPOSURE ASSESSMENT

Human health exposure risk was evaluated for both current and future site and off-site conditions in accordance with the NYSDEC DER-10. The assessment included an evaluation of potential sources and migration pathways of site contamination, potential receptors, exposure media, and receptor intake routes and exposure pathways.

In addition to the human health exposure assessment, NYSDEC DER-10 requires an on-site and off-site Fish and Wildlife Resources Impact Analysis (FWRIA) if certain criteria are met. Based on the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, an FWRIA was completed for the site and is included in Appendix J.

6.1 Current Conditions

The site is a 1.73-acre lot with a 13,000-square-foot vacant commercial building with a slab-on-grade foundation, an asphalt-paved parking lot, landscaped areas around the building and parking lot and a wooded area along Branch Book.

6.2 Proposed Conditions

The proposed commercial development includes construction of a parking lot and vehicle storage area with impervious surfaces for the Land Rover Mt. Kisco dealership located to the west of the site at 299 Kisco Avenue, Mount Kisco, NY. The development will include demolition of the existing building and installation of paved surfaces across most of the site footprint. A 10-foot minimum landscaped buffer will be constructed along the entire perimeter of the site. The contemplated use for purposes of the BCP would be commercial.

6.3 Summary of Environmental Conditions

Soil sampling results identified VOCs, SVOCs, pesticides, metals (including hazardous levels of lead) at concentrations exceeding the UU and/or CU SCOs. The suspected source of the VOCs in soil is related to a hydraulically upgradient, off-site source as identified in Section 3.3. The source of the SVOCs and metals is historic fill. The source of the pesticides may also be related to historic fill.

Groundwater samples exhibited concentrations of VOCs, SVOCs, and metals exceeding the NYSDEC Class GA SGVs. The CVOCs detected in groundwater are attributed to a suspected hydraulically upgradient, off-site source as identified in Section 3.3. The isolated occurrence of petroleum-related VOCs in groundwater is likely attributed to an incidental historical onsite release. The metals detected in groundwater are attributed to either naturally-occurring conditions, historic fill and/or an off-site source.

The CVOCs detected in sub-slab soil vapor are attributed to CVOC-impacted groundwater, which originates from the same suspected hydraulically upgradient, off-site source as identified in Section 3.3.

Surface water samples exhibited concentrations of one SVOC and two metals exceeding the NYSDEC Class C SGVs; these detections are considered background and/or related to naturally-occurring conditions.

Sediment samples from Branch Brook exhibited concentrations of metals (including cadmium, total chromium, copper, lead, nickel, and zinc) exceeding the NYSDEC Class A guidance values. All six metals exceeded the minimum NYSDEC Class B guidance value. Lead exceeded the NYSDEC Class C guidance value in the two downstream sediment samples, SED2 and SED3. The analytical data and the spatial distribution of exceedances shows that the concentrations of metals are generally increasing in a downstream direction. In general, the highest metal concentrations appeared in the downstream sample, SED3, with the exception of a few outliers. The source of metals in the sediments is likely attributed to off-site sources, either the settlement/deposition of suspended particles from stormwater runoff entering Branch Brook at the outfall near the northeastern corner of the site and/or erosion of fill material from the raised, railway embankment along the course of the waterway.

6.4 Conceptual Site Model

A conceptual site model (CSM) was developed based on the findings of the previous investigations, the RI and SRI to produce a simplified framework for understanding the distribution of impacted materials, potential migration pathways, and potentially complete exposure pathways, as discussed below.

6.4.1 Potential Sources of Contamination

Potential sources of contamination were identified as 1) suspected hydraulically upgradient off-site sources of CVOCs (including a Large Quantity Generator of spent halogenated solvents identified in Section 3.3) and incidental historical on-site petroleum releases; 2) historic fill with SVOCs, pesticides and metals at concentrations greater than the applicable SCOs; and 3) metals in sediment from stormwater runoff entering Branch Brook at the outfall near the northeastern corner of the site and/or erosion of fill material from the raised, railway embankment along the course of the waterway.

This conclusion for the hydraulically upgradient off-site source of CVOCs is based on the evaluation of groundwater head elevation, site stratigraphy, and TCE concentrations in groundwater. The site has two groundwater systems, both flowing to the northeast.

Groundwater elevations within the western part of the site are about el. 287 to 288 feet NAVD88. In contrast, groundwater elevations in the eastern part of the site are defined by a lower elevation of about el. 285 feet NAVD88. A nominal north-south trending zone of transitional permeability that appears to bisect the site separates the two groundwater systems.

According to site-specific stratigraphy information obtained during the RI, there appears to be a remnant wall of a historical alluvial channel backfilled with alluvium sands inscribed into the western part of the deeper interbedded clay, silt and fine sands, which creates the groundwater separation. The zone of transitional permeability appears to be "leaky", which is evident by the asymmetric groundwater head and iso-contours of TCE.

The groundwater contour map (Figures 5) shows groundwater head contours for the eastern and western shallow groundwater zones, indicating a northeast flow direction on both sides of the boundary. The gradients for both groundwater zones are about 0.002 feet per feet (ft/ft). In contrast, in evaluating the groundwater head differential across the boundary, the gradient is an order of magnitude higher (0.02 ft/ft). This, coupled with the asymmetric iso-contours, can only exist if the zone of transitional permeability restricts flow between both groundwater zones. A detailed discussion of the zone of transitional permeability is presented in Appendix I.

6.4.2 Exposure Media

The contaminated media include soil, groundwater, soil vapor and sediment. The contaminants in the media include: 1) CVOCs in soil, groundwater and soil vapor; 2) petroleum-related VOCs in groundwater; 3) metals in soil, groundwater, and sediment; and 4) pesticides in soil.

6.4.3 Receptor Populations

The site is vacant and unsecured. The building is vacant, but secured and locked. No potential receptors exist except for occasional visitors to the site. During site development, human receptors will be limited to construction and remediation workers, authorized guests visiting the site and the public adjacent to the site. Under future conditions, receptors will include the new property workers and visitors.

6.5 Potential Exposure Pathways – On-Site

6.5.1 Current Conditions

The site is covered in part with impervious surfaces, including an asphalt-paved parking lot and the concrete slab of the existing building; however, the site includes landscaped and vegetated areas with isolated occurrence of exposed soil/fill material, though most exterior areas are covered with lawn grass. Since there are no access restrictions to the site, human exposure to contaminated soil through ingestion or direct contact is possible, but limited.

On-site groundwater is contaminated with CVOCs, SVOCs, and metals. Groundwater at the site in this area of Mount Kisco is not used as a potable water source. Potable water is derived from the Byram Lake Filtration Plant, which is fed by the Byram Lake Reservoir (located about 3.5 miles southeast of the site) and the Leonard Park Well Field (located about 2 miles south of the site) located in Bedford, New York. Because groundwater is not used as a potable water source, no complete exposure pathway to contaminated groundwater through ingestion or direct contact exists under current site conditions.

CVOCs are present in soil vapor below the building. Vapor intrusion is possible through preferential pathways through the foundation; however, because the building is secured and locked, no complete exposure pathway to contaminated soil vapor through inhalation exists under current site conditions.

Metals are present in sediment samples of Branch Brook at concentrations that are considered contaminated and likely to pose a risk to aquatic life. Since there are no access restrictions to the site, human exposure through ingestion of or direct contact with contaminated sediment or through ingestion of aquatic life (i.e., fish) is possible, but limited. To the best of our knowledge, Branch Brook is not used for contact recreational activities, including swimming and fishing.

In localized areas where human exposure to contaminated soil, groundwater and soil vapor is possible (i.e., during soil, soil vapor and groundwater sampling associated with site investigations when the ground surface is penetrated), the potential exposure pathways for dermal absorption, inhalation and ingestion are controlled through implementation of a HASP.

6.5.2 Construction/Remediation Conditions

Potential exposure pathways exist for dermal absorption, ingestion, and/or inhalation during construction/remediation. These exposure pathways will be avoided through the implementation of a construction health and safety plan (CHASP), community air monitoring plan (CAMP), and use of vapor and dust suppression techniques.

6.5.3 Proposed Future Conditions

Near-term future conditions include the existence of a vacant, commercial property. Without the use of engineering and institutional controls (ECs and ICs), exposures to future tenants, visitors and workers to residual contaminants are possible.

The site will be developed with the use of ECs and ICs as necessary, to control exposure to future tenants, visitors and workers to residual contamination. The following ECs and ICs are planned for the proposed development:

1. Composite cover system, including impervious surfaces
2. The site and surrounding areas will continue to obtain drinking water from existing sources, including surface water reservoirs and/or well fields, and not from groundwater, thereby preventing the risk of ingesting contaminants in groundwater.
3. Deed restrictions on use of groundwater, allowable uses of the site, and vegetable farming will be placed on the property as part of remediation.

6.6 Potential Exposure Pathways – Off-Site

Currently, no exposure pathways to on-site contamination for the public adjacent to the site exists because the site is capped with impervious surfaces and/or protective surface cover (i.e., maintained landscaped areas), groundwater is not potable, and site investigation work is performed under a HASP with required CAMP implementation.

Implementation of a CHASP and CAMP under future remediation/construction conditions will prevent the public from being exposed to soil, dust and vapors generated during construction. The following procedures will be followed:

- Air monitoring will be conducted for particulates (i.e., dust) and VOCs during all intrusive activities as part of a CAMP. Dust and/or vapor suppression techniques will be employed to limit potential for off-site migration of soil and vapors.
- Groundwater extracted during construction dewatering, if required will be treated before it is discharged to the municipal sewer system or Branch Brook under a State Pollutant Discharge Elimination System (SPDES) permit.
- Vehicle tires and undercarriages will be washed as necessary before trucks leave the site to prevent tracking material off-site.
- A soil erosion/sediment control plan will be implemented during construction to control off-site migration of soil.

CVOCs in groundwater are suspected to originate from a hydraulically upgradient, off-site source as described in Section 3.3. An evaluation of the off-site source is beyond the scope of the remedial investigation completed by the Volunteer and a determination of whether a complete exposure pathway exists for the migration of site contaminants to off-site human receptors for current, construction phase, or future conditions was not performed. Under future conditions, the site will be remediated and on-site exposure pathways will be controlled, but the source of CVOCs in groundwater will not be addressed. Complete off-site exposure pathways to human receptors may exist and, if necessary, engineering controls should be implemented by others to prevent complete exposure pathways.

6.7 Evaluation of Human Health Exposure

Based upon the CSM and the exposure evaluation above, complete exposure pathways to subsurface contamination to both on- and off-site receptors:

- Are present under current use conditions, but limited (i.e., site access is not completely restricted);
- Would be avoided under construction/remediation use conditions through implementation of a CHASP and CAMP and other construction measures (dust suppression, soil/erosion sediment control plan, etc.); and
- Would be mitigated for on-site human receptors through the use of planned IC/ECs under future use conditions.
- May exist for off-site human receptors upon completion of the on-site remedy if the off-site source of CVOCs in groundwater is not controlled and/or remediated

7.0 NATURE AND EXTENT OF CONTAMINATION

This section evaluates the nature and extent of soil, groundwater and soil vapor contamination. The nature and extent of the contamination is derived from a combination of field observations and analytical data from previous studies, the RI and SRI.

7.1 Soil Contamination

The RI and SRI characterized the historic fill layer and also defined the native soil horizon below the historic fill. The historic fill layer extends from surface grade to depths up to about 9 feet bgs and contains varying levels of SVOCs, pesticides, and metals, which are described in further detail in this section. CVOCs, including TCE, were detected in native soil at depths ranging from about 11 feet to 63 feet bgs. This section is divided into the following categories:

1. Historic fill
2. CVOC-impacted soil

7.1.1 Historic Fill

Historic fill was identified through field observations and review of analytical data indicating the presence of SVOCs, pesticides and metals from surface grade to depths up to 9 feet bgs. Historic fill is present at most boring locations across the site (including around the existing building and in the northern and eastern areas of the site), but was not observed in borings completed in the southern-central and southwestern parts of the site (LB10, LB11, LB12, LB14, LB15, LB24, and LB26). The vertical extent of historic fill was documented by field observations of the historic fill/native soil contact and one or more samples collected from the native soil interval in borings at the site.

SVOCs (including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene), pesticides (including 4,4-DDT, 4,4-DDE, and 4,4-DDT), and metals (including trivalent chromium, copper, lead, mercury, nickel and zinc) exceeded the UU SCOs in one or more soil samples collected within the historic fill layer. Benzo(a)pyrene and lead were the only contaminants that exceeded the CU SCOs. Benzo(a)pyrene exceeded the CU SCO in boring LB28 (at 3-4 feet bgs) and lead exceeded the CU SCO in boring LB23 and one of the delineation borings (LB23_N1) at depths up to 6 feet bgs. Seven delineation samples around LB23 contained characteristic hazardous lead concentrations from 0 to 8 feet bgs.

Pesticides are not considered a COC as no pesticides exceeded the CU SCOs and no pesticides were detected in groundwater.

7.1.2 CVOC-Impacted Soil

TCE was detected at concentrations above the UU SCO in soil samples from 13 borings, including LB01, LB08, LB10, LB11, LB12, LB13, LB14, LB15, LB17, LB19, LB20, LB21, and LB24 at depths ranging from about 11 feet to 63 feet bgs. TCE concentrations ranged from 0.57 mg/kg to 13 mg/kg. Although present in these borings, no on-site source of TCE was identified. The presence of TCE in these soil samples is explained by the presence of TCE in water molecules entrained in soil pore space and/or adsorbed to soil particles. No other CVOC was detected in soil above the UU SCO. TCE did not exceed the CU SCO in any soil sample.

7.2 Groundwater Contamination

The RI and SRI characterized groundwater quality at the site and identified petroleum-related VOC, CVOC, SVOC and metals contamination. This section is divided into the following categories:

1. Residual Petroleum Contamination
2. CVOC Contamination
3. SVOC and Metals Contamination

7.2.1 Residual Petroleum Contamination

Two petroleum-related VOCs, including benzene and total xylenes, marginally exceeded the NYSDEC Class GA SGVs in one groundwater sample collected from well LMW19S. No potential source area around LMW19S was identified during the SRI. No petroleum-related VOCs were detected in the three wells installed along the northern site boundary during the SRI indicating dissolved-phase petroleum constituents are not migrating off-site. The petroleum-related VOCs in LMW19S may be attributed to incidental historical onsite releases.

7.2.2 CVOC-Contamination

CVOCs, including PCE, TCE, 1,1,1-TCA and/or their breakdown products, were detected above the NYSDEC Class GA SGVs in all 21 on-site monitoring wells. The maximum concentrations of PCE, TCE and 1,1,1 TCA were 14.2 µg/L (LMW19S), 15,800 µg/L (LMW12S), and 13.1 µg/L (LMW19S), respectively.

No on-site source of CVOCs was identified by the RI and SRI. The site has two distinct groundwater systems with a zone of transitional permeability located in the central part of the site trending north-south. The groundwater at the site generally flows from southwest to northeast. The maximum concentration of TCE was detected in the southwestern (hydraulically upgradient) part of the site. CVOC concentrations to the west of the zone of transitional permeability are generally one to two orders of magnitude higher than CVOC concentrations east of the boundary. The analytical results and conceptual site model indicate the suspected source of the CVOCs is off-site and is attributed most likely to a known large quantity generator (1986 to 1999) of spent halogenated solvent waste. This facility, Toyota North, is located hydraulically upgradient of the site at 255 Kisco Avenue, Mount Kisco, NY.

7.2.3 Metals Contamination

Barium, iron, magnesium, manganese, selenium, sodium, and thallium were detected in total and/or dissolved concentrations above the NYSDEC Class GA SGV in most of the groundwater samples. These metals are characteristic of naturally-occurring groundwater conditions.

Lead was detected in total concentrations above the NYSDEC Class GA SGV in one groundwater sample (LMW19S). This concentration in groundwater at LMW19S is likely attributed to the presence of suspended solids/particles derived from historic fill.

The characteristic hazardous concentrations of lead in the vicinity of LB23 do not appear to be have impacted groundwater quality at the site.

7.3 Soil Vapor Contamination

Alcohol, ketone, petroleum, solvent-related compounds (including the PCE and TCE), and refrigerant/propellants (Freon-12) were detected in the sub-slab soil vapor sample (LSV22). The presence of TCE and TCE in soil vapor is related to the presence of these CVOCs in groundwater from an off-site source. The sub-slab soil vapor results from LSV22 were not compared to any regulatory criteria, as no standard for direct comparison of soil vapor samples currently exists in New York State. The vapor results appear to be biased low, likely a result of a shallow groundwater table.

7.4 Off-Site Surface Water and Sediment Contamination

Off-site surface water samples exhibited concentrations of one SVOC (bis[2-ethylhexyl] phthalate) and two metals (dissolved aluminum and iron) exceeding the NYSDEC Class C SGVs. The SVOC is considered a lab or sampling contaminant. The two metals are characteristic of naturally-occurring conditions. The surface water data indicates that groundwater contaminants of concern (TCE and other metals) are not migrating into Branch Brook.

Off-site sediment samples from Branch Brook exhibited concentrations of metals (including cadmium, chromium, copper, lead, nickel, and zinc) exceeding the NYSDEC Class A guidance values. All six metals exceeded the minimum NYSDEC Class B guidance value. Lead exceeded the NYSDEC Class C guidance value in the two downstream sediment samples, SED2 and SED3.

The analytical data and the spatial distribution of exceedances show that the concentrations of most metals exhibited a generaln increasing trend upstream to downstream. The highest metal concentrations appeared in the downstream sample (SED3). Potential sources of lead in sediment include, but are not limited to, the following:

1. Deposition of solids/particles from upstream point and non-point sources;
2. Deposition of solids/particles from stormwater runoff entering Branch Brook at the outfall near the northeastern corner of the site;
3. Erosion and deposition of solids/particles derived from fill material along the raised, railway embankment; and
4. Stormwater runoff from the parking lot and solids/particles from site surface soil disturbed and transported by runoff through the drainage channel east of the parking lot.

The railway corridor and embankment along the eastern bank of Branch Brook was constructed before 1890 using fill material of unknown quality/origin. The erosion, transport, and deposition of solids/particles derived from the fill material into the waterway for over 120 years is a potential, long-standing source. The outfall near the northeastern part of the site discharges stormwater collected from Kensico Drive and other, unquantified impervious and/or pervious areas surrounding the site. Solids/particles from vehicle traffic, atmospheric deposition, or other areas of exposed soil entrained in the stormwater, upon entering Branch Brook, are expected to be transported downstream by water flow and settle with increasing distance from the outfall by gravity forces and changes in water flow/velocity. An evaluation of the watershed area for Branch Brook was beyond the scope of the RI/SRI and upstream point and non-point sources could also be potential contributing sources, including additional stormwater outfalls.

No evidence of erosion in the stormwater drainage channel at the site was observed during the RI and SRI. The recent erosion observed in the drainage channel was noted after the collection of the sediment samples and appears to be a new condition, a result of heavy precipitation events during the week of June 17-21, 2019. However, the wooded area (about 40 feet wide) between the runoff channel and Branch Brook is heavily vegetated and is expected to act as a buffer zone, thwarting the migration of solids/particles in stormwater runoff from entering Branch Brook. The concentrations of metals (i.e., lead and zinc) found in both surface soil samples closest to Branch Brook and sediment samples from the stream are generally higher in sediment than surface soil suggesting other sources of metals are likely impacting the sediment of Branch Brook.

8.0 CONCLUSIONS

1. Stratigraphy: The site's stratigraphy comprises a historic fill layer of variable thickness underlain by native soil and bedrock. The historic fill consists of brown, fine-grained sand with varying amounts of fine gravel, medium and coarse sand, silt, clay, brick, concrete,

asphalt, timber, rubber, plastic, and glass and generally extends from ground surface to about 9 feet bgs. The historic fill is present at most boring locations across the site, but was not observed in borings completed in the southern-central and southwestern parts of the site. Native soil underlying the historic fill consists of an organic clay layer consisting of soft to medium-dense silt and clay or by a fine-grained sand layer with varying amounts of silt and clay. The organic clay layer (about 1.5 to 4 feet thick) was observed in only two borings. The fine-grained sand layer is present below surface cover (where historic fill was not identified) or the historic fill layer to the top of bedrock; thickness of this unit ranges from about 25 feet to 65 feet. Intermittent clay lenses (about 0.5 to 5 feet thick) were observed in this unit at depths ranging from between 2 and 50 feet bgs. Bedrock was encountered at depths ranging from 24 feet bgs at boring LB11 near the southwest corner of the site to 71 feet bgs at boring LB08 near the east-central part of the site. The bedrock is metamorphic in nature, consistent with the USGS reference map, and appears to slope from west to east.

2. <u>Hydrogeology:</u> Depth to groundwater was measured between about 0.05 feet to 5.48 feet below top of well casing with corresponding groundwater elevations from about el. 284.31 to 288.21 feet NAVD88. The groundwater elevations indicate the site has two distinct groundwater systems with a zone of transitional permeability located in the central part of the site that trends north-south. The shallow monitoring wells cluster about a head elevation of el. 285 feet NAVD88 on the eastern half of the site and about el. 287 and 288 feet NAVD88 on the western half of the site. The groundwater elevation is highest in the southwestern part of the site and groundwater flows from the southwest to the northeast toward Branch Brook.

3. <u>Historic Fill:</u> Historic fill was identified through field observations and review of analytical data indicating the presence of SVOCs, pesticides and metals from surface grade to depths up to 9 feet bgs. SVOCs, pesticides, and metals exceeded the UU SCOs in one or more soil samples collected within the historic fill layer. Benzo(a)pyrene and lead were the only contaminants that exceeded the CU SCOs. Characteristic hazardous levels of lead were identified in historic fill in one of area of the site (near boring LB23).

4. <u>CVOC-Impacted Soil, Groundwater, and Soil Vapor</u>: The CVOCs, including PCE, TCE, 1,1,1-TCA and/or their breakdown products, were detected in soil, groundwater, and soil vapor at the site and are attribute to a suspected hydraulically, upgradient off-site source. TCE was detected at concentrations (ranging from 0.57 mg/kg to 13 mg/kg) above the UU SCO in soil samples from 12 borings, at depths ranging from about 11 feet to 63 feet bgs. The presence of TCE in soil samples is attributed to the presence of TCE in water molecules entrained in soil pore space and/or adsorbed to soil particles. CVOCs, including PCE, TCE, 1,1,1-TCA and/or their breakdown products, were detected in all 21 on-site

monitoring wells above the NYSDEC Class GA SGVs. The maximum concentrations of PCE, TCE and 1,1,1 TCA were 14.2 μg/L (LMW19S), 15,800 μg/L (LMW12S), and 13.1 μg/L (LMW19S), respectively. PCE and TCE were also detected in soil vapor at low-level concentrations in the only soil vapor sample collected at the site (LSV22).

5. Residual Petroleum Impacts in Groundwater: Three petroleum-related VOCs marginally exceeded the NYSDEC Class GA SGVs in one groundwater sample collected from well LMW19S. No potential source area around LMW19S was identified. No petroleum-related VOCs were detected in the monitoring wells installed along the northern site boundary indicating dissolved-phase petroleum constituents are not migrating off-site. The petroleum-related VOCs in LMW19S may be attributed to incidental historical onsite releases.

6. Off-Site Surface Water Quality of Branch Brook: Surface water samples exhibited concentrations of one SVOC (bis[2-ethylhexyl] phthalate) and two metals (dissolved aluminum and iron) exceeding the NYSDEC Class C SGV. The SVOC is considered a lab or sampling contaminant. The two metals are characteristic of naturally-occurring conditions. The surface water data indicates that groundwater contaminants of concern (TCE and other metals) are not migrating into Branch Brook. The obligation of the Volunteer with respect to off-site investigations per DER-10 has been met and no further action is warranted.

7. Off-Site Sediment Quality in Branch Brook: Sediment samples exhibited concentrations of metals (including cadmium, chromium, copper, lead, nickel, and zinc) exceeding the minimum NYSDEC Class B guidance values. Lead exceeded the NYSDEC Class C guidance value in the two downstream sediment samples, SED2 and SED3. The analytical data and the spatial distribution of exceedances show that the concentrations of metals exhibited an increasing trend upstream to downstream. The highest metal concentrations appeared in the downstream sample (SED3). The concentrations of metals (i.e., lead and zinc) found in both surface soil samples closest to Branch Brook and sediment samples from the stream are generally higher in sediment than surface soil suggesting other sources of metals are likely impacting the sediment of Branch Brook.

8. The obligation of the Volunteer with respect to off-site investigations per DER-10 has been met and no further action is warranted, including further ecological impact assessment of sediment and biota associated with Branch Brook. The FWRIA highlighted that other sources of materials (fill material from the adjoining railroad embankment, stormwater discharges from outfalls servicing nearby commercial and industrial properties, and unidentified upstream sources) are probable sources of sediment contamination within Branch Brook sediment. A potential onsite source, along with a pathway to the Branch Brook was identified, but the source and pathway will be

eliminated as part of the proposed remedy. The Volunteer will implement a forthcoming RAWP, which will achieve relevant remedial action objectives (RAOs), including (1) preventing migration of contaminants that would result in groundwater contamination, and (2) preventing the discharge of contaminants to the adjoining watercourse. The Volunteer has fulfilled their obligations to characterize on-site impacts and completed a qualitative off-site exposure assessment and has no responsibility to implement a remedy to address off-site exposures and remediate off-site media. Furthermore, the current development plan and the Volunteer's remedy for the site will remain the same regardless of the outcome of any further offsite ecological impact assessments.

9. Sufficient analytical data were gathered during the RI and SRI to establish site-specific soil cleanup levels and to develop a remedy for the site. The remedy will be described and evaluated in the RAWP prepared in accordance with NYS BCP guidelines.

9.0 REFERENCES

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TABLES

Table 1A
Sample Summary
Remedial Investigation Report
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

No.	Location	Sample Name	Sample Depth (feet bgs) or location	Date	Sampling Rationale/AOCs Investigated	Analyses
				SOIL		
1	LB01	LB01_4-5	4-5	8/9/2018	AOC1, AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
2		LB01_29-30	29-30			NYSDEC Part 375/TCL VOCs and SVOCs
3		LB01_35-37	35-37			
4		LB01_48.5-49.5	48.5-49.5			
5		LB01_54-55	54-55			
6	LB07	LB07_7-8	7-8	8/8/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
7		LB07_18-19	18-19			
8	LB08	LB08_4-5	4-5	8/7/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
9		LB08_15.5-16.5	15.5-16.5			
10		LB08_51-52	51-52			NYSDEC Part 375/TCL VOCs and SVOCs
11		LB08_62-63	62-63	8/8/2018		
12		LB08_69-70	69-70			
13	LB09	LB09_6-7	6-7	8/10/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
14	LB10	LB10_2-3	2-3	8/20/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
15		LB10_31-32	31-32			NYSDEC Part 375/TCL VOCs and SVOCs
16		LB10_45-46	45-46			
17	LB11	LB11_4.5-5.5	4.5-5.5	8/13/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
18		LB11_11-12	11-12			NYSDEC Part 375/TCL VOCs and SVOCs
19		LB11_23-24	23-24			
20	LB12	LB12_0.5-2	0.5-2	8/15/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
21		LB12_2-3	2-3	8/14/2018		
22		LB12_19-20	19-20			
23		LB12_29-30	29-30			
24		LB12_42-43	42-43			
25	LB13	LB13_5-6	5-6	8/13/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
26		LB13_23-24	23-24			NYSDEC Part 375/TCL VOCs and SVOCs
27		LB13_29-30	29-30			
28	LB14	LB14_4-5	4-5	8/13/2018	AOC2	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
29		LB14_13-14	13-14			NYSDEC Part 375/TCL VOCs and SVOCs
30		LB14_29-30	29-30			
31	LB15	LB15_5-6	5-6	8/14/2018	AOC2, AOC3, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
32		LB15_33-34	33-34			NYSDEC Part 375/TCL VOCs and SVOCs
33		LB15_44-45	44-45			
34		LB15_53-54	53-54			
35	LB16	LB16_5-6	5-6	8/10/2018	AOC1, AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
36	LB17	LB17_22-24	22-24	8/10/2018	AOC1, AOC3	NYSDEC Part 375/TCL VOCs and SVOCs
37		LB17_43-44	43-44			
38		LB17_49-50	49-50			
39	LB19	LB19_5-6	5-6	8/14/2018	AOC2, AOC3, AOC5	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals
40		LB19_34.5-35.5	34.5-35.5			NYSDEC Part 375/TCL VOCs and SVOCs
41		LB19_44-45	44-45			
42	LB20	LB20_5-6	5-6	8/20/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
43		LB20_32.5-33.5	32.5-33.5			NYSDEC Part 375/TCL VOCs and SVOCs
44		LB20_47-48	47-48			
45	LB21	LB21_5-6	5-6	8/10/2018	AOC1, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals
46		LB21_18-19	18-19			NYSDEC Part 375/TCL VOCs and SVOCs
47	LB22	LB22_11-12	11-12	8/7/2018	AOC1, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
48	LB23	LB23_4-5	4-5	8/13/2018	AOC2, AOC3	
49		LB23_12-13	12-13		AOC2, AOC3	NYSDEC Part 375/TCL VOCs and SVOCs
50	LB24	LB24_1-2	1-2	8/10/2018	AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
51		LB24_13-14	13-14			NYSDEC Part 375/TCL VOCs and SVOCs
52	LB25	LB25_7-8	7-8	8/8/2018	AOC1, AOC2, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
53		LB25_15-16	15-16			
54	LB26	LB26_6-7	6-7	8/10/2018	AOC2, AOC3	

Table 1A
Sample Summary
Remedial Investigation Report
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

No.	Location	Sample Name	Sample Depth (feet bgs) or location	Date	Sampling Rationale/AOCs Investigated	Analyses
SOIL QA/QC						
55	DUPLICATE	SBDUP01_080818	LB25_15-16	8/8/2018	QA/QC	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
56		SBDUP02_081318	LB23_4-5	8/13/2018		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
57		SBDUP03_082018	LB10_2-3	8/20/2018		NYSDEC Part 375/TCL VOCs and SVOCs
58	EQUIPMENT BLANK	SBEB01_080718	N/A	8/7/2018		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics
59		SBEB02_080818		8/8/2018		
60		SBEB03_080918		8/9/2018		
61		SBEB04_081018		8/10/2018		
62		SBEB04_081318		8/13/2018		
63		SBEB05_081418		8/14/2018		
64		SBEB07_081518		8/15/2018		
65		SBEB08_082018		8/20/2018		
GROUNDWATER						
1	MW-1	MW-1_090518	2-12	9/5/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved), 1,4-dioxane and PFAS
2	LMW01D	LMW01D_090518	44-54	9/5/2018	AOC1, AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved)
3	MW-2	MW-2_090518	2-12	9/5/2018	AOC3	NYSDEC Part 375/TCL VOCs and SVOCs
4	MW-3	MW-3_090618	3-13	9/6/2018	AOC3	
5	MW-4	MW-4_090618	2-12	9/6/2018	AOC3	
6	MW-5	MW-5_090718	3-13	9/7/2018	AOC3	
7	MW-6	MW-6_090718	4-14	9/7/2018	AOC3	
8	LMW08S	LMW08S_090518	2-15	9/5/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved), 1,4-dioxane and PFAS
9	LMW08D	LMW08D_090518	42-47	9/5/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved)
10	LMW11	LMW11_090718	4-24	9/7/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved)
11	LMW12S	LMW12S_090618	17-22	9/6/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved), 1,4-dioxane and PFAS
12	LMW12D	LMW12D_090618	37-42	9/6/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved)
13	LMW15	LMW15_090618	31-36	9/6/2018	AOC3	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved)
14	LMW19S	LMW19S_090718	2-15	9/7/2018	AOC3, AOC5	
15	LMW19D	LMW19D_090718	32-37	9/7/2018	AOC3, AOC5	
16	LMW20S	LMW20S_090618	30-35	9/6/2018	AOC3	
17	LMW20D	LMW20D_090618	42-47	9/6/2018		
GROUNDWATER QA/QC						
1	DUPLICATE	GWDUP01_090518	MW-1_090518	9/5/2018	QA/QC	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals (total and dissolved), 1,4-dioxane and PFAS
2	MATRIX SPIKE	GWMS01_090518				
3	MATRIX SPIKE DUPLICATE	GWMSD01_090518				
4	FIELD BLANK	GWFB01_090518	N/A	9/5/2018		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals (total), 1,4-dioxane and PFAS
5	TRIP BLANK	GWTB01_090518	N/A	9/5/2018		Part 375/TCL VOCs
6		GWTB02_090618		9/6/2018		
7		GWTB03_090618		9/6/2018		
SOIL VAPOR						
1	LSV22	LSV22_081418	2 in below slab	8/14/2018	AOC4	VOCs (TO-15)

Notes:
1. Soil and groundwater samples were analyzed for New York State Department of Environmental Conservation (NYSDEC) Part 375 and Target Compound List (TCL) and Target Analyte List (TAL) compounds.
2. Monitoring wells MW-1 through MW-6 were previously installed by AECOM.
3. ft-bgs = feet below ground surface
4. QA/QC = Quality Assurance/ Quality Control
5. VOCs = Volatile organic compounds
6. SVOCs = Semivolatile organic compounds
7. PCBs = Polychlorinated biphenyls
8. PFAS = Perfluoroalkyl substances
9. N/A = Not Applicable
10. AOC = Area of Concern

NYSDEC 21-compound PFAS List
6:2 fluorotelomer sulfonate (6:2 FTS)
8:2 fluorotelomer sulfonate (8:2 FTS)
N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA).
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorobutanoic acid (PFBA)
Perfluorodecanesulfonic acid (PFDS)
Perfluorodecanoic acid (PFDA)
Perfluorododecanoic acid (PFDoA)
Perfluoroheptanesulfonic acid (PFHpS)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonic acid (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorononanoic acid (PFNA)
Perfluorooctanesulfonamide (FOSA)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA),
Perfluoropentanoic acid (PFPeA)
Perfluorotetradecanoic acid (PFTA/PFTeDA)
Perfluorotridecanoic acid (PFTriA/PFTrDA)
Perfluoroundecanoic acid (PFUA/PFUnA)

Table 1B
Sample Summary - 2019 Supplemental Remedial Investigation
Remedial Investigation Report
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

No.	Location	Sample Name	Sample Depth (feet bgs) or (inches) or location	Sample Date	Sampling Rationale	Analyses
SOIL						
1	LB18	LB18_5-6	5 to 6	5/3/2019	Investigate soil between LMW19S and MW-1 for petroleum impacts	NYSDEC Part 375/TCL VOCs, SVOCs, and 1,4-dioxane
2	LB27	LB27_3.5-4.5	3.5 to 4.5	5/2/2019	Investigate soil downgradient of LMW19S for petroleum impacts	NYSDEC Part 375/TCL VOCs, SVOCs, and 1,4-dioxane; PFAS analysis on samples collected from groundwater interface (2-5 feet below ground surface) at borings LB27 and LB28
3	LB28	LB28_3-4	3 to 4	5/2/2019	Investigate soil upgradient of LMW19S for petroleum impacts	
SURFACE SOIL						
4	SS1	SS1_0-2in	0-2 inches	5/3/2019	Surface soil samples collected at 0-2 inches and 10-12 inches below ground cover	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics In addition, 1,4-dioxane and PFAS analysis on SS1, SS3, SS5, and SS7 boring locations at both 0-2 and 10-12 inch intervals
5		SS1_10-12in	10-12 inches	5/3/2019		
6	SS2	SS2_0-2in	0-2 inches	5/3/2019		
7		SS2_10-12in	10-12 inches	5/3/2019		
8	SS3	SS3_0-2in	0-2 inches	5/3/2019		
9		SS3_10-12in	10-12 inches	5/3/2019		
10	SS4	SS4_0-2in	0-2 inches	5/3/2019		
11		SS4_10-12in	10-12 inches	5/3/2019		
12	SS5	SS5_0-2in	0-2 inches	5/3/2019		
13		SS5_10-12in	10-12 inches	5/3/2019		
14	SS6	SS6_0-2in	0-2 inches	5/3/2019		
15		SS6_10-12in	10-12 inches	5/3/2019		
16	SS7	SS7_0-2in	0-2 inches	5/3/2019		
17		SS7_10-12in	10-12 inches	5/3/2019		
SOIL - LB23 LEAD DELINEATION						
18	LB23	LB23_0-2	0 to 2	5/6/2019	Vertical delineation of lead impact at LB23	Total/TCLP Lead; PFAS analysis at 6-8-foot interval only
19		LB23_2-4	2 to 4	5/6/2019		
20		LB23_6-8	6 to 8	5/6/2019		
21		LB23_8-10	8 to 10	5/6/2019		
22	LB23_N1	LB23_N1_0-2	0 to 2	5/6/2019	5-foot step out lead delineation from LB23 to north	Total/TCLP Lead
23		LB23_N1_2-4	2 to 4	5/6/2019		
24		LB23_N1_4-6	4 to 6	5/6/2019		
25		LB23_N1_6-8	6 to 8	5/6/2019		
26	LB23_N2	LB23_N2_0-2	0 to 2	5/6/2019	10-foot step out lead delineation from LB23 to north	
27		LB23_N2_2-4	2 to 4	5/6/2019		
28		LB23_N2_4-6	4 to 6	5/6/2019		
29	LB23_E1	LB23_E1_0-2	0 to 2	5/6/2019	5-foot step out lead delineation from LB23 to east	
30		LB23_E1_2-4	2 to 4	5/6/2019		
31		LB23_E1_4-6	4 to 6	5/6/2019		
32		LB23_E1_6-8	6 to 8	5/6/2019		
33	LB23_S1	LB23_S1_0-2	0 to 2	5/6/2019	5-foot step out lead delineation from LB23 to south	
34		LB23_S1_2-4	2 to 4	5/6/2019		
35		LB23_S1_4-6	4 to 6	5/6/2019		
36		LB23_S1_6-8	6 to 8	5/6/2019		
37	LB23_S2	LB23_S2_0-2	0 to 2	5/6/2019	10-foot step out lead delineation from LB23 to south	
38		LB23_S2_2-4	2 to 4	5/6/2019		
39		LB23_S2_4-6	4 to 6	5/6/2019		
SOIL QA/QC						
40	DUPLICATE	SBDUP04_050319	SS1_10-12in	5/3/2019	QA/QC	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics, 1,4-dioxane, and PFAS
41		SBDUP05_3.5-4.5	LB27_3.5 to 4.5	5/2/2019		NYSDEC Part 375/TCL VOCs, SVOCs, 1,4-dioxane, and PFAS
42		SBDUP06_050619	LB23_0 to 2	5/6/2019		Total Lead
43	MATRIX SPIKE	SBMS01_SS5_0-2	SS5_0-2in	5/3/2019		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics, 1,4-dioxane, and PFAS
44	MATRIX SPIKE DUPLICATE	SBMSD01_SS5_0-2	SS5_0-2in	5/3/2019		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics, 1,4-dioxane, and PFAS
45	MATRIX SPIKE	SBMS02_3-4	LB28_3 to 4	5/2/2019		NYSDEC Part 375/TCL VOCs, SVOCs, 1,4-dioxane, and PFAS
46	MATRIX SPIKE DUPLICATE	SBMSD02_3-4	LB28_ 3 to 4	5/2/2019		NYSDEC Part 375/TCL VOCs, SVOCs, 1,4-dioxane, and PFAS
47	EQUIPMENT BLANK	SBEB09_050319	N/A, during sampling of one from SS1 to SS7 set	5/3/2019		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Patrt 375/TAL metals/inorganics, 1,4-dioxane, and PFAS
48		SBEB10_050219	N/A, during sampling of LB18, LB27, or LB28	5/2/2019		NYSDEC Part 375/TCL VOCs, SVOCs, 1,4-dioxane, and PFAS
49		SBEB11_050619	N/A, evaluate purity of DI water	5/6/2019		PFAS
GROUNDWATER						
1	GWG01	GWG01_050919	middle of water column	5/9/2019	Investigate potential for off-site petroleum-related contaminant migration	NYSDEC Part 375/TCL VOCs, SVOCs, 1,4-dioxane
2	GWG02	GWG02_050919		5/9/2019		
3	GWG03	GWG03_050919		5/9/2019		
SURFACE WATER AND SEDIMENT						
1	SW1	SW1_050219	Surface water	5/2/2019	Investigate surface water in stream at north boundary	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved). In addition, 1,4-dioxane and PFAS analysis on SW1, SW3, SED1 and SED3 samples.
2	SW2	SW2_050219		5/2/2019	Investigate surface water in stream east of storm water runoff channel	
3	SW3	SW3_050219		5/2/2019	Investigate surface water in stream before southern edge of site boundary	
4	SED1	SED1_0-0.5	0-0.5	5/2/2019	Stream sediment samples collected at 0-6 inches from stream bed, co-located with surface water samples	
5	SED2	SED2_0-0.5	0-0.5	5/2/2019		
6	SED3	SED3_0-0.5	0-0.5	5/2/2019		
GROUNDWATER/SURFACE WATER QA/QC						
1	DUPLICATE	SWDUP01_050219	SW3	5/2/2019	QA/QC	NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total and dissolved), 1,4-dioxane, PFAS
2	MATRIX SPIKE	SWMS01_050219	SW1	5/2/2019		
3	MATRIX SPIKE DUPLICATE	SWMSD01_050219	SW1	5/2/2019		
4	FIELD BLANK	SWFB01_050219	N/A	5/2/2019		NYSDEC Part 375/TCL VOCs, SVOCs, PCBs, pesticides, and Part 375/TAL metals/inorganics (total), 1,4-dioxane, PFAS
5	TRIP BLANK	SWTB01_050219	N/A	5/2/2019		NYSDEC Part 375/TCL VOCs
6	TRIP BLANK	TB01_050919	N/A	5/9/2019		

Notes:
1. ft-bgs = feet below ground surface
2. LB = Langan Boring
3. SS = Soil Sample
4. SED = Sediment Sample
5. LMW = Langan Monitoring Well
6. SW - Surface Water
7. GW = Groundwater
8. N/A = Not Applicable
9. QA/QC = Quality Assurance/ Quality Control
10. NYSDEC = New York State Department of Environmental Conservation
11. VOCs = Volatile organic compounds
12. SVOCs = Semivolatile organic compounds
13. PCBs = Polychlorinated biphenyls
14. TCL = Target Compound List
15. TAL = Target Analyte List
16. GWG = Groundwater Grab

NYSDEC 21-compound PFAS List
6:2 fluorotelomer sulfonate (6:2 FTS)
8:2 fluorotelomer sulfonate (8:2 FTS)
N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA).
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorobutanoic acid (PFBA)
Perfluorodecanesulfonic acid (PFDS)
Perfluorodecanoic acid (PFDA)
Perfluorododecanoic acid (PFDoA)
Perfluoroheptanesulfonic acid (PFHpS)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonic acid (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorononanoic acid (PFNA)
Perfluorooctanesulfonamide (FOSA)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA),
Perfluoropentanoic acid (PFPeA)
Perfluorotetradecanoic acid (PFTA/PFTeDA)
Perfluorotridecanoic acid (PFTriA/PFTrDA)
Perfluoroundecanoic acid (PFUA/PFUnA)

Table 2
Groundwater Elevation Summary
Remedial Investigation Report
Former Design For Leisure
41 Kensico Drive, Mount Kisco, New York
BCP ID No. C360163
Langan Project No. 190046301

Well ID	Date Well Guaged	Well Top of Casing Elevation	Well Screen Interval (ft bgs)	Total Well Depth (ft bgs)	Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88)
LMW01D	7/7/2018	290.05	44-54	54.70	1.84	288.21
MW-1	7/7/2018	289.79	2-12	11.55	5.48	284.31
MW-2	7/7/2018	288.24	2-12	11.80	3.35	284.89
MW-3	7/7/2018	290.49	3-13	12.70	5.52	284.97
MW-4	7/7/2018	288.44	4-14	11.85	3.39	285.05
MW-5	7/7/2018	290.69	3-13	11.50	4.18	286.51
MW-6	7/7/2018	290.47	4-14	13.80	4.08	286.39
LMW08S	7/7/2018	286.97	2-15	15.18	2.15	284.82
LMW08D	7/7/2018	286.69	42-47	46.50	0.05	286.64
LMW11	7/7/2018	290.62	4-24	21.25	2.93	287.69
LMW12S	7/7/2018	289.29	17-22	21.70	2.58	286.71
LMW12D	7/7/2018	289.29	37-42	44.00	1.34	287.95
LMW15	7/7/2018	289.65	31-36	34.55	2.78	286.87
LMW19S	7/7/2018	290.30	2-15	11.40	5.20	285.10
LMW19D	7/7/2018	290.15	32-37	36.50	3.55	286.60
LMW20S	7/7/2018	289.72	30-35	36.70	2.65	287.07
LMW20D	7/7/2018	289.72	42-47	47.40	1.78	287.94
GWG01	5/9/2019	289.29	2-15	16.10	3.66	285.63
GWG02	5/9/2019	289.14	2-15	16.10	3.53	285.61
GWG03	5/9/2019	289.67	2-12	12.30	3.80	285.87

Notes:

1. Well elevations and depth to water measurements are based on a survey performed by Langan on August 7, 2018 and on May 14, 2019.
2. All elevations are in reference to the North American Vertical Datum of 1988 (NAVD88).
3. Well elevations and depth to water readings were measured to a marked location at the top of each well casing.
4. ft bgs - feet below ground surface
5. BTOC - below top of casing

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI		RI		RI		RI		RI		RI		RI		RI	
Location			LB01		LB01		LB01		LB01		LB01		LB07		LB07		LB08	
Sample ID			LB01_4-5		LB01_29-30		LB01_35-37		LB01_48.5-49.5		LB01_54-55		LB07_7-8		LB07_18-19		LB08_4-5	
Laboratory ID			18H0440-01		18H0440-02		18H0440-03		18H0440-04		18H0440-05		18H0372-01		18H0372-02		18H0320-02	
Sample Date			8/9/2018		8/9/2018		8/9/2018		8/9/2018		8/9/2018		8/8/2018		8/8/2018		8/7/2018	
Sample Depth			4-5		29-30		35-37		48.5-49.5		54-55		7-8		18-19		4-5	
Volatile Organic Compounds (mg/kg)																		
1,1,2-Trichloroethane	~	~	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
1,1-Dichloroethane	0.27	240	0.0023	U	0.0045	J	0.0032	J	0.0036	J	0.0021	U	0.0028	U	0.0027	U	0.0033	U
1,1-Dichloroethene	0.33	500	0.0023	U	0.003	J	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Acetone	0.05	500	0.016		0.019		0.013		0.014		0.0094		**0.053**		0.021		0.043	
Carbon Disulfide	~	~	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Cis-1,2-Dichloroethene	0.25	500	0.0092		0.036		0.0098		0.022		0.014		0.013		0.0041	J	0.0033	U
Methyl Acetate	~	~	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.012		0.0027	U	0.0033	U
Methylene Chloride	0.05	500	0.0089	J	0.0098		0.012		0.015		0.0092		0.0095	J	0.012		0.0088	J
Tetrachloroethene (PCE)	1.3	150	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Toluene	0.7	500	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Trans-1,2-Dichloroethene	0.19	500	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.0028	U	0.0027	U	0.0033	U
Trichloroethene (TCE)	0.47	200	0.01		**8.8**	D	**4.6**	D	**2.9**	D	**1.2**	D	0.0028	U	0.0027	U	0.0033	U
Vinyl Chloride	0.02	13	0.0023	U	0.0024	U	0.0023	U	0.0032	U	0.0021	U	0.013		0.0027	U	0.0033	U
Semivolatile Organic Compounds (mg/kg)																		
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Acenaphthylene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Anthracene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Benzo(a)Anthracene	1	5.6	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Benzo(a)Pyrene	1	1	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0605	JD
Benzo(b)Fluoranthene	1	5.6	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0623	JD
Benzo(g,h,i)Perylene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Benzo(k)Fluoranthene	0.8	56	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Dibenz(a,h)Anthracene	0.33	0.56	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Dibenzofuran	7	350	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Fluoranthene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.084	JD
Fluorene	30	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Naphthalene	12	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0566	U
Pyrene	100	500	0.0561	U	0.051	U	0.0503	U	0.056	U	0.0512	U	0.0623	U	0.0453	U	0.0849	JD

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI LB08 LB08_15.5-16.5 18H0320-03 8/7/2018 15.5-16.5		RI LB08 LB08_51-52 18H0320-04 8/7/2018 51-52		RI LB08 LB08_62-63 18H0372-05 8/8/2018 62-63		RI LB08 LB08_69-70 18H0372-04 8/8/2018 69-70		RI LB09 LB09_6-7 18H0525-01 8/10/2018 6-7		RI LB10 LB10_2-3 18H0937-01 8/20/2018 2-3		RI LB10 SBDUP03_082018 18H0937-08 8/20/2018 2-3		RI LB10 LB10_31-32 18H0937-02 8/20/2018 31-32	
Volatile Organic Compounds (mg/kg)																		
1,1,2-Trichloroethane	~	~	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
1,1-Dichloroethane	0.27	240	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
1,1-Dichloroethene	0.33	500	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
Acetone	0.05	500	0.0086	U	0.017		0.0053	U	0.016		0.005	U	0.038		**0.1**	J	0.0046	U
Carbon Disulfide	~	~	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0029	J
Cis-1,2-Dichloroethene	0.25	500	0.0022	U	0.0092		0.013		0.0061		0.0025	U	0.0024	U	0.0032	UJ	0.082	
Methyl Acetate	~	~	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0038	J	0.0032	UJ	0.0023	U
Methylene Chloride	0.05	500	0.0065	J	0.013		0.0053	U	0.013		0.005	U	0.0049	U	0.0064	UJ	0.0057	J
Tetrachloroethene (PCE)	1.3	150	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0079	
Toluene	0.7	500	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
Trans-1,2-Dichloroethene	0.19	500	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
Trichloroethene (TCE)	0.47	200	0.0022	U	**0.82**	D	**0.57**	D	0.15		0.0025	U	0.0024	U	0.0032	UJ	**1.7**	D
Vinyl Chloride	0.02	13	0.0022	U	0.0022	U	0.0026	U	0.0026	U	0.0025	U	0.0024	U	0.0032	UJ	0.0023	U
Semivolatile Organic Compounds (mg/kg)																		
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Acenaphthylene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Anthracene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzo(a)Anthracene	1	5.6	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzo(a)Pyrene	1	1	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzo(b)Fluoranthene	1	5.6	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzo(g,h,i)Perylene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzo(k)Fluoranthene	0.8	56	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Dibenz(a,h)Anthracene	0.33	0.56	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Dibenzofuran	7	350	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Fluoranthene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Fluorene	30	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Naphthalene	12	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U
Pyrene	100	500	0.0492	U	0.0509	U	0.0495	U	0.051	U	0.0549	U	0.0808	U	0.0535	UJ	0.0815	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI		RI		RI		RI		RI		RI		RI		RI	
Location			LB10		LB11		LB11		LB11		LB12		LB12		LB12		LB12	
Sample ID			LB10_45-46		LB11_4.5-5.5		LB11_11-12		LB11_23-24		LB12_0.5-2		LB12_2-3		LB12_19-20		LB12_29-30	
Laboratory ID			18H0937-03		18H0594-01		18H0594-02		18H0594-03		18H0697-01		18H0655-05		18H0655-06		18H0655-07	
Sample Date			8/20/2018		8/13/2018		8/13/2018		8/13/2018		8/15/2018		8/14/2018		8/14/2018		8/14/2018	
Sample Depth			45-46		4.5-5.5		11-12		23-24		0.5-2		2-3		19-20		29-30	
Volatile Organic Compounds (mg/kg)																		
1,1,2-Trichloroethane	~	~	0.0018	U	0.0022	U	0.0039	J	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
1,1-Dichloroethane	0.27	240	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0024	J	0.0024	U
1,1-Dichloroethene	0.33	500	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0034	J	0.0024	U
Acetone	0.05	500	0.0037	U	0.017		0.031		0.044		**0.063**		0.027		0.042		0.042	
Carbon Disulfide	~	~	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
Cis-1,2-Dichloroethene	0.25	500	0.0061		0.046		0.035		0.0025	U	0.0022	U	0.0025	U	0.042		0.028	
Methyl Acetate	~	~	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	J	0.0025	U	0.0023	U	0.0024	U
Methylene Chloride	0.05	500	0.0065	J	0.0087	U	0.0091	U	0.0077	J	0.0043	U	0.0063	J	0.0046	U	0.0048	U
Tetrachloroethene (PCE)	1.3	150	0.0018	U	0.0022	U	0.0083		0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0048	
Toluene	0.7	500	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
Trans-1,2-Dichloroethene	0.19	500	0.0018	U	0.0022	U	0.0023	U	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
Trichloroethene (TCE)	0.47	200	0.052		0.35	E	**8.3**	D	0.18		0.0022	U	0.0025	U	**7.6**	D	**2.8**	D
Vinyl Chloride	0.02	13	0.0018	U	0.0022	U	0.0033	J	0.0025	U	0.0022	U	0.0025	U	0.0023	U	0.0024	U
Semivolatile Organic Compounds (mg/kg)																		
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Acenaphthylene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Anthracene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzo(a)Anthracene	1	5.6	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzo(a)Pyrene	1	1	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzo(b)Fluoranthene	1	5.6	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzo(g,h,i)Perylene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzo(k)Fluoranthene	0.8	56	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Dibenz(a,h)Anthracene	0.33	0.56	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Dibenzofuran	7	350	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Fluoranthene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Fluorene	30	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Naphthalene	12	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U
Pyrene	100	500	0.073	U	0.051	U	0.0542	U	0.0499	U	0.0455	U	0.0512	U	0.0507	U	0.0497	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI LB12 LB12_42-43 18H0655-08 8/14/2018 42-43		RI LB13 LB13_5-6 18H0594-04 8/13/2018 5-6		RI LB13 LB13_23-24 18H0594-05 8/13/2018 23-24		RI LB13 LB13_29-30 18H0594-06 8/13/2018 29-30		RI LB14 LB14_4-5 18H0594-07 8/13/2018 4-5		RI LB14 LB14_13-14 18H0594-08 8/13/2018 13-14		RI LB14 LB14_29-30 18H0594-09 8/13/2018 29-30		RI LB15 LB15_5-6 18H0655-01 8/14/2018 5-6	
Volatile Organic Compounds (mg/kg)																		
1,1,2-Trichloroethane	~	~	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
1,1-Dichloroethane	0.27	240	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
1,1-Dichloroethene	0.33	500	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0028	J	0.0022	U	0.0015	U
Acetone	0.05	500	**0.067**		**0.065**		0.021		0.0047	U	0.017		0.012		0.0099		0.013	
Carbon Disulfide	~	~	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Cis-1,2-Dichloroethene	0.25	500	0.046		0.0027	U	0.027		0.0097		0.002	U	0.029		0.013		0.0015	U
Methyl Acetate	~	~	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0024	U	0.004	J	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Methylene Chloride	0.05	500	0.0047	U	0.0057	J	0.01	U	0.0047	U	0.0082	U	0.011		0.011		0.003	U
Tetrachloroethene (PCE)	1.3	150	0.0035	J	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0066		0.0043	J	0.0015	U
Toluene	0.7	500	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Trans-1,2-Dichloroethene	0.19	500	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Trichloroethene (TCE)	0.47	200	0.32		0.0034	J	**3.7**	D	**1**	D	0.045		**9.8**	D	**2.6**	D	0.0015	U
Vinyl Chloride	0.02	13	0.0024	U	0.0027	U	0.0025	U	0.0024	U	0.002	U	0.0023	U	0.0022	U	0.0015	U
Semivolatile Organic Compounds (mg/kg)																		
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Acenaphthylene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Anthracene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzo(a)Anthracene	1	5.6	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzo(a)Pyrene	1	1	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzo(b)Fluoranthene	1	5.6	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzo(g,h,i)Perylene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzo(k)Fluoranthene	0.8	56	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Dibenz(a,h)Anthracene	0.33	0.56	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Dibenzofuran	7	350	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Fluoranthene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Fluorene	30	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Naphthalene	12	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U
Pyrene	100	500	0.0484	U	0.051	U	0.0536	U	0.0497	U	0.0524	U	0.0505	U	0.0513	U	0.0492	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI LB15 LB15_33-34 18H0655-02 8/14/2018 33-34		RI LB15 LB15_44-45 18H0655-03 8/14/2018 44-45		RI LB15 LB15_53-54 18H0655-04 8/14/2018 53-54		RI LB16 LB16_5-6 18H0525-02 8/10/2018 5-6		RI LB17 LB17_22-24 18H0525-04 8/10/2018 22-24		RI LB17 LB17_43-44 18H0525-05 8/10/2018 43-44		RI LB17 LB17_49-50 18H0525-06 8/10/2018 49-50		RI LB19 LB19_5-6 18H0655-09 8/14/2018 5-6	
Volatile Organic Compounds (mg/kg)																		
1,1,2-Trichloroethane	~	~	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
1,1-Dichloroethane	0.27	240	0.0013	U	0.0012	U	0.0018	J	0.0025	U	0.0039	J	0.0027	J	0.0025	U	0.0024	U
1,1-Dichloroethene	0.33	500	0.0013	U	0.0012	U	0.0014	J	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Acetone	0.05	500	0.027		0.0023	U	0.0096		0.04		0.0092	U	0.0089	U	0.0099	U	0.047	
Carbon Disulfide	~	~	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Cis-1,2-Dichloroethene	0.25	500	0.021		0.012		0.025		0.0025	U	0.028		0.013		0.022		0.0024	U
Methyl Acetate	~	~	0.0023	J	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0013	U	0.0012	U	0.00098	U	0.0087		0.0023	U	0.0022	U	0.0025	U	0.008	
Methylene Chloride	0.05	500	0.0026	U	0.0023	U	0.002	U	0.01		0.011		0.008	J	0.014		0.0047	U
Tetrachloroethene (PCE)	1.3	150	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Toluene	0.7	500	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Trans-1,2-Dichloroethene	0.19	500	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Trichloroethene (TCE)	0.47	200	**3.5**	D	**0.85**	D	**13**	D	0.0025	U	**10**	D	**5.5**	D	**0.74**	D	0.0024	U
Vinyl Chloride	0.02	13	0.0013	U	0.0012	U	0.00098	U	0.0025	U	0.0023	U	0.0022	U	0.0025	U	0.0024	U
Semivolatile Organic Compounds (mg/kg)																		
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Acenaphthylene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Anthracene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzo(a)Anthracene	1	5.6	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzo(a)Pyrene	1	1	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzo(b)Fluoranthene	1	5.6	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzo(g,h,i)Perylene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzo(k)Fluoranthene	0.8	56	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Dibenz(a,h)Anthracene	0.33	0.56	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Dibenzofuran	7	350	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Fluoranthene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Fluorene	30	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Naphthalene	12	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U
Pyrene	100	500	0.0509	U	0.0507	U	0.0511	U	0.0541	U	0.0525	U	0.052	U	0.0515	U	0.0535	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI LB19 LB19_34.5-35.5 18H0655-10 8/14/2018 34.5-35.5		RI LB19 LB19_44-45 18H0655-11 8/14/2018 44-45		RI LB20 LB20_5-6 18H0937-04 8/20/2018 5-6		RI LB20 LB20_32.5-33.5 18H0937-05 8/20/2018 32.5-33.5		RI LB20 LB20_47-48 18H0937-06 8/20/2018 47-48		RI LB21 LB21_5-6 18H0525-07 8/10/2018 5-6		RI LB21 LB21_18-19 18H0525-08 8/10/2018 18-19		RI LB22 LB22_11-12 18H0320-01 8/7/2018 11-12		RI LB23 LB23_4-5 18H0594-10 8/13/2018 4-5	
Volatile Organic Compounds (mg/kg)																				
1,1,2-Trichloroethane	~	~	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
1,1-Dichloroethane	0.27	240	0.0021	U	0.0024	U	0.002	U	0.0068		0.0016	U	0.0029	U	0.0035	J	0.0023	J	0.0023	U
1,1-Dichloroethene	0.33	500	0.0021	U	0.0024	U	0.002	U	0.0038	J	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
Acetone	0.05	500	0.026		**0.051**		0.032		0.025		0.022		0.025		0.0041	U	0.013		0.0045	U
Carbon Disulfide	~	~	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
Cis-1,2-Dichloroethene	0.25	500	0.008		0.015		0.0071		0.047		0.012		0.0083		0.024		0.19	J	0.0023	U
Methyl Acetate	~	~	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.011		0.0021	U	0.0022	U	0.0023	U
Methylene Chloride	0.05	500	0.0041	U	0.0049	U	0.0041	U	0.0052	U	0.0032	U	0.0057	U	0.01		0.012		0.0045	U
Tetrachloroethene (PCE)	1.3	150	0.0021	U	0.0031	J	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
Toluene	0.7	500	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0022	U	0.0023	U
Trans-1,2-Dichloroethene	0.19	500	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.0026	J	0.0023	U
Trichloroethene (TCE)	0.47	200	**2**	D	0.26		0.0023	J	**0.89**	D	0.13	J	0.0029	U	**2.5**	D	0.0025	J	0.0023	U
Vinyl Chloride	0.02	13	0.0021	U	0.0024	U	0.002	U	0.0026	U	0.0016	U	0.0029	U	0.0021	U	0.012	J	0.0023	U
Semivolatile Organic Compounds (mg/kg)																				
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	20	500	0.0501	U	0.0507	U	0.074	U	0.0889	U	0.0737	U	0.136	D	0.0513	U	0.0502	U	0.0739	U
Acenaphthylene	100	500	0.0501	U	0.0507	U	0.147	JD	0.0889	U	0.0737	U	0.0535	U	0.0513	U	0.0502	U	0.0739	U
Anthracene	100	500	0.0501	U	0.0507	U	0.181	D	0.0889	U	0.0737	U	0.194	D	0.0513	U	0.0502	U	0.0739	U
Benzo(a)Anthracene	1	5.6	0.0501	U	0.0507	U	0.523	D	0.0889	U	0.0737	U	0.297	D	0.0513	U	0.0502	U	0.121	JD
Benzo(a)Pyrene	1	1	0.0501	U	0.0507	U	0.609	D	0.0889	U	0.0737	U	0.24	D	0.0513	U	0.0502	U	0.126	JD
Benzo(b)Fluoranthene	1	5.6	0.0501	U	0.0507	U	0.618	D	0.0889	U	0.0737	U	0.206	D	0.0513	U	0.0502	U	0.112	JD
Benzo(g,h,i)Perylene	100	500	0.0501	U	0.0507	U	0.399	D	0.0889	U	0.0737	U	0.129	D	0.0513	U	0.0502	U	0.0813	JD
Benzo(k)Fluoranthene	0.8	56	0.0501	U	0.0507	U	0.48	D	0.0889	U	0.0737	U	0.216	D	0.0513	U	0.0502	U	0.086	JD
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	1	56	0.0501	U	0.0507	U	0.51	D	0.0889	U	0.0737	U	0.347	D	0.0513	U	0.0502	U	0.154	D
Dibenz(a,h)Anthracene	0.33	0.56	0.0501	U	0.0507	U	0.0991	JD	0.0889	U	0.0737	U	0.0535	U	0.0513	U	0.0502	U	0.0739	U
Dibenzofuran	7	350	0.0501	U	0.0507	U	0.074	U	0.0889	U	0.0737	U	0.192	D	0.0513	U	0.0502	U	0.0739	U
Fluoranthene	100	500	0.0501	U	0.0507	U	1.04	D	0.0889	U	0.0737	U	0.775	D	0.0513	U	0.0502	U	0.213	D
Fluorene	30	500	0.0501	U	0.0507	U	0.0968	JD	0.0889	U	0.0737	U	0.241	D	0.0513	U	0.0502	U	0.0739	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0501	U	0.0507	U	0.379	D	0.0889	U	0.0737	U	0.0938	JD	0.0513	U	0.0502	U	0.0739	U
Naphthalene	12	500	0.0501	U	0.0507	U	0.074	U	0.0889	U	0.0737	U	0.237	D	0.0513	U	0.0502	U	0.0739	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	100	500	0.0501	U	0.0507	U	0.63	D	0.0889	U	0.0737	U	1.27	D	0.0513	U	0.0502	U	0.166	D
Pyrene	100	500	0.0501	U	0.0507	U	0.774	D	0.0889	U	0.0737	U	0.572	D	0.0513	U	0.0502	U	0.221	D

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Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI		RI		RI		RI		RI		RI		RI		RI		SRI	
Location			LB23		LB23		LB24		LB24		LB25		LB25		LB25		LB26		LB18	
Sample ID			SBDUP02_081318		LB23_12-13		LB24_1-2		LB24_13-14		LB25_7-8		LB25_15-16		SBDUP01_080818		LB26_6-7		LB18_5-6	
Laboratory ID			18H0594-12		18H0594-11		18H0525-09		18H0525-11		18H0372-03		18H0372-07		18H0372-08		18H0525-10		19E0189-15	
Sample Date			8/13/2018		8/13/2018		8/10/2018		8/10/2018		8/8/2018		8/8/2018		8/8/2018		8/10/2018		5/3/2019	
Sample Depth			4-5		12-13		1-2		13-14		7-8		15-16		15-16		6-7		5-6	
Volatile Organic Compounds (mg/kg)																				
1,1,2-Trichloroethane	~	~	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
1,1-Dichloroethane	0.27	240	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
1,1-Dichloroethene	0.33	500	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Acetone	0.05	500	0.0043	U	0.0043	U	0.026		0.044		**0.15**		0.015		0.028		0.024		0.05	
Carbon Disulfide	~	~	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Cis-1,2-Dichloroethene	0.25	500	0.0022	U	0.012		0.0022	U	0.0094		0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Methyl Acetate	~	~	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.004	
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.068		0.0019	U	0.0023	U	0.002	U	0.0081	
Methylene Chloride	0.05	500	0.0087	U	0.0043	U	0.0094		0.012		0.014	J	0.014		0.0085	J	0.011		0.0046	J
Tetrachloroethene (PCE)	1.3	150	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Toluene	0.7	500	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0019	J
Trans-1,2-Dichloroethene	0.19	500	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Trichloroethene (TCE)	0.47	200	0.0022	U	0.065		0.0022	U	**2.4**	D	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Vinyl Chloride	0.02	13	0.0022	U	0.0022	U	0.0022	U	0.0022	U	0.0043	U	0.0019	U	0.0023	U	0.002	U	0.0017	U
Semivolatile Organic Compounds (mg/kg)																				
2-Methylnaphthalene	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Acenaphthene	20	500	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Acenaphthylene	100	500	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Anthracene	100	500	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzo(a)Anthracene	1	5.6	0.111	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzo(a)Pyrene	1	1	0.129	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzo(b)Fluoranthene	1	5.6	0.0838	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzo(g,h,i)Perylene	100	500	0.0931	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzo(k)Fluoranthene	0.8	56	0.099	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Benzoic Acid	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Benzyl Butyl Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Bis(2-Ethylhexyl) Phthalate	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Carbazole	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Chrysene	1	56	0.102	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Dibenz(a,h)Anthracene	0.33	0.56	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Dibenzofuran	7	350	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Fluoranthene	100	500	0.175	D	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0729	JD
Fluorene	30	500	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.0768	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
Naphthalene	12	500	0.073	U	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0508	U
n-Nitrosodi-N-Propylamine	~	~	NA		NA		NA		NA		NA		NA		NA		NA		0.0508	U
Phenanthrene	100	500	0.133	JD	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.0511	JD
Pyrene	100	500	0.161	D	0.0767	U	0.0497	U	0.0511	U	0.0651	U	0.0483	U	0.0512	U	0.0501	U	0.064	JD

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	SRI		SRI		SRI		SRI		SRI		SRI		SRI		SRI		SRI	
Location			LB27		LB27		LB28		SS1		SS1		SS1		SS2		SS2		SS3	
Sample ID			LB27_3.5-4.5		SBDUP05_3.5-4.5		LB28_3-4		SS1_0-2IN		SS1_10-12IN		SBDUP04_050319		SS2_0-2IN		SS2_10-12IN		SS3_0-2IN	
Laboratory ID			19E0157-01		19E0157-03		19E0157-02		19E0189-01		19E0189-02		19E0189-20		19E0189-03		19E0189-04		19E0189-05	
Sample Date			5/2/2019		5/2/2019		5/2/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019	
Sample Depth			3.5-4.5		3.5-4.5		3-4		0-2		10-12		10-12		0-2		10-12		0-2	
Volatile Organic Compounds (mg/kg)																				
1,1,2-Trichloroethane	~	~	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
1,1-Dichloroethane	0.27	240	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
1,1-Dichloroethene	0.33	500	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Acetone	0.05	500	0.016		0.016		**0.065**		0.01		0.0078	J	0.017		0.0085	J	0.0041	J	0.0045	J
Carbon Disulfide	~	~	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Cis-1,2-Dichloroethene	0.25	500	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Methyl Acetate	~	~	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0021	U	0.002	U	0.014		0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Methylene Chloride	0.05	500	0.0043	U	0.0041	U	0.0089	J	0.0043	U	0.0072	J	0.0074	J	0.0044	U	0.0026	U	0.0028	U
Tetrachloroethene (PCE)	1.3	150	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Toluene	0.7	500	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Trans-1,2-Dichloroethene	0.19	500	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Trichloroethene (TCE)	0.47	200	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Vinyl Chloride	0.02	13	0.0021	U	0.002	U	0.0025	U	0.0022	U	0.0031	U	0.0019	U	0.0022	U	0.0013	U	0.0014	U
Semivolatile Organic Compounds (mg/kg)																				
2-Methylnaphthalene	~	~	0.0472	U	0.0466	U	0.0996	JD	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Acenaphthene	20	500	0.0472	U	0.0466	U	0.694	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Acenaphthylene	100	500	0.0472	U	0.0466	U	0.0692	JD	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0575	JD
Anthracene	100	500	0.079	JD	0.0466	U	1.37	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.112	D
Benzo(a)Anthracene	1	5.6	0.178	D	0.0787	JD	**3.29**	D	0.0728	JD	0.0512	U	0.0508	U	0.0931	JD	0.0914	JD	0.461	D
Benzo(a)Pyrene	1	1	0.169	D	0.078	JD	**3.06**	D	0.0954	JD	0.0512	U	0.0508	U	0.103	D	0.0929	JD	0.547	D
Benzo(b)Fluoranthene	1	5.6	0.132	D	0.0624	JD	**2.81**	D	0.0988	JD	0.0512	U	0.0508	U	0.0968	D	0.0842	JD	0.558	D
Benzo(g,h,i)Perylene	100	500	0.103	D	0.0498	JD	1.65	D	0.0628	JD	0.0512	U	0.0508	U	0.0578	JD	0.0564	JD	0.378	D
Benzo(k)Fluoranthene	0.8	56	0.121	D	0.0557	JD	**2.13**	D	0.0779	JD	0.0512	U	0.0508	U	0.0953	D	0.0786	JD	0.483	D
Benzoic Acid	~	~	0.0472	U	0.0466	U	0.0516	U	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0707	JD
Benzyl Butyl Phthalate	~	~	0.0472	U	0.0466	U	0.0516	U	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.16	D
Bis(2-Ethylhexyl) Phthalate	~	~	0.0472	U	0.0466	U	0.0516	U	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.135	D
Carbazole	~	~	0.0472	U	0.0466	U	0.66	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Chrysene	1	56	0.145	D	0.0646	JD	**2.88**	D	0.0846	JD	0.0512	U	0.0508	U	0.0938	JD	0.0771	JD	0.528	D
Dibenz(a,h)Anthracene	0.33	0.56	0.0472	U	0.0466	U	**0.466**	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.104	D
Dibenzofuran	7	350	0.0472	U	0.0466	U	0.259	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Fluoranthene	100	500	0.334	D	0.147	D	6.76	D	0.152	D	0.0512	U	0.0508	U	0.214	D	0.16	D	1.19	D
Fluorene	30	500	0.0472	U	0.0466	U	0.569	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.129	D	0.0631	JD	**2.15**	D	0.072	JD	0.0512	U	0.0508	U	0.0803	JD	0.0739	JD	0.45	D
Naphthalene	12	500	0.0472	U	0.0466	U	0.155	D	0.0525	U	0.0512	U	0.0508	U	0.0471	U	0.0498	U	0.0515	U
n-Nitrosodi-N-Propylamine	~	~	0.0472	U	0.0466	U	0.0516	U	0.0525	U	0.143	D	0.0508	U	0.0471	U	0.0498	U	0.0515	U
Phenanthrene	100	500	0.279	D	0.128	D	4.89	D	0.0525	U	0.0512	U	0.0508	U	0.11	D	0.0498	U	0.42	D
Pyrene	100	500	0.289	D	0.137	D	5.46	D	0.108	D	0.0512	U	0.0508	U	0.149	D	0.107	D	0.779	D

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	SRI		SRI		SRI		SRI		SRI		SRI		SRI		SRI		SRI	
Location			SS3		SS4		SS4		SS5		SS5		SS6		SS6		SS7		SS7	
Sample ID			SS3_10-12IN		SS4_0-2IN		SS4_10-12IN		SS5_0-2IN		SS5_10-12IN		SS6_0-2IN		SS6_10-12IN		SS7_0-2IN		SS7_10-12IN	
Laboratory ID			19E0189-06		19E0189-07		19E0189-08		19E0189-09		19E0189-10		19E0189-11		19E0189-12		19E0189-13		19E0189-14	
Sample Date			5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019		5/3/2019	
Sample Depth			10-12		0-2		10-12		0-2		10-12		0-2		10-12		0-2		10-12	
Volatile Organic Compounds (mg/kg)																				
1,1,2-Trichloroethane	~	~	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
1,1-Dichloroethane	0.27	240	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
1,1-Dichloroethene	0.33	500	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Acetone	0.05	500	0.0083	J	0.0051	U	0.013		0.0072	U	0.0091		0.015		0.0049		0.005	U	0.0059	J
Carbon Disulfide	~	~	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Cis-1,2-Dichloroethene	0.25	500	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Methyl Acetate	~	~	0.0025	U	0.0025	U	0.0072		0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Methylene Chloride	0.05	500	0.005	U	0.0051	U	0.0044	U	0.0085	J	0.0067	J	0.0056	U	0.0017	U	0.0051	J	0.0046	U
Tetrachloroethene (PCE)	1.3	150	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Toluene	0.7	500	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Trans-1,2-Dichloroethene	0.19	500	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Trichloroethene (TCE)	0.47	200	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Vinyl Chloride	0.02	13	0.0025	U	0.0025	U	0.0022	U	0.0036	U	0.0021	U	0.0028	U	0.00086	U	0.0025	U	0.0023	U
Semivolatile Organic Compounds (mg/kg)																				
2-Methylnaphthalene	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Acenaphthene	20	500	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Acenaphthylene	100	500	0.0502	U	0.0471	U	0.0479	JD	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Anthracene	100	500	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Benzo(a)Anthracene	1	5.6	0.126	D	0.104	D	0.0921	D	0.0952	JD	0.0724	JD	0.108	D	0.0463	U	0.194	D	0.0445	U
Benzo(a)Pyrene	1	1	0.13	D	0.128	D	0.136	D	0.151	D	0.0961	JD	0.12	D	0.0463	U	0.238	D	0.0445	U
Benzo(b)Fluoranthene	1	5.6	0.126	D	0.122	D	0.114	D	0.126	D	0.0874	JD	0.0955	JD	0.0463	U	0.247	D	0.0445	U
Benzo(g,h,i)Perylene	100	500	0.092	JD	0.0863	JD	0.0841	JD	0.117	D	0.063	JD	0.074	JD	0.0463	U	0.152	D	0.0445	U
Benzo(k)Fluoranthene	0.8	56	0.12	D	0.107	D	0.112	D	0.112	D	0.089	JD	0.0878	JD	0.0463	U	0.197	D	0.0445	U
Benzoic Acid	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Benzyl Butyl Phthalate	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Bis(2-Ethylhexyl) Phthalate	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.062	JD	0.0445	U
Carbazole	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Chrysene	1	56	0.124	D	0.121	D	0.117	D	0.104	D	0.0937	JD	0.116	D	0.0463	U	0.218	D	0.0445	U
Dibenz(a,h)Anthracene	0.33	0.56	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0571	JD	0.0445	U
Dibenzofuran	7	350	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Fluoranthene	100	500	0.262	D	0.246	D	0.268	D	0.181	D	0.139	D	0.249	D	0.0463	U	0.363	D	0.0445	U
Fluorene	30	500	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Indeno(1,2,3-c,d)Pyrene	0.5	5.6	0.108	D	0.104	D	0.122	D	0.112	D	0.0835	JD	0.0998	JD	0.0463	U	0.149	D	0.0445	U
Naphthalene	12	500	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
n-Nitrosodi-N-Propylamine	~	~	0.0502	U	0.0471	U	0.0455	U	0.0489	U	0.0494	U	0.0539	U	0.0463	U	0.0511	U	0.0445	U
Phenanthrene	100	500	0.118	D	0.0773	JD	0.156	D	0.0687	JD	0.0494	U	0.174	D	0.0463	U	0.105	D	0.0445	U
Pyrene	100	500	0.188	D	0.158	D	0.17	D	0.128	D	0.11	D	0.206	D	0.0463	U	0.343	D	0.0445	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commcercial SCOs are shaded.

Table 3A
Remedial Investigation
Soil Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Unrestricted Use SCOs are bolded.
4. Analytes detected with concentrations above Restricted Use Commercial SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample SBDUP01_080818 is a duplicate sample of LB25_15-16; sample SBDUP02_081318 is a duplicate sample of LB23_4-5; sample SBDUP03_082018 is a duplicate sample of LB10_2-3; sample SBDUP04_050319 is a duplicate sample of SS1_10-12IN; and sample SBDUP05_3.5-4.5 is a duplicate sample of LB27_3.5-4.5.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. NA = Not analyzed

Qualifiers:

D = The concentration reported is a result of a diluted sample.
E = The result is estimated and cannot be accurately reported due to levels encountered or interferences.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 3B
Remedial Investigation
Soil Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
Location			LB01	LB07	LB07	LB08	LB08	LB08	LB09	LB10	LB11	LB12	LB12
Sample ID			LB01_4-5	LB07_7-8	LB07_18-19	LB08_4-5	LB08_15.5-16.5	LB08_51-52	LB09_6-7	LB10_2-3	LB11_4.5-5.5	LB12_0.5-2	LB12_2-3
Laboratory ID			18H0440-01	18H0372-01	18H0372-02	18H0320-02	18H0320-03	18H0320-04	18H0525-01	18H0937-01	18H0594-01	18H0697-01	18H0655-05
Sample Date			8/9/2018	8/8/2018	8/8/2018	8/7/2018	8/7/2018	8/7/2018	8/10/2018	8/20/2018	8/13/2018	8/15/2018	8/14/2018
Sample Depth			4-5	7-8	18-19	4-5	15.5-16.5	51-52	6-7	2-3	4.5-5.5	0.5-2	2-3
Pesticides (mg/kg)													
4,4'-DDD	0.0033	92	0.00164 U	0.00165 U	0.00164 U	0.00165 U	0.00164 U	0.00164 U	0.00165 U	0.00248 U	0.00165 U	0.00165 U	0.00165 U
4,4'-DDE	0.0033	62	0.00164 U	0.00165 U	0.00164 U	0.00165 U	0.00164 U	0.00164 U	0.00165 U	0.00248 U	0.00165 U	0.00165 U	0.00165 U
4,4'-DDT	0.0033	47	0.00164 U	0.00165 U	0.00164 U	0.00165 U	0.00164 U	0.00164 U	0.00165 U	0.00248 U	0.00165 U	**0.00413** D	0.00165 U
Alpha Chlordane	0.094	24	0.00164 U	0.00165 U	0.00164 U	0.00165 U	0.00164 U	0.00164 U	0.00165 U	0.00248 U	0.00165 U	0.00165 U	0.00165 U
Polychlorinated Biphenyls (mg/kg)	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	9.26 J	5.29	3.39	3.87	5.44	1.22 U	2.33 U	2.94 J	2.27	3.13	2.36
Barium	350	400	204	217	40.5	275	45.2	100	96.9	48.2	63	73.4	71.8
Beryllium	7.2	590	0.748 J	0.843	0.108 U	0.135 U	0.118 U	0.122 U	0.132 U	0.129 U	0.122 U	0.109 U	0.123 U
Cadmium	2.5	9.3	0.402 U	0.447 U	0.325 U	0.48	0.354 U	0.365 U	0.396 U	0.387 U	0.366 U	0.328 U	0.368 U
Calcium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Total	~	~	27.9	44.2	10.7	47.4	11.9	22.4	34.5	24.7	17.8	18.6	25.2
Chromium, Trivalent	30	1,500	27.9	**44.2**	10.7	**47.4**	11.9	22.4	26.2	24.7	17.8	18.6	25.2
Cobalt	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	270	5.9	20.1	12.5	**132**	11.9	18.9	28.2	25.3	22.4	43.7	23.2
Iron	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	1,000	**92.1**	17.4	1.89	**666**	2.47 J	2.75 J	9.83	3.34	3.93 J	**155**	6.16
Magnesium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	115	130	160	372	153	241	213	240	334	907	400
Mercury	0.18	2.8	0.0781	**0.251**	0.0325 U	0.117	0.0354 U	0.0365 U	0.0396 U	0.0387 U	0.0366 U	0.0642	0.0368 U
Nickel	30	310	17.4 J	18	10.6	**34.1**	9.95	16.5	24.4	20.2	16.5	22.5	22.2
Potassium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	32.6 J	32.6	20	**116**	22.7	31.7	37.9	37.6	38.2	82.4	45.8

Notes provided on Page 5.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.

Table 3B
Remedial Investigation
Soil Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI LB12 LB12_19-20 18H0655-06 8/14/2018 19-20	RI LB12 LB12_29-30 18H0655-07 8/14/2018 29-30	RI LB12 LB12_42-43 18H0655-08 8/14/2018 42-43	RI LB13 LB13_5-6 18H0594-04 8/13/2018 5-6	RI LB14 LB14_4-5 18H0594-07 8/13/2018 4-5	RI LB15 LB15_5-6 18H0655-01 8/14/2018 5-6	RI LB16 LB16_5-6 18H0525-02 8/10/2018 5-6	RI LB19 LB19_5-6 18H0655-09 8/14/2018 5-6	RI LB20 LB20_5-6 18H0937-04 8/20/2018 5-6	RI LB21 LB21_5-6 18H0525-07 8/10/2018 5-6	RI LB22 LB22_11-12 18H0320-01 8/7/2018 11-12
Pesticides (mg/kg)													
4,4'-DDD	0.0033	92	0.00165 U	0.00165 U	0.00165 U	0.00165 U	0.00164 U	0.00165 U	0.00165 U	0.00164 U	0.00248 U	**0.00655** J	0.00165 U
4,4'-DDE	0.0033	62	0.00165 U	0.00165 U	0.00165 U	0.00165 U	0.00164 U	0.00165 U	0.00165 U	0.00164 U	0.00248 U	**0.00493** J	0.00165 U
4,4'-DDT	0.0033	47	0.00165 U	0.00165 U	0.00165 U	0.00165 U	0.00164 U	0.00165 U	0.00165 U	0.00164 U	**0.00555** D	**0.00577** J	0.00165 U
Alpha Chlordane	0.094	24	0.00165 U	0.00165 U	0.00165 U	0.00165 U	0.00164 U	0.00165 U	0.00165 U	0.00164 U	0.00982 D	0.00164 UJ	0.00165 U
Polychlorinated Biphenyls (mg/kg)	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	1.83	1.19 U	1.16 U	3.87	4.12	2.92	4.6 U	9.7	6.19 J	1.28 UJ	2.21
Barium	350	400	78.4	74.7	78.9	64.1	66.3	47.8	80.1	100	96.6	71	60.7
Beryllium	7.2	590	0.122 U	0.119 U	0.116 U	0.122 U	0.126 U	0.118 U	0.13 U	0.128 U	0.118 U	0.128 U	0.12 U
Cadmium	2.5	9.3	0.365 U	0.358 U	0.348 U	0.367 U	0.377 U	0.353 U	0.389 U	0.384 U	0.354 U	0.384 U	0.361 U
Calcium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Total	~	~	15.6	16.1	16.5	19.6	22.6	17.3	20.6	34.9	16.5	10.2	16.9
Chromium, Trivalent	30	1,500	15.6	16.1	16.5	19.6	22.6	17.3	15.9	**34.9**	16.5	7.94	16.9
Cobalt	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	270	19.5	17.1	16.9	22.8	26.1	12.2	9.94	**83.2**	42.1	12.1	21
Iron	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	1,000	5.56	4.02	3.56	8.23 J	6.58 J	6.48	9.77	**163**	**710**	**838**	6.12
Magnesium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	335	252	201	232	363	142	205	391	187	64.2	152
Mercury	0.18	2.8	0.0365 U	0.0358 U	0.0348 U	0.0374	0.0377 U	0.0353 U	0.0389 U	0.0384 U	**0.204**	0.0384 U	0.0361 U
Nickel	30	310	15.7	14.4	13.5	20.1	21.4	17	14.7	24	11.1	9.51	15.1
Potassium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	37.2	29.7	35.1	49.2 J	48.7	33.5	31.9	107	79.3	**197**	37.2

Notes provided on Page 5.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.

Table 3B
Remedial Investigation
Soil Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	RI	RI	RI	RI	RI	RI	RI	SRI	SRI	SRI	SRI
Location			LB23	LB23	LB24	LB25	LB25	LB25	LB26	SS1	SS1	SS1	SS2
Sample ID			LB23_4-5	SBDUP02_081318	LB24_1-2	LB25_7-8	LB25_15-16	SBDUP01_080818	LB26_6-7	SS1_0-2IN	SS1_10-12IN	SBDUP04_050319	SS2_0-2IN
Laboratory ID			18H0594-10	18H0594-12	18H0525-09	18H0372-03	18H0372-07	18H0372-08	18H0525-10	19E0189-01	19E0189-02	19E0189-20	19E0189-03
Sample Date			8/13/2018	8/13/2018	8/10/2018	8/8/2018	8/8/2018	8/8/2018	8/10/2018	5/3/2019	5/3/2019	5/3/2019	5/3/2019
Sample Depth			4-5	4-5	1-2	7-8	15-16	15-16	6-7	0-2	10-12	10-12	0-2
Pesticides (mg/kg)													
4,4'-DDD	0.0033	92	0.00164 U	0.00165 U	0.00165 U	0.00164 UJ	0.00164 U	0.00165 U	0.00248 U	0.00207 U	0.00203 U	0.00201 U	0.00185 U
4,4'-DDE	0.0033	62	0.00164 U	0.00165 U	0.00165 U	0.00164 UJ	0.00164 U	0.00165 U	0.00248 U	0.00207 U	0.00203 U	0.00201 U	0.00185 U
4,4'-DDT	0.0033	47	0.0029 D	0.00165 U	0.00165 U	0.00164 UJ	0.00164 U	0.00165 U	0.00248 U	0.00207 U	0.00203 U	0.00201 U	0.00185 U
Alpha Chlordane	0.094	24	0.00164 U	0.00165 U	0.00165 U	0.00164 UJ	0.00164 U	0.00165 U	0.00248 U	0.00207 U	0.00203 U	0.00201 U	0.00185 U
Polychlorinated Biphenyls (mg/kg)	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	~	~	NA	NA	NA	NA	NA	NA	NA	11200	14000	10600	10500
Arsenic	13	16	4.49	4.11	2.71 U	5.45	10.8 J	5.9 J	1.2 UJ	4.27	3.63	3.38	4.03
Barium	350	400	116	79.8	52.3	254	53	87	58.2	78.1	55	63.6	70.2
Beryllium	7.2	590	0.118 U	0.116 U	0.119 U	0.54	0.116 U	0.123 U	0.12 U	0.063 U	0.062 U	0.061 U	0.056 U
Cadmium	2.5	9.3	0.36	0.349 U	0.358 U	0.496	0.348 U	0.368 U	0.361 U	0.407	0.37 U	0.367 U	0.339 U
Calcium	~	~	NA	NA	NA	NA	NA	NA	NA	2370	3530	4010	6260
Chromium, Total	~	~	22.9	18	18.6	47.6	31.4 J	18.1 J	11.2	19.5	20.8	17.7	16.5
Chromium, Trivalent	30	1,500	22.9	18	15.6	**47.6**	**31.4** J	18.1 J	9.31	19.5	20.8	17.7	16.5
Cobalt	~	~	NA	NA	NA	NA	NA	NA	NA	9.57	11	9.05	9.36
Copper	50	270	**121** J	32.8 J	22.3	13.8	9.79 J	23.5 J	8.43	42.6	25.8	29.3	33.4
Iron	~	~	NA	NA	NA	NA	NA	NA	NA	19500	22800	17000	18500
Lead	63	1,000	**2880** J	**3690** J	4.92	**350**	0.58 U	4.1	2.11	**119**	10.3	56.4	**113**
Magnesium	~	~	NA	NA	NA	NA	NA	NA	NA	4060	5550	4960	4730
Manganese	1,600	10,000	385	300	228	177	137	215	87.1	379	274	311	606
Mercury	0.18	2.8	0.119	0.079	0.0358 U	**0.181**	0.0348 U	0.0368 U	0.046	0.104	0.037 U	0.0367 U	**0.214**
Nickel	30	310	20.9	18.9	17	21.2	15.1	17.7	7.84	18.5	19.7	16.8	16.7
Potassium	~	~	NA	NA	NA	NA	NA	NA	NA	1380 B	1380 B	1230 B	1260 B
Sodium	~	~	NA	NA	NA	NA	NA	NA	NA	84.4	132	99.7	73.1
Vanadium	~	~	NA	NA	NA	NA	NA	NA	NA	27.7	27.7	24	24.8
Zinc	109	10,000	107	60.8	36.2	**116**	19.1 J	36.6 J	25.5	77.1	44	50.7	66.4

Notes provided on Page 5.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.

Table 3B
Remedial Investigation
Soil Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	SRI SS2 SS2_10-12IN 19E0189-04 5/3/2019 10-12	SRI SS3 SS3_0-2IN 19E0189-05 5/3/2019 0-2	SRI SS3 SS3_10-12IN 19E0189-06 5/3/2019 10-12	SRI SS4 SS4_0-2IN 19E0189-07 5/3/2019 0-2	SRI SS4 SS4_10-12IN 19E0189-08 5/3/2019 10-12	SRI SS5 SS5_0-2IN 19E0189-09 5/3/2019 0-2	SRI SS5 SS5_10-12IN 19E0189-10 5/3/2019 10-12	SRI SS6 SS6_0-2IN 19E0189-11 5/3/2019 0-2	SRI SS6 SS6_10-12IN 19E0189-12 5/3/2019 10-12	SRI SS7 SS7_0-2IN 19E0189-13 5/3/2019 0-2	SRI SS7 SS7_10-12IN 19E0189-14 5/3/2019 10-12
Pesticides (mg/kg)													
4,4'-DDD	0.0033	92	0.00195 U	0.00203 U	0.00197 U	0.00186 U	0.00181 U	0.00193 U	0.00194 U	0.00214 U	0.00183 U	0.00202 U	0.00176 U
4,4'-DDE	0.0033	62	0.00195 U	0.00203 U	0.00197 U	0.00186 U	0.00181 U	0.00193 U	0.00194 U	0.00214 U	0.00183 U	0.00202 U	0.00176 U
4,4'-DDT	0.0033	47	0.00195 U	0.00203 U	0.00197 U	0.00186 U	0.00181 U	0.00193 U	0.00194 U	0.00214 U	0.00183 U	**0.00408** D	0.00176 U
Alpha Chlordane	0.094	24	0.00195 U	0.00203 U	0.00197 U	0.00186 U	0.00181 U	0.00193 U	0.00194 U	0.00214 U	0.00183 U	0.00202 U	0.00176 U
Polychlorinated Biphenyls (mg/kg)	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	~	~	12000	11800	13200	11000	11800	10100	8800	12500	15000	14900	8150
Arsenic	13	16	4.25	4.19	3.38	2.91	3.16	6.81	3.72	2.66	4	3.84	2.27
Barium	350	400	74.6	76.4	93.3	79.3	83	86.6	74.4	88	119	120	86.9
Beryllium	7.2	590	0.06 U	0.062 U	0.06 U	0.057 U	0.055 U	0.059 U	0.059 U	0.065 U	0.056 U	0.061 U	0.054 U
Cadmium	2.5	9.3	0.359 U	0.371 U	0.379	0.34 U	0.331 U	0.438	0.356 U	0.411	0.367	0.909	0.323 U
Calcium	~	~	3900	2750	2380	2130	2240	10700	4520	2280	2360	8280	1680
Chromium, Total	~	~	20	25.1	22	19.4	22.5	21.2	18.5	23.9	35.4	30.4	19.4
Chromium, Trivalent	30	1,500	20	25.1	22	19.4	22.5	21.2	18.5	23.9	**35.4**	**30.4**	19.4
Cobalt	~	~	10.6	9.82	10.6	9	10.4	9.1	8.13	10.9	12.4	12.4	8.15
Copper	50	270	37.2	37.2	40.2	22.6	21.9	41.8	38.7	35.3	26.1	48	22
Iron	~	~	20300	19000	20500	17000	19200	17200	14700	18500	20900	22400	13100
Lead	63	1,000	**102**	**144**	**245**	**65.2**	9.51	**69.9**	**63.9**	**101**	35.2	**132**	5.26
Magnesium	~	~	5170	4700	4730	4590	5420	7710	4350	4590	5250	9960	3490
Manganese	1,600	10,000	400	426	441	321	446	252	228	344	353	361	242
Mercury	0.18	2.8	**0.355**	0.0906	0.0946	0.0378	0.0331 U	**0.217**	**0.192**	0.0716	0.0334 U	0.134	0.0323 U
Nickel	30	310	19.2	19.4	19.8	17.6	20.2	18.1	16	19.5	25.8	23.6	18.3
Potassium	~	~	1410 B	1970 B	1740 B	2250 B	2400 B	2260 B	1810 B	1620 B	2640 B	3430 B	1710 B
Sodium	~	~	88.2	85.2	93	99.7	99.8	90.7	199	87.4	110	142	141
Vanadium	~	~	28.4	29.5	32	26.6	29.6	29.9	24	30.6	39.9	39.6	25.1
Zinc	109	10,000	82	87.8	95.1	54.7	39.5	88	77.6	85.3	45.4	**477**	31.9

Notes provided on Page 5.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.

Table 3B
Remedial Investigation
Soil Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:
1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Unrestricted Use SCOs are bolded.
4. Analytes detected with concentrations above Restricted Use Commercial SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample SBDUP01_080818 is a duplicate sample of LB25_15-16; sample SBDUP02_081318 is a duplicate sample of LB23_4-5; and sample SBDUP04_050319 is a duplicate sample of SS1_10-12IN.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. NA = Not analyzed
11. ND = Not detected

Qualifiers:
D = The concentration reported is a result of a diluted sample.
B = The analyte was found in the associated analysis batch blank.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 3C
Remedial Investigation
Soil Sample Analytical Results Summary - PFAS

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI	SRI
Location	LB23	LB27	LB27	LB28	SS1	SS1	SS1	SS3	SS3	SS5	SS5	SS7	SS7
Sample ID	LB23_6-8	LB27_3.5-4.5	SBDUP05_3.5-4.5	LB28_3-4	SS1_0-2IN	SS1_10-12IN	SBDUP04_050319	SS3_0-2IN	SS3_10-12IN	SS5_0-2IN	SS5_10-12IN	SS7_0-2IN	SS7_10-12IN
Laboratory ID	19E0244-03	19E0157-01	19E0157-03	19E0157-02	19E0189-01	19E0189-02	19E0189-20	19E0189-05	19E0189-06	19E0189-09	19E0189-10	19E0189-13	19E0189-14
Sample Date	5/6/2019	5/2/2019	5/2/2019	5/2/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019	5/3/2019
Sample Depth	6-8	3.5-4.5	3.5-4.5	3-4	0-2	10-12	10-12	0-2	10-12	0-2	10-12	0-2	10-12
Per and Polyfluoroalkyl Substances (µg/kg)													
N-ethyl perfluorooctane- sulfonamidoacetic acid (NEtFOSAA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
N-methyl perfluorooctane- sulfonamidoacetic acid (NMeFOSAA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorobutanesulfonic Acid (PFBS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorobutanoic acid (PFBA)	0.488 U	0.563 U	0.523 U	0.535 U	0.666	0.588 U	0.552 U	1.25	0.758	0.816	0.831	0.817	0.512 U
Perfluorodecanesulfonic acid (PFDS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorodecanoic acid (PFDA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorododecanoic Acid (PFDoA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluoroheptanesulfonic acid (PFHpS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluoroheptanoic acid (PFHpA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorohexanesulfonic Acid (PFHxS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorohexanoic Acid (PFHxA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorononanoic Acid (PFNA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorooctanesulfonamide (FOSA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorooctanesulfonic acid (PFOS)	0.488 U	0.563 U	0.523 U	0.535 U	0.911	0.588 U	0.552 U	1.33	0.594 U	0.853	0.918	2.08	0.512 U
Perfluorooctanoic Acid (PFOA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluoropentanoic Acid (PFPeA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorotetradecanoic Acid (PFTA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluorotridecanoic Acid (PFTrDA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Perfluoroundecanoic Acid (PFUnA)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	0.488 U	0.563 U	0.523 U	0.535 U	0.608 U	0.588 U	0.552 U	0.613 U	0.594 U	0.584 U	0.52 U	0.562 U	0.512 U
Total PFAS	ND	ND	ND	ND	1.6	ND	ND	2.6	0.8	1.7	1.7	2.9	ND

Notes:
1. Sample SBDUP04_050319 is a duplicate sample of SS1_10-12IN and sample
2. µg/kg = microgram per kilogram
ND = Not detected

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 3D
Remedial Investigation
Soil Sample Analytical Results Summary - Total and TCLP Lead Delineation

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Restricted Use - Commercial SCOs	RCRA Characteristics of Hazardous Waste	SRI LB23 LB23_0-2 19E0244-01 5/6/2019 0-2	SRI LB23 SBDUP06_050619 19E0244-26 5/6/2019 0-2	SRI LB23 LB23_2-4 19E0244-02 5/6/2019 2-4	SRI LB23 LB23_6-8 19E0244-03 5/6/2019 6-8	SRI LB23 LB23_8-10 19E0244-04 5/6/2019 8-10	SRI LB23_E1 LB23_E1_0-2 19E0244-13 5/6/2019 0-2	SRI LB23_E1 LB23_E1_2-4 19E0244-14 5/6/2019 2-4	SRI LB23_E1 LB23_E1_4-6 19E0244-15 5/6/2019 4-6	SRI LB23_E1 LB23_E1_6-8 19E0244-16 5/6/2019 6-8	SRI LB23_N1 LB23_N1_0-2 19E0244-05 5/6/2019 0-2	SRI LB23_N1 LB23_N1_2-4 19E0244-06 5/6/2019 2-4	SRI LB23_N1 LB23_N1_4-6 19E0244-07 5/6/2019 4-6
Inorganics (mg/kg)														
Lead	1,000	~	95.5	97.4	201	525	14.9	204	208	202	874	**3380**	208	**1600**
TCLP - Inorganics (mg/L)														
Lead	~	5	0.125 U	0.125 U	0.125 U	29.1	0.351	0.312	0.366	1.43	0.7	5.79	12.6	20.7

Notes provided on Page 3.
Concentrations above Restricted Use Commercial SCOs are bolded.
Concentrations above RCRA Characteristics of Hazardous Waste are shaded.

Table 3D
Remedial Investigation
Soil Sample Analytical Results Summary - Total and TCLP Lead Delineation

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Restricted Use - Commercial SCOs	RCRA Characteristics of Hazardous Waste	SRI LB23_N1 LB23_N1_6-8 19E0244-08 5/6/2019 6-8	SRI LB23_N2 LB23_N2_0-2 19E0244-09 5/6/2019 0-2	SRI LB23_N2 LB23_N2_2-4 19E0244-10 5/6/2019 2-4	SRI LB23_N2 LB23_N2_4-6 19E0244-11 5/6/2019 4-6	SRI LB23_S1 LB23_S1_0-2 19E0244-17 5/6/2019 0-2	SRI LB23_S1 LB23_S1_2-4 19E0244-18 5/6/2019 2-4	SRI LB23_S1 LB23_S1_4-6 19E0244-19 5/6/2019 4-6	SRI LB23_S1 LB23_S1_6-8 19E0244-20 5/6/2019 6-8	SRI LB23_S2 LB23_S2_0-2 19E0244-21 5/6/2019 0-2	SRI LB23_S2 LB23_S2_2-4 19E0244-22 5/6/2019 2-4	SRI LB23_S2 LB23_S2_4-6 19E0244-23 5/6/2019 4-6
Inorganics (mg/kg)													
Lead	1,000	~	86.4	102	521	103	65	915	59.9	15.1	120	832	678
TCLP - Inorganics (mg/L)													
Lead	~	5	0.125 U	0.125 U	4.46	0.263	0.561	13.7	64.2	0.209	3.69	50.7	2.17

Notes provided on Page 3.
Concentrations above Restricted Use Commercial SCOs are bolded.
Concentrations above RCRA Characteristics of Hazardous Waste are shaded.

Table 3D
Remedial Investigation
Soil Sample Analytical Results Summary - Total and TCLP Lead Delineation

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:
1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Restricted Use Commercial Soil Cleanup Objectives (SCO).
2. Soil sample analytical results are compared to the 6 New York Codes, Rules and Regulations (NYCRR) Part 371.3 and 40 CFR 261 Subpart C and Table 1 of 40 CFR 261.24 - Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Characteristics of Hazardous Waste.
3. Only detected analytes are shown in the table.
4. Analytes detected with concentrations above Restricted Use Commercial SCOs are bolded.
5. Analytes detected with concentrations above RCRA Maximum Concentration of Contaminants for the Toxicity Characteristic are shaded.
6. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
7. Sample SBDUP06_050619 is a duplicate sample of LB23_0-2.
8. ~ = Regulatory limit for this analyte does not exist
9. bgs = below grade surface
10. mg/kg = milligrams per kilogram
11. mg/L = milligrams per liter
12. TCLP = Toxicity Characteristic Leaching Procedure

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 4A
Remedial Investigation
Groundwater Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC SGVs	RI		RI		RI		RI		RI		RI		RI		RI		RI		RI		RI	
Location		LMW01D		LMW08D		LMW08S		LMW11		LMW12D		LMW12S		LMW15		LMW19D		LMW19S		LMW20D		LMW20S	
Sample ID		LMW01D_090518		LMW08D_090518		LMW08S_090518		LMW11_090718		LMW12D_090618		LMW12S_090618		LMW15_090618		LMW19D_090718		LMW19S_090718		LMW20D_090618		LMW20S_090618	
Laboratory ID		18I0168-02		18I0168-05		18I0168-04		18I0296-03		18I0253-04		18I0253-03		18I0253-05		18I0296-05		18I0296-04		18I0253-07		18I0253-06	
Sample Date		9/5/2018		9/5/2018		9/5/2018		9/7/2018		9/6/2018		9/6/2018		9/6/2018		9/7/2018		9/7/2018		9/6/2018		9/6/2018	
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	**8.23**		**13.1**	D	0.2	J	4.47	
1,1,2-Trichloroethane	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.39	J	0.2	U	0.2	U	0.4	U	0.2	U	0.38	J
1,1-Dichloroethane	5	**27.4**		0.2	UJ	0.43	J	0.28	J	0.78	J	**16.1**	J	**22.4**	J	**15.4**		**5.62**	D	**6.46**	J	**26.4**	J
1,1-Dichloroethene	5	**10.2**	J	0.2	UJ	0.87	J	0.93	J	0.98	J	**17.2**	J	**10.3**	J	**9.58**	J	**10.3**	J	3.87	J	**16.2**	J
1,2,4-Trimethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	2.1	D	0.2	U	0.2	U
1,2-Dichloroethane	0.6	0.2	U	0.2	U	0.2	U	0.2	U	0.41	J	0.2	U	0.2	U	0.2	U	0.4	U	0.2	U	0.2	U
1,2-Dichloropropane	1	0.2	U	0.2	UJ	0.2	UJ	0.2	U	**2.9**		0.2	U	0.2	U	0.2	U	0.4	U	0.2	U	0.2	U
1,3,5-Trimethylbenzene (Mesitylene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.6	JD	0.2	U	0.21	J
Benzene	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.22	J	0.2	U	0.2	U	**2.88**	D	0.2	U	0.2	U
Bromochloromethane	5	0.2	UJ	0.2	U	0.2	U	0.2	U	0.53		0.2	U	0.2	U	0.2	U	0.4	U	0.2	U	0.2	U
Carbon Disulfide	60	0.2	U	0.66	J	0.2	UJ	0.2	UJ	0.2	UJ	0.3	J	0.2	UJ	0.64	J	0.4	UJ	0.2	UJ	0.2	UJ
Chloroethane	5	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	**23.1**	J	0.2	UJ	0.2	UJ
Chloroform	7	0.2	U	0.2	U	0.2	U	0.7		2.74		0.2	U	0.2	U	0.2	U	3.18	D	0.67		0.39	J
Cis-1,2-Dichloroethene	5	**1,100**	D	2.74	J	**149**	D	**22.6**		**109**		**214**	D	**268**	D	**249**	D	**446**	D	**207**	D	**228**	D
Ethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	2.22	D	0.2	U	0.2	U
M,P-Xylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**6.24**	D	0.5	U	0.5	U
Methyl Ethyl Ketone (2-Butanone)	50	0.2	U	0.2	UJ	0.2	UJ	0.2	U	15.3	J	0.2	UJ	0.2	UJ	0.2	U	**68.1**	D	0.2	UJ	0.2	UJ
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.21	J	0.4	U	0.2	U	0.2	U
Methylcyclohexane	~	0.2	U	0.2	UJ	0.2	UJ	0.2	U	7.38		0.2	U	0.2	U	0.2	U	0.4	U	0.2	U	0.2	U
Methylene Chloride	5	1	UJ	1	UJ	1	UJ	1	U	1	UJ	1.54	J	1	UJ	1	U	2.02	U	1	UJ	1	UJ
n-Propylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	UJ	0.4	J	0.2	U	0.2	U
o-Xylene (1,2-Dimethylbenzene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	2.34	D	0.2	U	0.2	U
Tetrachloroethene (PCE)	5	1.53	J	0.2	UJ	0.2	UJ	**5.61**	J	**10.8**	J	3.05	J	0.23	J	2.92	J	**14.2**	J	**5.45**	J	**5.17**	J
Toluene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.27	J	0.2	U	0.2	U	3.92	D	0.2	U	0.2	U
Total Xylenes	5	0.6	U	0.6	U	0.6	U	0.6	U	0.6	UJ	0.6	UJ	0.6	UJ	0.6	U	**8.58**	D	0.6	UJ	0.6	UJ
Trans-1,2-Dichloroethene	5	**10.8**		0.2	UJ	0.68	J	0.22	J	0.73	J	1.42	J	1.23	J	1.63		2.42	D	0.8	J	2.01	J
Trichloroethene (TCE)	5	**3,190**	J	**118**		2.15		**1,490**	J	**874**	D	**15,800**	D	**4,290**	J	**5,080**	J	**14,400**	J	**2,540**	D	**2,210**	DE
Vinyl Chloride	2	**8.35**	J	0.2	UJ	0.43	J	1.12	J	**2.49**	J	**9.9**	J	**9**	J	**11.7**	J	**45.5**	J	**7.78**	J	**19.6**	J
Semivolatile Organic Compounds (µg/L)																							
1,4-Dioxane (P-Dioxane)	~	NA		NA		5.3		NA		NA		29		NA		NA		NA		NA		NA	
Acenaphthene	20	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0513	U	0.0541	U	0.0513	U	0.05	U	0.05	U	0.0513	U	0.0513	U
Anthracene	50	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0513	U	0.0541	U	0.0513	U	0.05	U	0.05	U	0.144		0.123	
Bis(2-Ethylhexyl) Phthalate	5	0.5	UJ	2.18	J	2.44	J	0.513	UJ	3.21	J	0.724	J	1.29	J	0.9	J	0.77	J	0.513	UJ	0.513	UJ
Fluoranthene	50	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0718		0.0541	U	0.0513	U	0.05	U	0.05	U	0.297		0.349	
Fluorene	50	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0513		0.0541	U	0.0513	U	0.05	U	0.05	U	0.174		0.103	
Naphthalene	10	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0513	U	0.0541	U	0.0513	U	0.05	U	0.05	U	0.103		0.0513	
Phenanthrene	50	0.05	U	0.0541	U	0.05	U	0.0513	U	0.185		0.119		0.0513	U	0.05	U	0.05	U	0.872		0.626	
Pyrene	50	0.05	U	0.0541	U	0.05	U	0.0513	U	0.0513		0.0541	U	0.0513	U	0.05	U	0.05	U	0.195		0.236	

Notes provided on Page 3.

Table 4A
Remedial Investigation
Groundwater Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC SGVs	RI		RI		RI		RI		RI		RI		RI		SRI		SRI		SRI	
Location		MW-1		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		GWG01		GWG02		GWG03	
Sample ID		MW-1_090518		GWDUP01_090518		MW-2_090518		MW-3_090618		MW-4_090618		MW-5_090718		MW-6_090718		GWG01_050919		GWG02_050919		GWG03_050919	
Laboratory ID		18I0168-01		18I0168-06		18I0168-03		18I0253-01		18I0253-02		18I0296-01		18I0296-02		19E0476-01		19E0476-02		19E0476-03	
Sample Date		9/5/2018		9/5/2018		9/5/2018		9/6/2018		9/6/2018		9/7/2018		9/7/2018		5/9/2019		5/9/2019		5/9/2019	
Volatile Organic Compounds (µg/L)																					
1,1,1-Trichloroethane	5	0.2	U	0.2	U	**8.48**		0.2	U	0.2	U	0.21	J	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1-Dichloroethane	5	**13.6**	J	**14.5**	J	0.2	U	0.2	UJ	0.33	J	1.34		0.29	J	3.37		0.2	U	**9.77**	
1,1-Dichloroethene	5	**7.96**	J	**7.52**	J	1.07	J	0.2	UJ	0.2	UJ	0.74	J	0.2	U	1.32		0.2	U	2.66	
1,2,4-Trimethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2-Dichloroethane	0.6	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2-Dichloropropane	1	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,3,5-Trimethylbenzene (Mesitylene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Benzene	1	0.2	U	0.2	U	**7.17**		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromochloromethane	5	0.2	UJ	0.2	U	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Carbon Disulfide	60	0.2	U	0.2	UJ	0.2	U	0.2	UJ	0.25	J	0.2	UJ	0.2	U	0.2	U	0.74		0.28	J
Chloroethane	5	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U
Chloroform	7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.41	J	0.2	U	0.2	U	0.2	U	0.53	
Cis-1,2-Dichloroethene	5	**474**	D	**432**	D	**273**	D	0.98		**7.9**		**134**		**13.7**		**33.9**		**7.92**		**387**	D
Ethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
M,P-Xylene	5	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Ethyl Ketone (2-Butanone)	50	0.2	U	0.2	UJ	0.2	U	0.2	UJ	0.2	UJ	19.3		0.2	U	0.2	U	0.2	U	0.2	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methylcyclohexane	~	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methylene Chloride	5	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U
o-Xylene (1,2-Dimethylbenzene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Tetrachloroethene (PCE)	5	0.55	J	0.59	J	0.2	UJ	0.2	UJ	0.2	UJ	**5.22**	J	0.2	UJ	0.2	U	0.2	U	0.2	U
Toluene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Total Xylenes	5	0.6	U	0.6	U	0.6	U	0.6	UJ	0.6	UJ	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Trans-1,2-Dichloroethene	5	2.93	J	2.96	J	3.84		0.2	UJ	0.75	J	1		0.26	J	0.2	U	0.2	U	**5.5**	
Trichloroethene (TCE)	5	**3,820**	J	**2,240**	J	1.64		**21.7**	J	**265**	D	**728**	J	**15.1**	J	**61.2**		0.2	U	**124**	
Vinyl Chloride	2	**15.2**	J	**15.3**	J	**40.4**	J	0.2	U	**2.35**	J	**9.71**	J	**16.4**		**10.8**		**22.2**		**3.48**	
Semivolatile Organic Compounds (µg/L)																					
1,4-Dioxane (P-Dioxane)	~	8.9		8.9		NA		NA		NA		NA		NA		1.76		2.76		0.26	
Acenaphthene	20	0.0513	U	0.0513	U	0.358		0.0541	U	0.0526	U	0.0513	U	0.0513	U	0.0513	U	0.441		0.113	
Anthracene	50	0.0513	U	0.0513	U	0.0526	U	0.0541	U	0.0526	U	0.0513	U	0.0513	U	0.0513	U	0.0821		0.0513	U
Bis(2-Ethylhexyl) Phthalate	5	0.513	UJ	0.513	UJ	3.19	J	0.541	UJ	**5.07**	J	0.513	UJ	0.513	UJ	0.677	B	0.513	U	0.513	U
Fluoranthene	50	0.0513	U	0.0513	U	0.0526	U	0.0541	U	0.0526	U	0.0513	U	0.0615		0.0513	U	0.113		0.0513	U
Fluorene	50	0.0513	U	0.0513	U	0.0526	U	0.0541	U	0.0526	U	0.0513	U	0.0513	U	0.0513	U	0.421		0.0513	
Naphthalene	10	0.0513	U	0.0513	U	0.0526	U	0.0757		0.0526	U	0.123		0.0821		0.0513	U	0.328		0.0513	U
Phenanthrene	50	0.0513	U	0.0513	U	0.0526	U	0.0541	U	0.0526	U	0.0513	U	0.0513	U	0.0513	U	0.492		0.0513	
Pyrene	50	0.0513	U	0.0513	U	0.0526	U	0.0541	U	0.0526	U	0.0513	U	0.0513	U	0.0513	U	0.0513		0.0821	

Notes provided on Page 3.

Table 4A
Remedial Investigation
Groundwater Sample Analytical Results Summary - VOCs & SVOCs

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC SGVs arebolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample GWDUP01_090518 is a duplicate sample of MW-1_090518.
6. ~ = Regulatory limit for this analyte does not exist
7. µg/L = micrograms per liter
8. NA = Not analyzed

Qualifiers:

D = The concentration reported is a result of a diluted sample.
E = The result is estimated and cannot be accurately reported due to levels encountered or interferences.
B = The analyte was found in the associated analysis batch blank.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 4B
Remedial Investigation
Groundwater Sample Analytical Results Summary - Pesticides, PCBs & Metals

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase	NYSDEC SGVs	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
Location		LMW01D	LMW08D	LMW08S	LMW11	LMW12D	LMW12S	LMW15	LMW19D	LMW19S	LMW20D	LMW20S	MW-1	MW-1
Sample ID		LMW01D_090518	LMW08D_090518	LMW08S_090518	LMW11_090718	LMW12D_090618	LMW12S_090618	LMW15_090618	LMW19D_090718	LMW19S_090718	LMW20D_090618	LMW20S_090618	MW-1_090518	GWDUP01_090518
Laboraotry ID		18I0168-02	18I0168-05	18I0168-04	18I0296-03	18I0253-04	18I0253-03	18I0253-05	18I0296-05	18I0296-04	18I0253-07	18I0253-06	18I0168-01	18I0168-06
Sample Date		9/5/2018	9/5/2018	9/5/2018	9/7/2018	9/6/2018	9/6/2018	9/6/2018	9/7/2018	9/7/2018	9/6/2018	9/6/2018	9/5/2018	9/5/2018
Pesticides (µg/L)														
Alpha Endosulfan	~	0.00432 U	0.00444 U	0.0041 U	0.0176	0.004 U	0.00432 U	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00421 U	0.0041 U	0.0041 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	0.00432 U	0.0136	0.0041 U	0.00457 U	0.004 U	0.00432 U	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00421 U	0.0041 U	0.0041 U
Beta Endosulfan	~	0.0114 P	0.00444 U	0.0041 U	0.00457 U	0.004 U	0.00432 U	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00421 U	0.0041 U	0.0041 U
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.00432 U	0.00444 U	0.0041 U	0.00457 U	0.004 U	0.00432 U	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00696	0.0041 U	0.0041 U
Gamma Bhc (Lindane)	0.05	0.00432 U	0.00444 U	0.0041 U	0.00457 U	0.00543	0.00547	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00446 P	0.0041 U	0.0041 U
Heptachlor	0.04	0.00432 U	0.00444 U	0.0041 U	0.00457 U	0.004 U	0.00432 U	0.0041 U	0.00421 U	0.00593 U	0.0041 U	0.00517	0.0041 U	0.0041 U
Polychlorinated Biphenyls (µg/L)	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (µg/L)														
Aluminum	~	613	71.9	141	5,800 J	651	5,850	3,740	110 J	13,000 J	552	3,340	50 U	50 U
Aluminum (Dissolved)	~	95.8	55.6 U	55.6 U	55.6 UJ	55.6 U	55.6 U	55.6 U	55.6 UJ	55.6 UJ	55.6 U	55.6 U	55.6 U	55.6 U
Arsenic	25	1.57	1.76	3.13	3.04	2.13	12.4	9.88	2.8	10.5	1.15	2.69	1.11 U	1.11 U
Arsenic (Dissolved)	25	1.65	1.73	2.72	1.11 U	1.11 U	1.59	3.59	2.78	1.18	1.11 U	1.59	1.11 U	1.11 U
Barium	1,000	128 J	40 J	124 J	572 J	198	**1,450**	979	191 J	**3,260** J	199	257	154 J	152 J
Barium (Dissolved)	1,000	101	36.5	117	215 J	175	93.5	149	191 J	130 J	174	113	143	141
Cadmium	5	1.11 U	1.11 U	1.11 U	1.11 U	1 U	1.31	1 U	1.11 U	2.95	1 U	1 U	1.11 U	1.11 U
Calcium	~	55,200 R	27,700 R	84,500 R	254,000 J	82,000	670,000	455,000	69,100 J	786,000 J	68,500	84,300	74,000 R	74,200 R
Calcium (Dissolved)	~	47,000	25,600	80,900	83,700 J	72,800	57,000	60,800	68,800 J	95,500 J	61,100	54,000	70,900	69,500
Chromium, Total	50	5 UJ	5 UJ	5 UJ	12.9 J	5.56 U	5.56 U	5.56 U	5 UJ	10.4 J	5.56 U	7.36	5 UJ	5 UJ
Cobalt	~	5 UJ	5 UJ	5 UJ	14.8 J	5.56 U	19.5	8.05	5 UJ	51.3 J	5.56 U	5.56 U	5 UJ	5 UJ
Copper	200	9.4	5.39	5.55	45.2 J	9.55	93.7	26.3	5 UJ	96.1 J	7.89	19.7	5 U	5.59
Copper (Dissolved)	200	5.56 U	5.56 U	5.56 U	5.56 UJ	5.56 U	5.56 U	5.56 U	5.56 UJ	6.45 J	5.56 U	5.56 U	5.56 U	5.56 U
Cyanide	200	10.4	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	10 U	NA
Iron	300	**1,280**	**382**	**2,640**	**7,000** J	**1,320**	**6,330**	**15,800**	154 J	**9,020** J	**1,210**	**5,710**	**322** J	**324**
Iron (Dissolved)	300	22.2 U	132 B	**2,430** B	89.9 J	35	29.9	78.9	41.1 J	173 J	64.7	22.2 U	**351** B	**345** B
Lead	25	5.3 U	9.38 U	5.77 U	8.48 J	5.56 UJ	18 J	20.6 J	5 UJ	**33.3** J	5.56 UJ	5.56 UJ	6.35 U	6.56 U
Magnesium	35,000	23,900 J	8,860 J	21,800 J	**96,600** J	**36,400**	**158,000**	**142,000**	27,400 J	**164,000** J	**36,000**	33,400	24,000 J	23,700 J
Magnesium (Dissolved)	35,000	18,900	7,930	20,000	29,200 J	31,600	18,400	24,300	27,400 J	**38,000** J	32,100	19,100	22,000	21,700
Manganese	300	202 J	89.3 J	**560** J	**1,520** J	182	**6,360**	**4,240**	**308** J	**19,600** J	**530**	**648**	**1,580** J	**1,560** J
Manganese (Dissolved)	300	148	81.8	**535**	64.2 J	127	75.9	164	**305** J	**6,010** J	**461**	**323**	**1,450**	**1,480**
Potassium	~	7,480 J	5,030 J	5,700 J	7,390 J	9,150 J	9,500 J	15,500 J	9,630 J	6,570 J	9,040 J	6,630 J	3,960 J	3,860 J
Potassium (Dissolved)	~	7,250 J	4,950 J	5,750 J	5,790 J	8,820 J	5,000 J	8,450 J	9,700 J	3,820 J	8,690 J	5,150 J	3,910 J	3,820 J
Selenium	10	1.11 UJ	1.11 UJ	1.11 UJ	**12.5** J	4.85	**33**	**22.3**	1.11 UJ	**42** J	1.07	1 U	1.11 UJ	1.11 UJ
Selenium (Dissolved)	10	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 U	1.13	1.4	1.11 UJ	2.92 J	1.57	1.46	2.36 J	1.11 UJ
Sodium	20,000	15,000 J	4,750 J	**22,900** J	**70,800**	**56,900**	**20,800**	**27,700**	**33,400** J	**34,700**	**53,600**	**33,400**	**50,900** J	**50,700** J
Sodium (Dissolved)	20,000	14,500	4,520	**22,000**	**69,700** J	**59,000** J	19,400 J	**25,700** J	**33,700** J	**33,200** J	**56,500** J	**34,400** J	**48,600**	**48,000**
Thallium	0.5	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* U	**1.83** J	*1* UJ	*1* UJ	*1.11* U	*1.11* U	*1* UJ	*1* UJ	*1.11* U	*1.11* UJ
Vanadium	~	10 U	10 U	10 U	19.2 J	11.1 U	49.6	12.6	10 UJ	39.1 J	11.1 U	15.9	10 U	10 U
Zinc	2,000	17.7 J	18.4 J	15 UJ	46.5 J	16.7 U	33.4	37.6	15 UJ	52.8 J	19.1	29.4	20 J	15 UJ

Notes:
1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs)
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC SGVs arebolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample GWDUP01_090518 is a duplicate sample of MW-
6. ~ = Regulatory limit for this analyte does not exist
7. µg/L = micrograms per liter
8. NA = Not analyzed
9. ND = Not detected

Qualifiers:
P = The relative percent difference (RPD) between the results for the two columns exceeds the method-specified criteria.
R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table X
Groundwater Summary Report
Groundwater Sample Analytical Results

Project Name XXX
XXX, New York
Regulatory Site No.: XXX
Langan Project No.: XXX

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC SGVs are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample GWDUP01_090518 is a duplicate sample of MW-1_090518.
6. ~ = Regulatory limit for this analyte does not exist
7. µg/L = micrograms per liter
8. NA = Not analyzed
9. ND = Not detected

Qualifiers:

P = The relative percent difference (RPD) between the results for the two columns exceeds the method-specified criteria.
R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 4C
Remedial Investigation
Groundwater Sample Analytical Results Summary - PFAS

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase / Location / Sample ID / Laboratory ID / Sample Date	USEPA Health Advisory for Emerging Contaminants	RI / LMW08S / LMW08S_090518 / 18I0203-02 / 9/5/2018		RI / LMW12S / LMW12S_090618 / 18I0281-01 / 9/6/2018		RI / MW-1 / MW-1_090518 / 18I0203-01 / 9/5/2018		RI / MW-1 / GWDUP01_090518 / 18I0203-03 / 9/5/2018	
Per and Polyfluoroalkyl Substances (ng/L)									
N-ethyl perfluorooctane- sulfonamidoacet	~	2	U	2	U	2	U	2	U
N-methyl perfluorooctane- sulfonamidoac	~	2	U	2	U	2	U	2	U
Perfluorobutanesulfonic Acid (PFBS)	~	2	U	2	U	2	U	2	U
Perfluorobutanoic acid (PFBA)	~	2	U	2	U	2	U	2	U
Perfluorodecanesulfonic acid (PFDS)	~	2	U	2	U	2	U	2	U
Perfluorodecanoic acid (PFDA)	~	2	U	2	U	2	U	2	U
Perfluorododecanoic Acid (PFDoA)	~	2	U	2	U	2	UJ	2	U
Perfluoroheptanesulfonic acid (PFHpS)	~	2	U	2	U	2	UJ	2	U
Perfluoroheptanoic acid (PFHpA)	~	2.6		2	U	2	U	2	U
Perfluorohexanesulfonic Acid (PFHxS)	~	2	U	2	U	2	UJ	2	U
Perfluorohexanoic Acid (PFHxA)	~	5.4		2	U	3.5	J	3.3	
Perfluorononanoic Acid (PFNA)	~	2	U	2	U	2	UJ	2	U
Perfluorooctanesulfonamide (FOSA)	~	2	UJ	2	UJ	2	UJ	2	UJ
Perfluorooctanesulfonic acid (PFOS)	70	3.5		2	U	4.8		4.6	
Perfluorooctanoic Acid (PFOA)	70	11		2	U	6		7.2	
Perfluoropentanoic Acid (PFPeA)	~	2.2		2	U	2	UJ	2	U
Perfluorotetradecanoic Acid (PFTA)	~	2	U	2	U	2	UJ	2	U
Perfluorotridecanoic Acid (PFTrDA)	~	2	U	2	U	2	UJ	2	U
Perfluoroundecanoic Acid (PFUnA)	~	2	U	2	U	2	UJ	2	U
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C	~	2	U	2	U	2	U	2	U
Sodium 1H,1H,2H,2H-Perfluorodecane Su	~	2	U	2	U	2	U	2	U

Notes:
1. Regulatory criteria do not exist for per- and polyfluoroalkyl substances (PFAS) and 1,4-Dioxane in New York State. Perflourooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are compared to the United States Environmental Protection Agency (USEPA) health advisory limit of 70 parts per trillion.
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above the USEPA Health Advisory Limit are bolded and shaded.
4. Analytical results with reporting limits (RL) above USEPA Health Advisory Limit are italicized.
5. Sample GWDUP01_090518 is a duplicate sample of MW-1_090518.
6. ~ = Regulatory limit for this analyte does not exist
7. ng/L = nanograms per liter

Qualifiers:
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 5
Remedial Investigation
Soil Vapor Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Location	LSV22	
Sample ID	LSV22_081418	
Laboratory ID	18H0720-02	
Sample Date	8/14/2018	
Sample Type	SV	
Volatile Organic Compounds (µg/m³)		
1,2,4-Trimethylbenzene	16	D
1,3,5-Trimethylbenzene (Mesitylene)	5.2	D
1,3-Butadiene	4.2	J
2-Hexanone	8.8	D
4-Ethyltoluene	13	D
Acetone	73	D
Benzene	3.8	D
Bromodichloromethane	3.1	D
Carbon Disulfide	3.2	D
Chloroform	19	D
Cyclohexane	3.7	D
Dichlorodifluoromethane	310	D
Ethylbenzene	5.4	D
Isopropanol	4.7	D
M,P-Xylene	21	D
Methyl Ethyl Ketone (2-Butanone)	23	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	3.6	D
Methylene Chloride	6.7	D
n-Heptane	2.9	D
n-Hexane	6.2	D
o-Xylene (1,2-Dimethylbenzene)	8.8	D
Propylene	26	D
Styrene	4	D
Tetrachloroethene (PCE)	14	D
Tetrahydrofuran	3.4	D
Toluene	15	D
Trichloroethene (TCE)	3.7	D
Trichlorofluoromethane	1.5	D

Notes:
1. Only detected analytes are shown in the table.
2. µg/m³ = micrograms per cubic meter
3. SV = Soil Vapor

Qualifiers:
D = The concentration reported is a result of a diluted sample.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Table 6A
Remedial Investigation
Off-Site Surface Water Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase						SRI			
Location	NYSDEC Type H(FC) Class C	NYSDEC Type A(C) Class C	NYSDEC Type A(A) Class C	NYSDEC Type E Class C	NYSDEC Type W Class C	SW1	SW2	SW3	SW3
Sample ID						SW1_050219	SW2_050219	SW3_050219	SWDUP01_050219
Laboratory ID						19E0144-01	19E0144-03	19E0144-02	19E0144-04
Sample Date						5/2/2019	5/2/2019	5/2/2019	5/2/2019
Volatile Organic Compounds (µg/L)									
Acetone	~	~	~	~	~	1.05 J	1 U	1 U	1 U
Cis-1,2-Dichloroethene	~	~	~	~	~	2.08	1.46	1.39	1.32
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	~	~	0.41 J	0.2 U	0.2 U	0.2 U
Tert-Butyl Methyl Ether	~	~	~	~	~	0.49 J	0.54	0.54	0.51
Toluene	6,000	100	480	~	~	0.94	0.3 J	0.53	0.2 U
Trichloroethene (TCE)	40	~	~	~	~	0.54	0.35 J	0.2 U	0.36 J
Vinyl Chloride	~	~	~	~	~	0.34 J	0.23 J	0.21 J	0.2 U
Semivolatile Organic Compounds (µg/L)									
Acenaphthylene	~	~	~	~	~	0.0513 U	0.0526 U	0.103	0.0513 U
Bis(2-Ethylhexyl) Phthalate	~	0.6	~	~	~	1.91	0.526 U	0.513 U	0.513 U
Fluorene	~	0.54	4.8	~	~	0.0513 U	0.0526 U	0.0513	0.0513 U
Naphthalene	~	13	110	~	~	2.56	0.116	2.43	0.0923
Pesticides (µg/L)	~	~	~	~	~	ND	ND	ND	ND
Polychlorinated Biphenyls (µg/L)	~	~	~	~	~	ND	ND	ND	ND
Inorganics (µg/L)									
Aluminum	~	100	~	~	~	55.6 U	55.6 U	56.5 B	55.6 U
Aluminum (Dissolved)	~	100	~	~	~	55.6 U	88.8	55.6 U	143
Barium	~	~	~	~	~	124	127	127	126
Barium (Dissolved)	~	~	~	~	~	136	120	122	121
Calcium	~	~	~	~	~	48,900	48,800	49,300	50,800
Calcium (Dissolved)	~	~	~	~	~	48,000 B	50,100 B	50,500 B	49,900 B
Iron	~	300	~	~	~	1,050	970	1,180	955
Iron (Dissolved)	~	300	~	~	~	300	278 U	278 U	278 U
Magnesium	~	~	~	~	~	14,900	14,800	14,900	15,100
Magnesium (Dissolved)	~	~	~	~	~	14,000	14,600	14,700	14,700
Manganese	~	~	~	~	~	152	148	153	150
Manganese (Dissolved)	~	~	~	~	~	139	136	142	140
Potassium	~	~	~	~	~	3,770	3,740	3,770	3,840
Potassium (Dissolved)	~	~	~	~	~	3,720 B	3,650 B	3,600 B	3,590 B
Selenium	~	4.6	~	~	~	1.11 U	1.11 U	1.28	1.11 U
Selenium (Dissolved)	~	4.6	~	~	~	1.11 U	1.18	1.11 U	1.11 U
Sodium	~	~	~	~	~	83,200	82,000	81,800	83,000
Sodium (Dissolved)	~	~	~	~	~	83,900	84,400	85,100	84,400
Per and Polyfluoroalkyl Substances (ng/L)									
Perfluorobutanesulfonic Acid	~	~	~	~	~	5.4	NA	5.71	5.75
Perfluorobutanoic acid	~	~	~	~	~	4.06	NA	4.3	4.31
Perfluoroheptanoic acid	~	~	~	~	~	2.49	NA	2.71	2.53
Perfluorohexanesulfonic Acid	~	~	~	~	~	2.34	NA	2.37	2.43
Perfluorohexanoic Acid	~	~	~	~	~	6.99	NA	7.62	7.64
Perfluorooctanesulfonic acid	~	~	~	~	~	7.96	NA	9.92	11.8
Perfluorooctanoic Acid	~	~	~	~	~	7.08	NA	8.19	8.76
Perfluoropentanoic Acid	~	~	~	~	~	6.62	NA	7.51	7.5

Notes:
1. Surface water sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class C Water (NYSDEC SGVs).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC Type H(FC) Class C are bolded.
4. Analytes detected with concentrations above NYSDEC Type A(C) Class C are shaded.
5. Analytes detected with concentrations above NYSDEC Type A(A) Class C are underlined.
6. Analytes detected with concentrations above NYSDEC Type E Class C are red.
7. Analytes detected with concentrations above NYSDEC Type W Class C are outlined.
8. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
9. Sample SWDUP01_050219 is a duplicate sample of SW3_050219.
10. ~ = Regulatory limit for this analyte does not exist
11. * = Criterion not established due to non-quantified CaCO3 and pH values during the Supplemental Remedial Investigation."
12. µg/L = micrograms per liter
13. ng/L = nanograms per liter
14. ND = Not detected

Qualifiers:
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
B = The analyte was found in the associated analysis batch blank.

Table 6A
Remedial Investigation
Surface Water Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:
1. Surface water sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class C Water
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC Type H(FC) Class C are bolded.
4. Analytes detected with concentrations above NYSDEC Type A(C) Class C are shaded.
5. Analytes detected with concentrations above NYSDEC Type A(A) Class C are underlined.
6. Analytes detected with concentrations above NYSDEC Type E Class C are red.
7. Analytes detected with concentrations above NYSDEC Type W Class C are outlined.
8. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
9. Sample SWDUP01_050219 is a duplicate sample of SW3_050219.
10. ~ = Regulatory limit for this analyte does not exist
11. * = Criterion not established due to non-quantified $CaCO_3$ and pH values during the Supplemental Remedial Investigation."
12. µg/L = micrograms per liter
13. ND = Not detected

Qualifiers:
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
B = The analyte was found in the associated analysis batch blank.

Table 6B
Remedial Investigation
Off-Site Sediment Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Phase Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	Freshwater Sediment Guidance Values - Class A (maximum value)	Freshwater Sediment Guidance Values - Class B (minimum value)	Freshwater Sediment Guidance Values - Class B (maximum value)	Freshwater Sediment Guidance Values - Class C (minimum value)	SRI SED1 SED1_0-0.5 19E0170-01 5/2/2019 0-0.5		SRI SED2 SED2_0-0.5 19E0170-03 5/2/2019 0-0.5		SRI SED3 SED3_0-0.5 19E0170-02 5/2/2019 0-0.5	
Volatile Organic Compounds (mg/kg)										
Acetone	~	~	~	~	0.0044	U	0.043		0.074	
Methyl Ethyl Ketone (2-Butanone)	~	~	~	~	0.0022	U	0.0027	U	0.021	
Methylene Chloride	~	~	~	~	0.0044	U	0.0053	U	0.012	J
Semivolatile Organic Compounds (mg/kg)										
Acenaphthylene	~	~	~	~	0.0482	U	0.106	U	0.162	JD
Anthracene	~	~	~	~	0.111	D	0.215	D	7.6	D
Benzo(a)Anthracene	~	~	~	~	0.614	D	0.875	D	4.52	D
Benzo(a)Pyrene	~	~	~	~	0.703	D	0.921	D	2.17	D
Benzo(b)Fluoranthene	~	~	~	~	0.789	D	0.999	D	2.28	D
Benzo(g,h,i)Perylene	~	~	~	~	0.453	D	0.541	D	0.616	D
Benzo(k)Fluoranthene	~	~	~	~	0.578	D	0.74	D	2	D
Bis(2-Ethylhexyl) Phthalate	360	360	~	~	0.761	D	0.178	JD	0.454	D
Carbazole	~	~	~	~	0.0738	JD	0.107	JD	0.154	U
Chrysene	~	~	~	~	0.723	D	0.982	D	4.97	D
Dibenz(a,h)Anthracene	~	~	~	~	0.125	D	0.148	JD	0.251	JD
Fluoranthene	~	~	~	~	1.51	D	2.33	D	6.98	D
Fluorene	~	~	~	~	0.0482	U	0.106	U	0.268	JD
Indeno(1,2,3-c,d)Pyrene	~	~	~	~	0.61	D	0.729	D	0.97	D
Phenanthrene	~	~	~	~	0.642	D	1.07	D	1.46	D
Pyrene	~	~	~	~	1.12	D	1.63	D	5.25	D
Pesticides (mg/kg)	~	~	~	~	ND		ND		ND	
Polychlorinated Biphenyls (mg/kg)	~	~	~	~	ND		ND		ND	
Inorganics (mg/kg)										
Aluminum	~	~	~	~	4,600		5,370		13,100	
Arsenic	10	10	33	33	2.49		1.96		4.57	
Barium	~	~	~	~	53.1		58.2		148	
Cadmium	1	1	5	5	0.45		0.404		**1.01**	
Calcium	~	~	~	~	20,000		11,100		5,570	
Chromium, Total	43	43	110	110	14.3		**43.9**		39.4	
Chromium, Trivalent	~	~	~	~	14.3		43.9		39.4	
Cobalt	~	~	~	~	5.31		5.51		12.3	
Copper	32	32	150	150	24.6		23.6		**56.2**	
Iron	~	~	~	~	29,800		18,100		25,900	
Lead	36	36	130	130	**38.4**		**180**		**201**	
Magnesium	~	~	~	~	9,200		8,260		7,660	
Manganese	~	~	~	~	317		283		314	
Mercury	0.2	0.2	1	1	0.0347	U	0.0384	U	0.0834	
Nickel	23	23	49	49	13.7		14.5		**28**	
Potassium	~	~	~	~	569		773		2,560	
Sodium	~	~	~	~	101		99.6		169	
Vanadium	~	~	~	~	11.4		12.9		42.2	
Zinc	120	120	460	460	**143**		**134**		**244**	
General Chemistry (%)										
Solids, Percent	~	~	~	~	86.4		78.1		53.6	
Per and Polyfluoroalkyl Substances (mg/kg)	~	~	~	~	ND		NA		ND	

Notes:
1. Sediment sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Screening and Assessment of Contaminated Sediment (SACS) Freshwater Sediment Guidance Values.
2. Only detected analytes are shown in the
3. Analytes detected with concentrations within Class B are bolded.
4. Analytes detected with concentrations within Class C are bolded and shaded.
5. Analytical results with reporting limits (RL) above Class A are italicized.
6. ~ = Regulatory limit for this analyte does not exist
7. bgs = below grade surface
8. mg/kg = milligrams per kilogram
9. % = percent
10. NA = Not analyzed
11. ND = Not detected

Qualifiers:
D = The concentration reported is a result of a diluted sample.
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 7
Remedial Investigation
QAQC Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Sample ID	**GWFB01_090518**		**GWFB01_090518**		**GWTB01_090518**		**GWTB02_090618**		**GWTB03_090718**		**SBEB01_080718**		**SBEB02_080818**		**SBEB03_080918**		**SBEB04_081018**		**SBEB05_081318**	
Laboraotry ID	**18I0168-07**		**18I0203-04**		**18I0168-08**		**18I0253-08**		**18I0296-06**		**18H0320-05**		**18H0372-06**		**18H0440-06**		**18H0525-12**		**18H0594-13**	
Sample Date	**9/5/2018**		**9/5/2018**		**9/5/2018**		**9/6/2018**		**9/7/2018**		**8/7/2018**		**8/8/2018**		**8/9/2018**		**8/9/2018**		**8/13/2018**	
Sample Type	**FB**		**FB**		**TB**		**TB**		**TB**		**EB**		**EB**		**EB**		**EB**		**EB**	
Volatile Organic Compounds (µg/L)																				
Acetone	1	UJ	NA		1	UJ	1	UJ	1	U	1.7	J	1.53	J	1.1	J	1.39	J	5	U
Semivolatile Organic Compounds (µg/L)																				
Naphthalene	0.0526	U	NA		NA		NA		NA		0.0571	U	0.0513	U	0.0513	U	0.0541	U	2.56	U
Pesticides (µg/L)	ND		NA		NA		NA		NA		ND		ND		ND		ND		ND	
Herbicides (µg/L)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Polychlorinated Biphenyls (µg/L)	ND		NA		NA		NA		NA		ND		ND		ND		ND		ND	
Inorganics (µg/L)																				
Calcium	50	R	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Calcium (Dissolved)	755		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium, Total	5	UJ	NA		NA		NA		NA		4.48		2.32		1.11	U	1	U	5	U
Copper	5	U	NA		NA		NA		NA		7.88		1.54		1.11	U	12.7		3	U
Cyanide	NA		NA		NA		NA		NA		10	R	10	R	10	R	10	U	10	U
Iron (Dissolved)	80.9	B	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Lead	7.81	J	NA		NA		NA		NA		1.11	U	1.11	U	1.11	U	1	U	5	U
Manganese	5	UJ	NA		NA		NA		NA		5.47		2.23		1.11	U	1	U	5	U
Nickel	5	UJ	NA		NA		NA		NA		3.96		1.11	U	1.11	U	1	U	5	U
Potassium	50	UJ	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Potassium (Dissolved)	87.8	J	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Sodium (Dissolved)	940		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Zinc	15	UJ	NA		NA		NA		NA		5.24	J	3.79		5.05	J	12.6	B	15	U
Zinc (Dissolved)	24.3		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Per and Polyfluoroalkyl Substances (ng/L)	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA	

Notes provided on Page 3.

Table 7
Remedial Investigation
QAQC Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Sample ID **Laboraotry ID** **Sample Date** **Sample Type**	**SBEB06_081418** **18H0655-12** **8/14/2018** **EB**	**SBEB07_081518** **18H0697-02** **8/15/2018** **EB**	**SBEB08_082018** **18H0937-07** **8/20/2018** **EB**	**SBEB09_050319** **19E0189-21** **5/3/2019** **EB**	**SBEB10_050219** **19E0157-04** **5/2/2019** **EB**	**SBEB11_050619** **19E0244-25** **5/6/2019** **EB**	**SWFB01_050219** **19E0144-05** **5/2/2019** **FB**	**SWTB01_050219** **19E0144-06** **5/2/2019** **TB**	**TB_050919** **19E0476-04** **5/9/2019** **TB**
Volatile Organic Compounds (µg/L)									
Acetone	1 U	1.17 J	4.08	1 U	1.79 J	NA	1 U	1 U	1 U
Semivolatile Organic Compounds (µg/L)									
Naphthalene	0.0588 U	0.0541 U	0.0513 U	0.0645 U	0.0513 U	NA	0.0947	NA	NA
Pesticides (µg/L)	ND	ND	ND	ND	NA	NA	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (µg/L)	ND	ND	ND	ND	NA	NA	ND	NA	NA
Inorganics (µg/L)									
Calcium	NA	NA	NA	55.6 U	NA	NA	113	NA	NA
Calcium (Dissolved)	NA	NA	NA	NA	NA	NA	67.2 B	NA	NA
Chromium, Total	6 U	1 U	1.11 U	5.56 U	NA	NA	5.56 U	NA	NA
Copper	3 U	1 U	1.11 U	22.2 U	NA	NA	22.2 U	NA	NA
Cyanide	10 U	10 U	10 U	10 U	NA	NA	10 U	NA	NA
Iron (Dissolved)	NA	NA	NA	NA	NA	NA	278 U	NA	NA
Lead	6 U	1 U	1.11 U	5.56 U	NA	NA	5.56 U	NA	NA
Manganese	6 U	1 U	1.11 U	5.56 U	NA	NA	5.56 U	NA	NA
Nickel	6 U	1 U	1.11 U	11.1 U	NA	NA	11.1 U	NA	NA
Potassium	NA	NA	NA	119	NA	NA	150	NA	NA
Potassium (Dissolved)	NA	NA	NA	NA	NA	NA	55.6 U	NA	NA
Sodium (Dissolved)	NA	NA	NA	NA	NA	NA	556 U	NA	NA
Zinc	17 U	6.35 U	5.59 U	27.8 U	NA	NA	27.8 U	NA	NA
Zinc (Dissolved)	NA	NA	NA	NA	NA	NA	27.8 U	NA	NA
Per and Polyfluoroalkyl Substances (ng/L)	NA	NA	NA	ND	ND	ND	ND	NA	NA

Notes provided on Page 3.

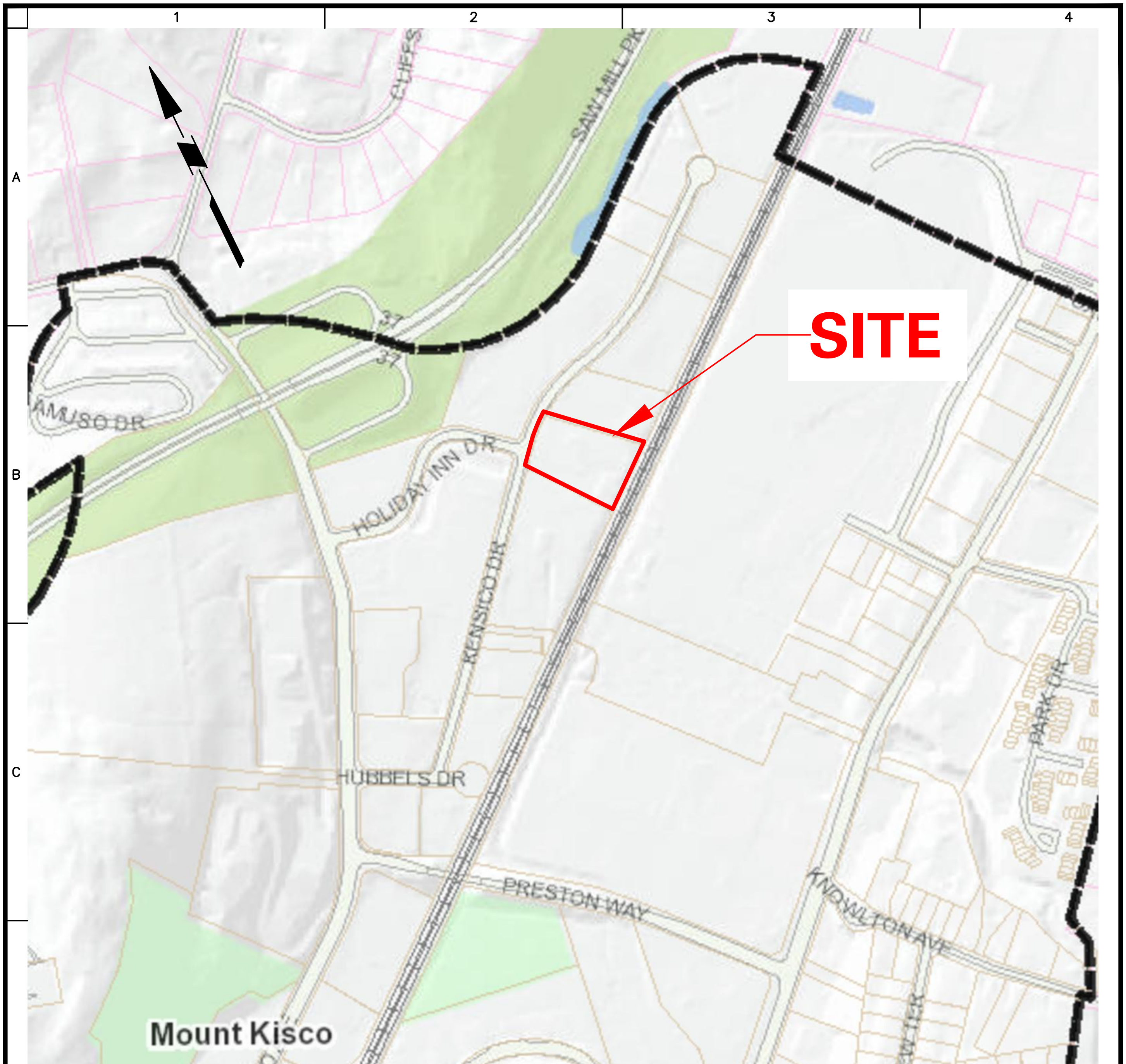
Table 7
Remedial Investigation
QAQC Sample Analytical Results Summary

41 Kensico Drive
Mount Kisco, New York
NYSDEC BCP Site No.: C360163
Langan Project No.: 190046301

Notes:
1. Only detected analytes are shown in the table.
2. μg/L = micrograms per liter
3. FB = Field Blank
4. TB = Trip Blank
5. EB = Equipment Blank
5. NA = Not Analyzed
6. ND = Not detected

Qualifiers:
B = The analyte was found in the associated analysis batch blank.
R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

FIGURES



NOTES:

1. BASE MAP IS REFERENCED FROM WESTCHESTER COUNTY 2-FOOT TOPOGRAPHIC MAP, ACCESSED FROM WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS ON OCTOBER 23, 2018.

500 0 250 500

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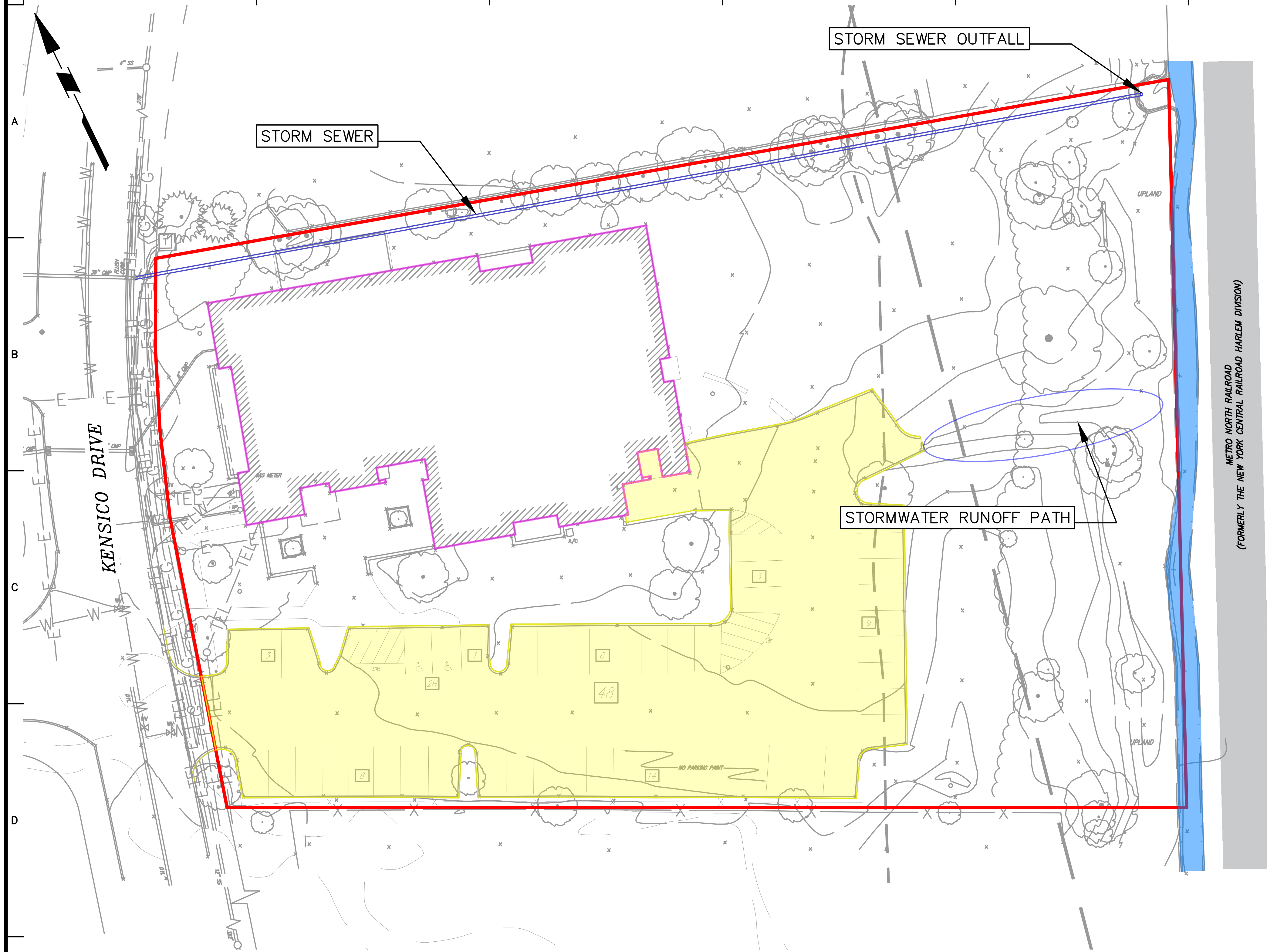
LANGAN	Project	Figure Title	Project No.	Figure No.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 21 Penn Plaza, 360 West 31st Street, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444 www.langan.com	**41 KENSICO DRIVE** SECTION 69.50, PARCEL No. 1–2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	**SITE LOCATION MAP**	190046301 Date 10/23/2018 Drawn By ERA Checked By TC	1

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 1 - Site Location Map.dwg Date: 7/18/2019 Time: 12:36 User: eburgess Style Table: Langan.stb Layout: ANSIA-BP



LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXISTING BUILDING FOOTPRINT
- APPROXIMATE EXTENT OF BRANCH BROOK STREAM
- APPROXIMATE EXTENT OF METRO NORTH RAILROAD
- APPROXIMATE EXTENT OF EXISTING PARKING LOT

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.

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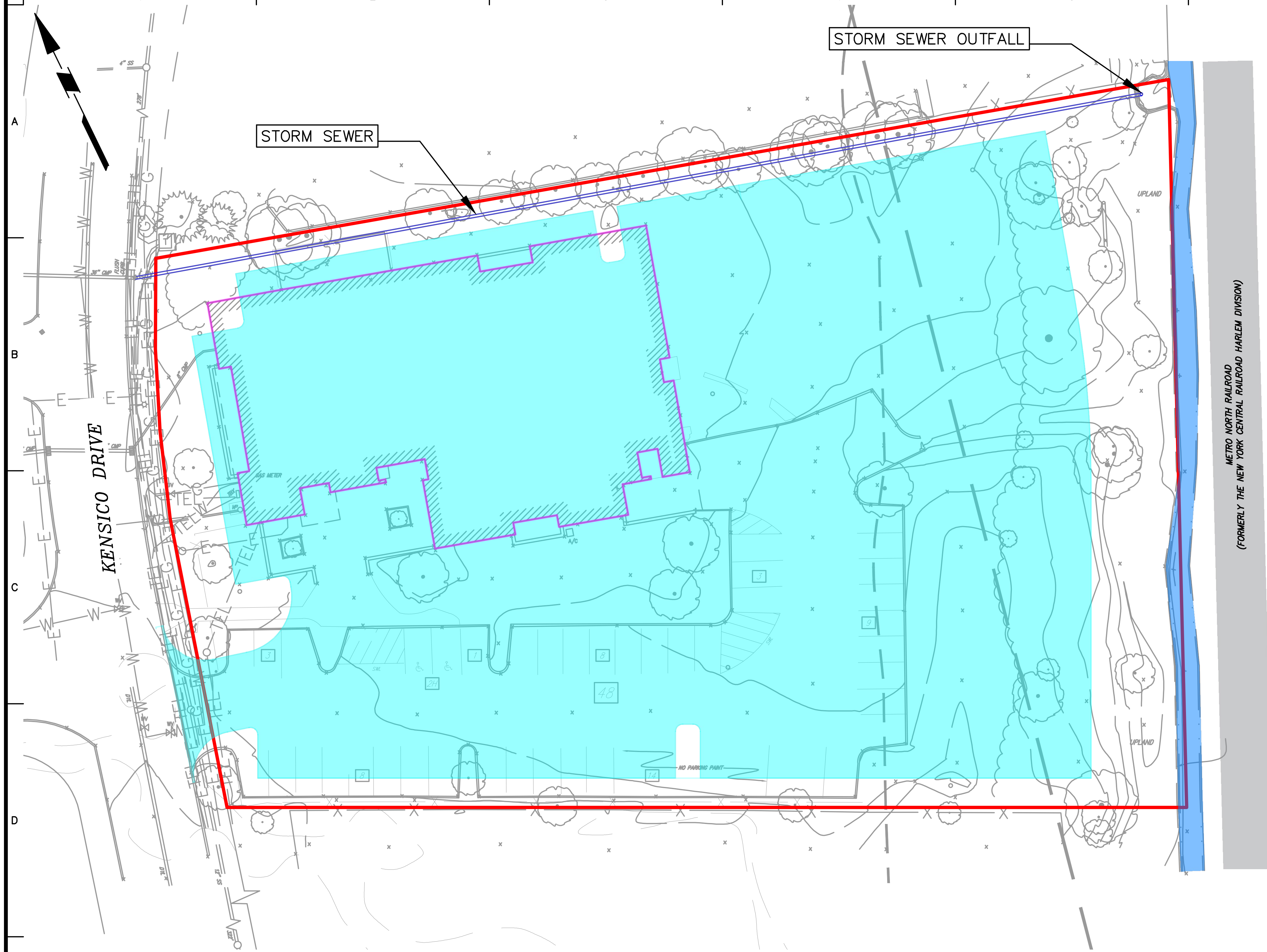
Project	Figure Title	Project No.	Figure No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No.1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SITE PLAN - CURRENT CONDITIONS	190046301 Date 07/01/2019 Drawn By EB Checked By GCW	2A



LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXISTING BUILDING FOOTPRINT
- APPROXIMATE EXTENT OF BRANCH BROOK STREAM
- APPROXIMATE EXTENT OF METRO NORTH RAILROAD
- APPROXIMATE EXTENT OF PROPOSED IMPERVIOUS SURFACES (PARKING LOT AND VEHICLE STORAGE AREA)

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.

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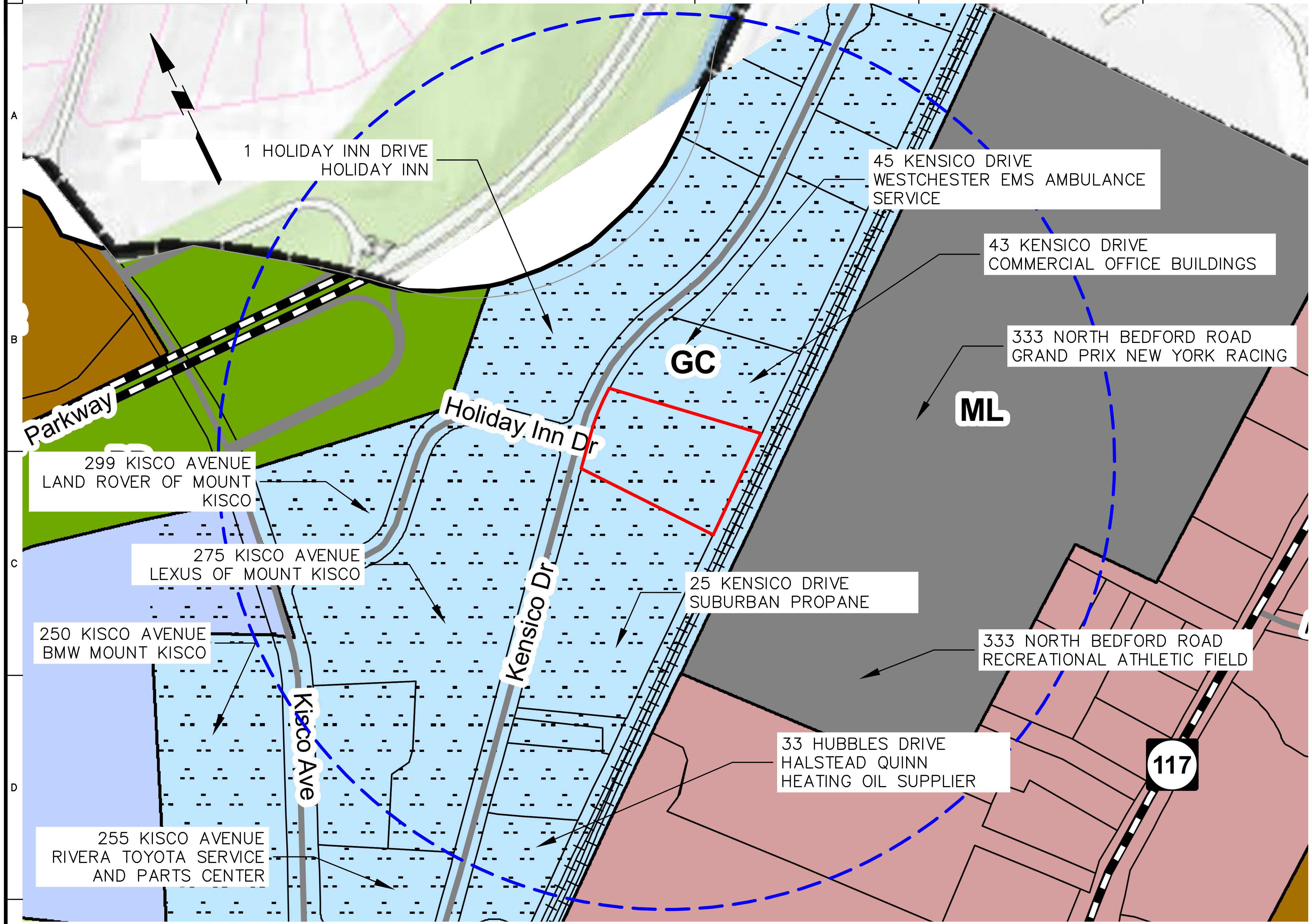
Project	Figure Title	Project No.	Figure No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No.1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SITE PLAN - PROPOSED DEVELOPMENT	190046301 Date 07/01/2019 Drawn By EB Checked By GCW	2B



LEGEND:

(red line)	APPROXIMATE SITE BOUNDARY
(blue dashed line)	1000-FOOT RADIUS

LAND USE LEGEND:

RM-	MEDIUM-DENSITY MULTI-FAMILY DISTRICT
ML	LIGHT MANUFACTURING DISTRICT
PWSF	PERSONAL WIRELESS SERVICE FACILITY OVERLAY DISTRICT
PD	PRESERVATION DISTRICT
CL	LIMITED COMMERCIAL DISTRICT
GC	GENERAL COMMERCIAL DISTRICT

NOTES:

1. BASE MAP IS REFERENCED FROM "ZONING DISTRICT MAP" FOR THE "VILLAGE/TOWN OF MOUNT KISCO", PREPARED BY KELLARD SESSIONS CONSULTING (JANUARY 8, 2018) AND THE WESTCHESTER COUNTY 2-FOOT TOPOGRAPHIC MAP, ACCESSED FROM WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS ON OCTOBER 23, 2018.

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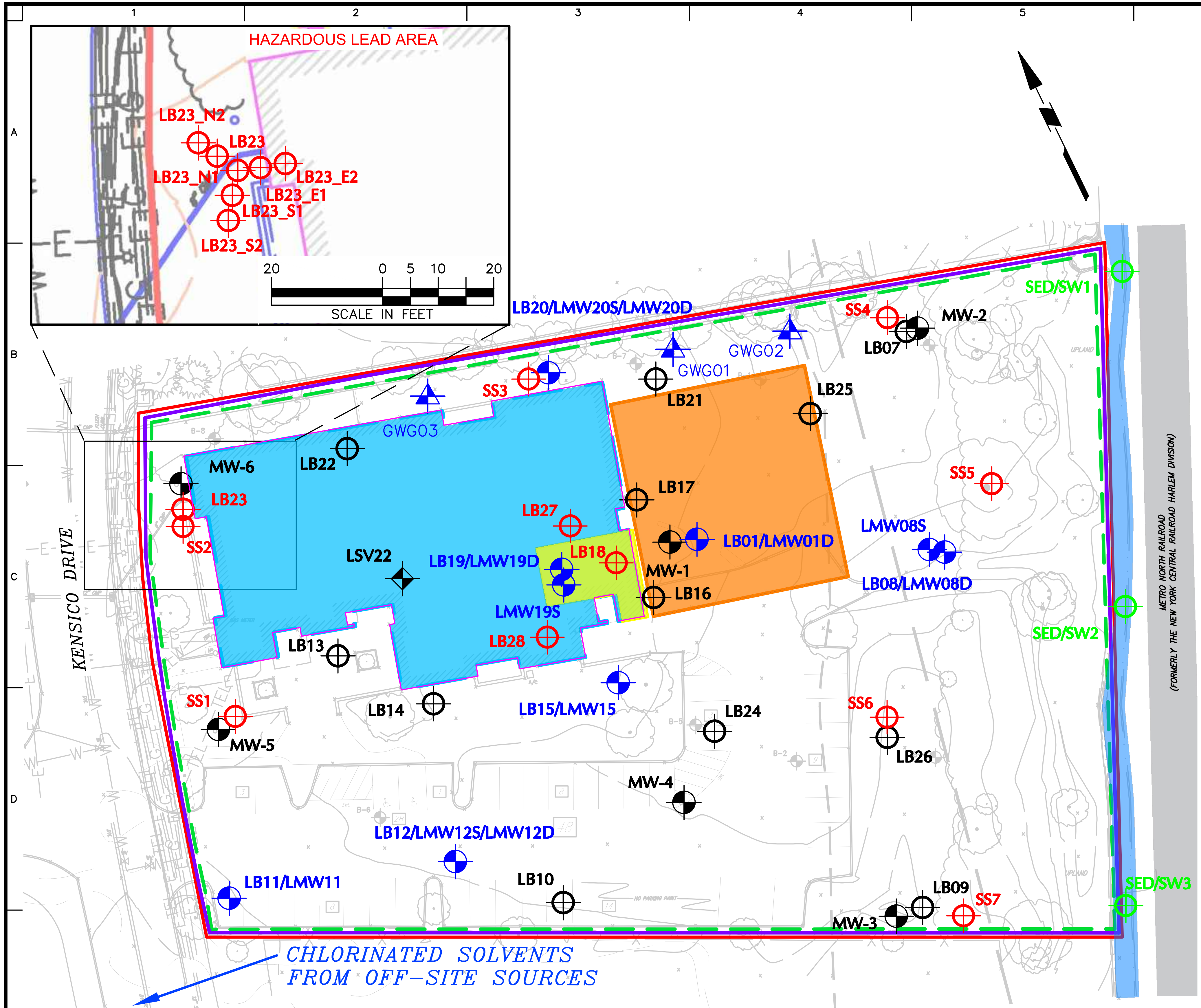
Project
41 KENSICO DRIVE
SECTION 69.50, PARCEL No. 1–2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title
SURROUNDING LAND USES AND SENSITIVE RECEPTORS MAP

Project No.	190046301
Date	10/23/2018
Drawn By	ERA
Checked By	TC
Figure No.	3

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 3 - Surrounding Land Use Map.dwg Date: 6/19/2019 Time: 20:15 User: eburgess Style Table: Langan.stb Layout: ANSIB-BL



LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING BUILDING
- APPROXIMATE EXTENT OF BRANCH BROOK STREAM
- APPROXIMATE EXTENT OF METRO NORTH RAILROAD
- B-2 PREVIOUS SOIL BORING (INSTALLED BY AECOM)
- MW-6 EXISTING MONITORING WELL (INSTALLED BY AECOM)
- LB23 RI SOIL BORING LOCATION
- LB12/LMW12D RI SOIL BORING AND MONITORING WELL LOCATION
- LMW19S RI MONITORING WELL LOCATION
- LSV22 RI SOIL VAPOR LOCATION
- SS1 SRI SOIL SAMPLE LOCATION
- GWG01 SRI MONIORING WELL LOCATION
- SED/SW1 SRI CO-LOCATED STREAM SEDIMENT AND SURFACE WATER LOCATION
- AOC1: FORMER TANK AREA
- AOC2: HISTORIC FILL
- AOC3: CVOCs IN GROUNDWATER
- AOC4: CVOCs IN SOIL VAPOR
- AOC5: FLOOR DRAINS
- AOC6: CHLORINATED SOLVENTS FROM OFF-SITE SOURCES

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLEd "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. THE REMEDIAL INVESTIGATION WAS PERFORMED BY LANGAN BETWEEN AUGUST AND SEPTEMBER OF 2018.
3. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE OBTAINED FROM GROUND SURVEY PREFORMED BY LANGAN IN SEPTEMBER 2018.
4. RI = REMEDIAL INVESTIGATION
5. SRI = SUPPLEMENTAL REMEDIAL INVESTIGATION
6. AOC = AREA OF CONCERN
7. CVOC = CHLORINATED VOLATILE ORGANIC COMPOUND

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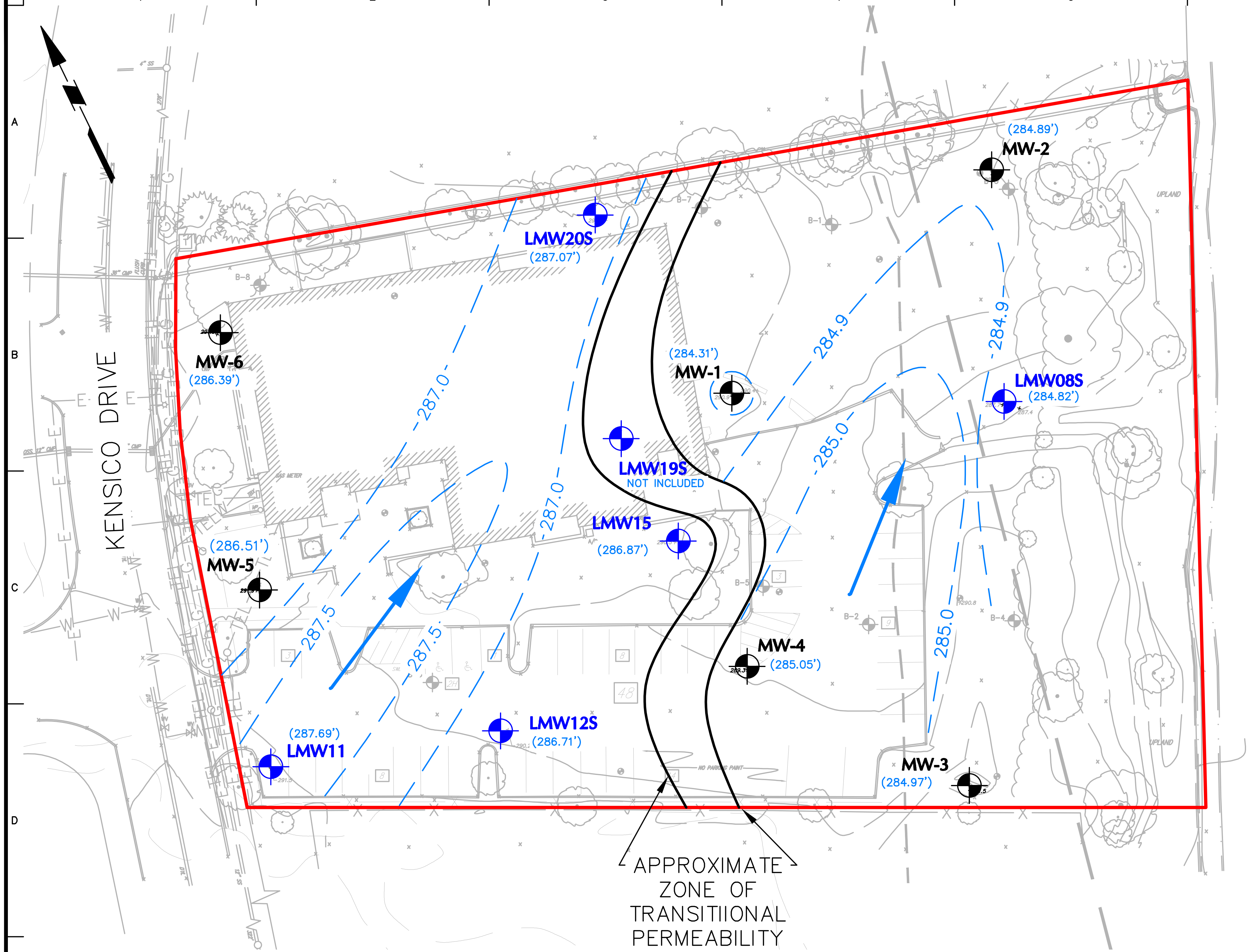
Project	Figure Title	Project No. 190046301	Figure No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	AREAS OF CONCERN (PRE-RI AND SRI) AND SAMPLE LOCATION MAP	Date 10/04/2018 Drawn By KT Checked By TC	4

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 4 - AOC and Sample Location Map.dwg Date: 7/17/2019 Time: 18:16 User: eburgess Style Table: Langan.stb Layout: Layout1



LEGEND:

APPROXIMATE SITE BOUNDARY

MW-4 (285.05') PREVIOUSLY INSTALLED BY AECOM MONITORING WELL LOCATION (GROUNDWATER ELEVATION)

LMW11 (287.69') REMEDIAL INVESTIGATION MONITORING WELL LOCATION (GROUNDWATER ELEVATION)

287.5 GROUNDWATER CONTOUR ELEVATION

INFERRED GROUNDWATER FLOW DIRECTION

SUMMARY OF GROUNDWATER FLOW:

THE SITE HAS TWO DISTINCT GROUNDWATER SYSTEMS AND IS CHARACTERIZED BY A ZONE OF TRANSITIONAL PERMEABILITY IN THE CENTRAL PORTION OF THE SITE THAT TRENDS NORTH-SOUTH. THE SHALLOW MONITORING WELLS CLUSTER ABOUT A HEAD ELEVATION (EL) OF 285 FEET ON THE EASTERN HALF OF THE SITE, AND ABOUT EL 287 AND 288 ON THE WESTERN HALF. GROUNDWATER IN THE WESTERN AND EASTERN HALVES OF THE SITE FLOWS FROM SOUTHWEST TO NORTHEAST TOWARDS BRANCH BROOK WITH A HYDRAULIC GRADIENT OF ABOUT 0.002 FEET PER FEET. UNDERGROUND UTILITIES AND OTHER SUBSURFACE STRUCTURES OR PREVIOUSLY DISTURBED AREAS (I.E., PREVIOUS TANK GRAVE, BUILDING FOUNDATION) MAY LOCALLY INFLUENCE THE DIRECTION OF GROUNDWATER FLOW.

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. GROUNDWATER ELEVATIONS ARE BASED ON A SYNOPTIC ROUND OF GROUNDWATER GAUGING ON SEPTEMBER 5, 2018.
3. GROUNDWATER CONTOURS INTERVAL IS 0.5 FEET
4. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
5. DEEP MONITORING WELLS THAT DO NOT CONTRIBUTE TO THE GROUNDWATER CONTOUR EVALUATION ARE NOT SHOWN.
6. GWG01 THROUGH GWG03 INSTALLED IN MAY 2019 ARE NOT INCLUDED ON THIS MAP OR INCLUDED IN GROUNDWATER CONTOUR CALCULATIONS

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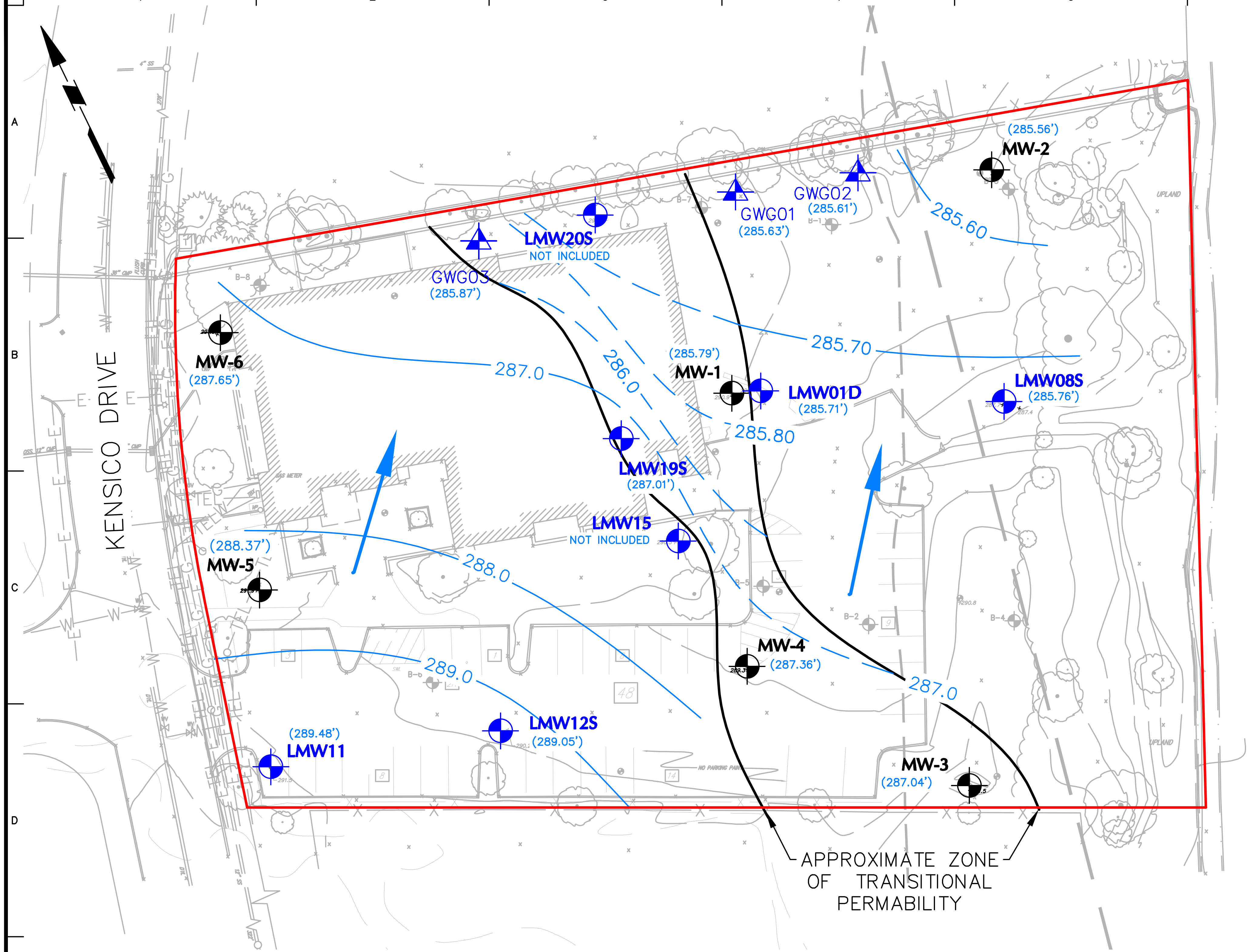
Project	Figure Title	Project No. 190046301	Figure No.
41 KENSICO DRIVE	GROUNDWATER CONTOUR MAP	Date 09/19/2018	5A
BLOCK No. 1, LOT No.2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	2018	Drawn By JFY	
		Checked By TC	

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 5 - Groundwater Contour Map - Shallow.dwg Date: 11/1/2019 Time: 10:33 User: eburgess Style Table: Langan.stb Layout: ANSIB-BL



LEGEND:

APPROXIMATE SITE BOUNDARY

MW-4 (285.05') PREVIOUSLY INSTALLED BY AECOM MONITORING WELL LOCATION (GROUNDWATER ELEVATION)

LMW11 (287.69') REMEDIAL INVESTIGATION MONITORING WELL LOCATION (GROUNDWATER ELEVATION)

GWG01 (285.63') SUPPLEMENTAL REMEDIAL INVESTIGATION MONITORING WELL LOCATION (GROUNDWATER ELEVATION)

287.0 GROUNDWATER CONTOUR ELEVATION

INFERRED GROUNDWATER FLOW DIRECTION

SUMMARY OF GROUNDWATER FLOW:

THE SITE HAS TWO DISTINCT GROUNDWATER SYSTEMS AND IS CHARACTERIZED BY A TRANSITIONAL ZONE OF LOW PERMEABILITY IN THE CENTRAL PORTION OF THE SITE THAT TRENDS NORTH-SOUTH. THE SHALLOW MONITORING WELLS CLUSTER ABOUT A HEAD ELEVATION (EL) OF 285.5 FEET ON THE EASTERN HALF OF THE SITE, AND ABOUT EL 288 AND 289 ON THE WESTERN HALF. GROUNDWATER IN THE WESTERN AND EASTERN HALVES OF THE SITE FLOWS FROM SOUTHWEST TO NORTHEAST TOWARDS BRANCH BROOK WITH A HYDRAULIC GRADIENT OF ABOUT 0.002 FEET PER FEET. UNDERGROUND UTILITIES AND OTHER SUBSURFACE STRUCTURES OR PREVIOUSLY DISTURBED AREAS (I.E., PREVIOUS TANK GRAVE, BUILDING FOUNDATION) MAY LOCALLY INFLUENCE THE DIRECTION OF GROUNDWATER FLOW.

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. GROUNDWATER ELEVATIONS ARE BASED ON A SYNOPTIC ROUND OF GROUNDWATER GAUGING ON MAY 9, 2019.
3. GROUNDWATER CONTOURS INTERVAL VARIES
4. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
5. DEEP MONITORING WELLS THAT DO NOT CONTRIBUTE TO THE GROUNDWATER CONTOUR EVALUATION ARE NOT SHOWN.
6. LMW20S AND LMW15 ARE NOT INCLUDED IN GROUNDWATER CONTOUR CALCULATIONS BECAUSE THEIR SCREENS DO NOT INTERSECT THE WATER TABLE.

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LANGAN Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 707 Westchester Avenue, Suite 304 White Plains, NY 10604 T: 914.323.7400 F: 914.323.7401 www.langan.com	Project 41 KENSICO DRIVE BLOCK No. 1, LOT No.2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	Figure Title GROUNDWATER CONTOUR MAP 2019	Project No. 190046301 Date 10/02/2019 Drawn By EB Checked By GCW	Figure No. 5B

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 5 - Groundwater Contour Map - Shallow - 2019.dwg Date: 11/1/2019 Time: 10:29 User: eburgess Style Table: Langan.stb Layout: ANSIB-BL

Sample ID Sample Date Sample Depth (feet bgs)	LB23_4-5 8/13/2018 4-5	SBDUP02_081318 8/13/2018 4-5	LB23_12-13 8/13/2018 12-13	LB23_0-2 5/6/2019 0-2	SBDUP06_050619 5/6/2019 0-2	LB23_2-4 5/6/2019 2-4	LB23_6-8 5/6/2019 6-8	LB23_8-10 5/6/2019 8-10
VOCs (mg/kg)	ND	ND	NE	NA	NA	NA	NA	NA
SVOCs (mg/kg)	NE	NE	ND	NA	NA	NA	NA	NA
Pesticides (mg/kg)	NE	ND	NA	NA	NA	NA	NA	NA
PCBs (mg/kg)	ND	ND	NA	NA	NA	NA	NA	NA
Inorganics (mg/kg)								
Copper	**121** J	NE	NA	NA	NA	NA	NA	NA
Lead	**2880** J	**3690** J	NE	**95.5**	**97.4**	**201**	**525**	NA
PFAS (µg/kg)	NA	NA	NA	NA	NA	NA	ND	NA

Sample ID Sample Date Sample Depth (inches bgs)	SS3_0-2IN 5/3/2019 0-2	SS3_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**144**	**245**
PFAS (µg/kg)	2.6	0.8

Sample ID Sample Date Sample Depth (feet bgs)	LB20_5-6 8/20/2018 5-6	LB20_32.5-33.5 8/20/2018 32.5-33.5	LB20_47-48 8/20/2018 47-48
VOCs (mg/kg)			
Trichloroethene (TCE)	NE	**0.89** D	NE
SVOCs (mg/kg)	NE	ND	ND
Pesticides (mg/kg)			
4,4'-DDT	**0.00555** D	NA	NA
PCBs (mg/kg)	ND	NA	NA
Inorganics (mg/kg)			
Lead	**710**	NA	NA
Mercury	**0.204**	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB21_5-6 8/10/2018 5-6	LB21_18-19 8/10/2018 18-19
VOCs (mg/kg)		
Trichloroethene (TCE)	ND	**2.5** D
SVOCs (mg/kg)	NE	ND
Pesticides (mg/kg)		
4,4'-DDD	**0.00655** J	NA
4,4'-DDE	**0.00493** J	NA
4,4'-DDT	**0.00577** J	NA
PCBs (mg/kg)	ND	NA
Inorganics (mg/kg)		
Lead	**838**	NA
Zinc	**197**	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB17_22-24 8/10/2018 22-24	LB17_43-44 8/10/2018 43-44	LB17_49-50 8/10/2018 49-50
VOCs (mg/kg)			
Trichloroethene (TCE)	**10** D	**5.5** D	**0.74** D
SVOCs (mg/kg)	ND	ND	ND

Sample ID Sample Date Sample Depth (inches bgs)	SS4_0-2IN 5/3/2019 0-2	SS4_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	ND	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**65.2**	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB19_5-6 8/14/2018 5-6	LB19_34.5-35.5 8/14/2018 34.5-35.5	LB19_44-45 8/14/2018 44-45
VOCs (mg/kg)			
Acetone	NE	NE	**0.051**
Trichloroethene (TCE)	ND	**2** D	NE
SVOCs (mg/kg)	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA
PCBs (mg/kg)	ND	NA	NA
Inorganics (mg/kg)			
Chromium, Trivalent	**34.9**	NA	NA
Copper	**83.2**	NA	NA
Lead	**163**	NA	NA

Sample ID Sample Date Sample Depth (inches bgs)	SS2_0-2IN 5/3/2019 0-2	SS2_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**113**	**102**
Mercury	**0.214**	**0.355**

Sample ID Sample Date Sample Depth (feet bgs)	LB28_3-4 5/2/2019 3-4
VOCs (mg/kg)	
Acetone	**0.065**
SVOCs (mg/kg)	
Benzo(a)Anthracene	**3.29** D
Benzo(a)Pyrene	**3.06** D
Benzo(b)Fluoranthene	**2.81** D
Benzo(k)Fluoranthene	**2.13** D
Chrysene	**2.88** D
Dibenz(a,h)Anthracene	**0.466** D
Indeno(1,2,3-c,d)Pyrene	**2.15** D
PFAS (µg/kg)	ND

Sample ID Sample Date Sample Depth (feet bgs)	LB13_5-6 8/13/2018 5-6	LB13_23-24 8/13/2018 23-24	LB13_29-30 8/13/2018 29-30
VOCs (mg/kg)			
Acetone	**0.065**	NE	ND
Trichloroethene (TCE)	NE	**3.7** D	**1** D
SVOCs (mg/kg)	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA
PCBs (mg/kg)	ND	NA	NA
Inorganics (mg/kg)	NE	NA	NA

Sample ID Sample Date Sample Depth (inches bgs)	SS1_0-2IN 5/3/2019 0-2	SS1_10-12IN 5/3/2019 10-12	SBDUP04_050319 5/3/2019 10-12
VOCs (mg/kg)	NE	NE	NE
SVOCs (mg/kg)	NE	DNC	ND
Pesticides (mg/kg)	ND	ND	ND
PCBs (mg/kg)	ND	ND	ND
Inorganics (mg/kg)			
Lead	**119**	NE	NE
PFAS (µg/kg)	1.6	ND	ND

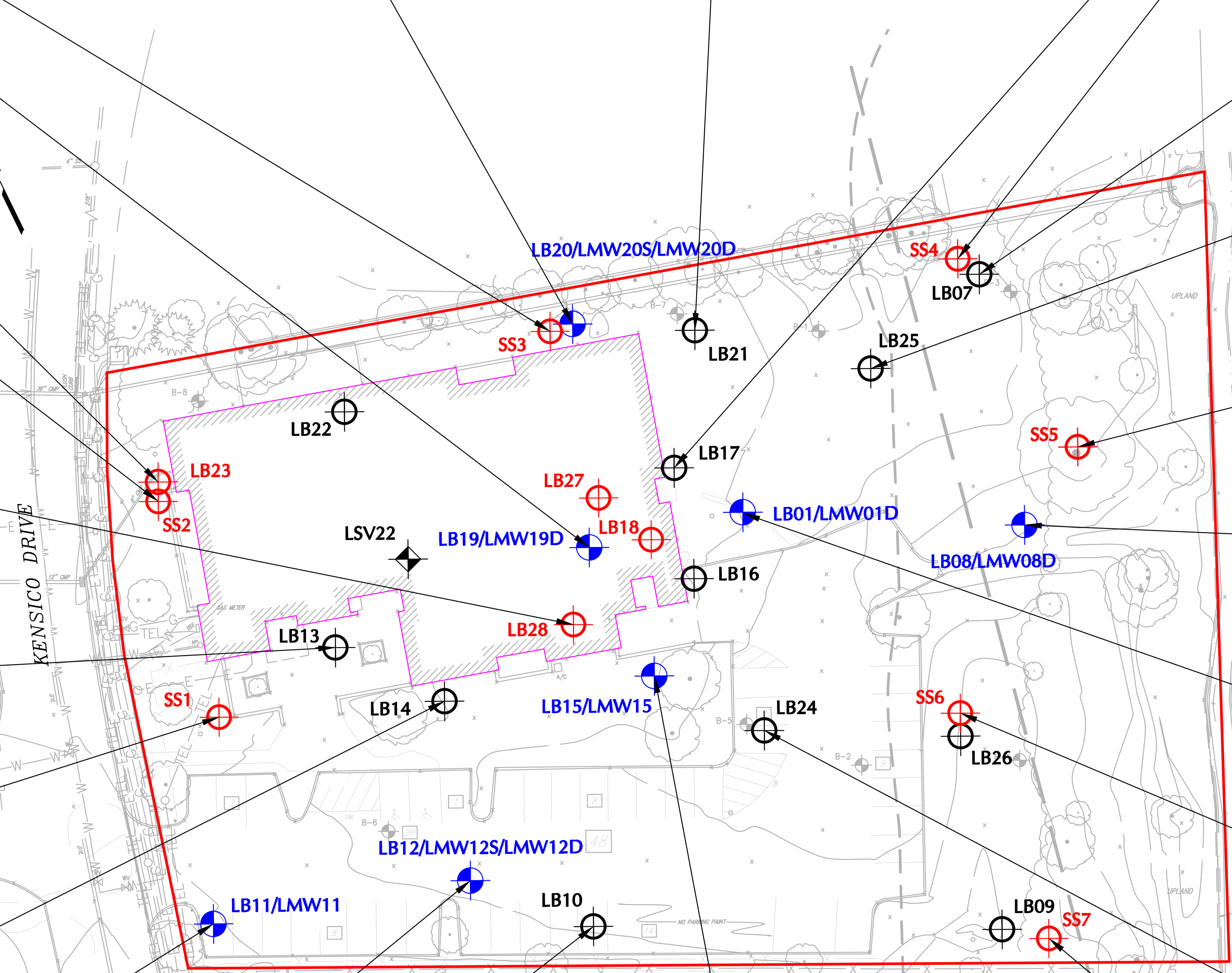
Sample ID Sample Date Sample Depth (feet bgs)	LB14_4-5 8/13/2018 4-5	LB14_13-14 8/13/2018 13-14	LB14_29-30 8/13/2018 29-30
VOCs (mg/kg)			
Trichloroethene (TCE)	NE	**9.8** D	**2.6** D
SVOCs (mg/kg)	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA
PCBs (mg/kg)	ND	NA	NA
Inorganics (mg/kg)	NE	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB11_4.5-5.5 8/13/2018 4.5-5.5	LB11_11-12 8/13/2018 11-12	LB11_23-24 8/13/2018 23-24
VOCs (mg/kg)			
Trichloroethene (TCE)	NE	**8.3** D	NE
SVOCs (mg/kg)	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA
PCBs (mg/kg)	ND	NA	NA
Inorganics (mg/kg)	NE	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB12_0.5-2 8/15/2018 0.5-2	LB12_2-3 8/14/2018 2-3	LB12_19-20 8/14/2018 19-20	LB12_29-30 8/14/2018 29-30	LB12_42-43 8/14/2018 42-43
VOCs (mg/kg)					
Acetone	**0.063**	NE	NE	NE	**0.067**
Trichloroethene (TCE)	ND	ND	**7.6** D	**2.8** D	NE
SVOCs (mg/kg)	ND	ND	ND	ND	ND
Pesticides (mg/kg)					
4,4'-DDT	**0.00413** D	ND	ND	ND	ND
PCBs (mg/kg)	ND	ND	ND	ND	ND
Inorganics (mg/kg)					
Lead	**155**	NE	NE	NE	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB10_2-3 8/20/2018 2-3	SBDUP03_082018 8/20/2018 2-3	LB10_31-32 8/20/2018 31-32	LB10_45-46 8/20/2018 45-46
VOCs (mg/kg)				
Acetone	NE	**0.1** J	ND	ND
Trichloroethene (TCE)	ND	ND	**1.7** D	NE
SVOCs (mg/kg)	ND	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA	NA
PCBs (mg/kg)	ND	NA	NA	NA
Inorganics (mg/kg)	NE	NA	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB15_5-6 8/14/2018 5-6	LB15_33-34 8/14/2018 33-34	LB15_44-45 8/14/2018 44-45	LB15_53-54 8/14/2018 53-54
VOCs (mg/kg)				
Trichloroethene (TCE)	ND	**3.5** D	**0.85** D	**13** D
SVOCs (mg/kg)	ND	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA	NA
PCBs (mg/kg)	ND	NA	NA	NA
Inorganics (mg/kg)	NE	NA	NA	NA



Sample ID Sample Date Sample Depth (feet bgs)	LB07_7-8 8/8/2018 7-8	LB07_18-19 8/8/2018 18-19
VOCs (mg/kg)		
Acetone	**0.053**	NE
SVOCs (mg/kg)	ND	ND
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Chromium, Trivalent	**44.2**	NE
Mercury	**0.251**	ND

Sample ID Sample Date Sample Depth (feet bgs)	LB25_7-8 8/8/2018 7-8	LB25_15-16 8/8/2018 15-16	SBDUP01_080818 8/8/2018 15-16
VOCs (mg/kg)			
Acetone	**0.15**	NE	NE
SVOCs (mg/kg)	ND	ND	ND
Pesticides (mg/kg)	ND	ND	ND
PCBs (mg/kg)	ND	ND	ND
Inorganics (mg/kg)			
Chromium, Trivalent	**47.6**	**31.4** J	NE
Lead	**350**	ND	NE
Mercury	**0.181**	ND	ND
Zinc	**116**	NE	NE

Sample ID Sample Date Sample Depth (inches bgs)	SS5_0-2IN 5/3/2019 0-2	SS5_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**69.9**	**63.9**
Mercury	**0.217**	**0.192**
PFAS (µg/kg)	1.7	1.7

Sample ID Sample Date Sample Depth (feet bgs)	LB08_4-5 8/7/2018 4-5	LB08_15.5-16.5 8/7/2018 15.5-16.5	LB08_51-52 8/7/2018 51-52	LB08_62-63 8/8/2018 62-63	LB08_69-70 8/8/2018 69-70
VOCs (mg/kg)					
Trichloroethene (TCE)	ND	ND	**0.82** D	**0.57** D	NE
SVOCs (mg/kg)	NE	ND	ND	ND	ND
Pesticides (mg/kg)	ND	ND	ND	NA	NA
PCBs (mg/kg)	ND	ND	ND	NA	NA
Inorganics (mg/kg)					
Chromium, Trivalent	**47.4**	NE	NE	NA	NA
Copper	**132**	NE	NE	NA	NA
Lead	**666**	NE	NE	NA	NA
Nickel	**34.1**	NE	NE	NA	NA
Zinc	**116**	NE	NE	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	LB01_4-5 8/9/2018 4-5	LB01_29-30 8/9/2018 29-30	LB01_35-37 8/9/2018 35-37	LB01_48.5-49.5 8/9/2018 48.5-49.5	LB01_54-55 8/9/2018 54-55
VOCs (mg/kg)					
Trichloroethene (TCE)	NE	**8.8** D	**4.6** D	**2.9** D	**1.2** D
SVOCs (mg/kg)	ND	ND	ND	ND	ND
Pesticides (mg/kg)	ND	NA	NA	NA	NA
PCBs (mg/kg)	ND	NA	NA	NA	NA
Inorganics (mg/kg)					
Lead	**92.1**	NA	NA	NA	NA

Sample ID Sample Date Sample Depth (inches bgs)	SS6_0-2IN 5/3/2019 0-2	SS6_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	ND
Pesticides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Chromium, Trivalent	NE	**35.4**
Lead	**101**	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB24_1-2 8/10/2018 1-2	LB24_13-14 8/10/2018 13-14
VOCs (mg/kg)		
Trichloroethene (TCE)	ND	**2.4** D
SVOCs (mg/kg)	ND	ND
Pesticides (mg/kg)	ND	NA
PCBs (mg/kg)	ND	NA
Inorganics (mg/kg)	NE	NA

Sample ID Sample Date Sample Depth (inches bgs)	SS7_0-2IN 5/3/2019 0-2	SS7_10-12IN 5/3/2019 10-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	ND
Pesticides (mg/kg)		
4,4'-DDT	**0.00408** D	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Chromium, Trivalent	**30.4**	NE
Lead	**132**	NE
Zinc	**477**	NE
PFAS (µg/kg)	2.9	ND

LEGEND

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING BUILDING
- LB23 — RI SOIL BORING LOCATION
- LB12/LMW12D — RI SOIL BORING AND MONITORING WELL LOCATION
- SS1 — SRI SOIL SAMPLE LOCATION

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE ARE APPROXIMATE
3. RI = REMEDIAL INVESTIGATION
4. SRI = SUPPLEMENTAL REMEDIAL INVESTIGATION
5. SOIL ANALYTICAL RESULTS ARE COMPARED TO TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (SCO) AND RESTRICTED USE COMMERCIAL SCO.
6. CONCENTRATIONS ABOVE THE UNRESTRICTED USE SCO ARE BOLDED.
7. CONCENTRATIONS ABOVE THE COMMERCIAL USE SCO ARE SHADED AND BOLDED.
8. RESULTS ARE NOT SHOWN FOR SAMPLE LOCATIONS THAT DID NOT EXCEED PART 375 SCO.
9. ANALYTICAL RESULTS ARE ONLY SHOWN FOR BORINGS CONTAINING CONCENTRATIONS ABOVE THE COMPARISON CRITERIA.
10. PFAS CONCENTRATIONS SHOWN ARE TOTAL CONCENTRATIONS OF ALL DETECTED PFAS COMPOUNDS.
11. BGS = BELOW GRADE SURFACE.
12. mg/kg = MILLIGRAM PER KILOGRAM
13. µg/kg = MICROGRAM PER KILOGRAM
14. ND = THE ANALYTE WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE REPORTING LIMIT (RL)
15. NE = THE ANALYTE DID NOT EXCEED COMPARISON CRITERIA.
16. DNC = ONE OR MORE COMPOUNDS DETECTED WITH NO APPLICABLE CRITERIA.
17. NA = NOT ANALYZED
18. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE RL; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
19. D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE.
20. PCB = POLYCHLORINATED BIPHENYL
21. SVOC = SEMIVOLATILE ORGANIC COMPOUND
22. VOC = VOLATILE ORGANIC COMPOUND
23. PFAS = PER- AND POLYFLUOROALKYL SUBSTANCES

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs
VOCs (mg/kg)			
Acetone	67-64-1	0.05	500
Trichloroethene (TCE)	79-01-6	0.47	200
SVOCs (mg/kg)			
Benzo(a)Anthracene	56-55-3	1	5.6
Benzo(a)Pyrene	50-32-8	1	1
Benzo(b)Fluoranthene	205-99-2	1	5.6
Benzo(k)Fluoranthene	207-08-9	0.8	56
Chrysene	218-01-9	1	56
Dibenz(a,h)Anthracene	53-70-3	0.33	0.56
Indeno(1,2,3-c,d)Pyrene	193-39-5	0.5	5.6
Pesticides (mg/kg)			
4,4'-DDD	72-54-8	0.0033	92
4,4'-DDE	72-55-9	0.0033	62
4,4'-DDT	50-29-3	0.0033	47
Inorganics (mg/kg)			
Chromium, Trivalent	16065-83-1	30	1,500
Copper	7440-50-8	50	270
Lead	7439-92-1	63	1,000
Mercury	7439-97-6	0.18	2.8
Nickel	7440-02-0	30	310
Zinc	7440-66-6	109	10,000

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Project
41 KENSICO DRIVE
SECTION No. 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title
SOIL SAMPLE ANALYTICAL RESULTS MAP

Project No. 190046301
Date 6/3/2019
Drawn By EB
Checked By GCW
Figure No. 6A

PROJECT NO. ########

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 6 - Soil Sample Analytical Results Map_with SRI.dwg Date: 10/31/2019 Time: 14:54 User: eburgess Style Table: Langan.stb Layout: ANSID-BL

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use - Commercial SCOs	USEPA RCRA TCLP
Inorganics (mg/kg)				
Lead	7439-92-1	63	1,000	~
TCLP - Inorganics (mg/L)				
Lead	7439-92-1	~	~	5

LEGEND:

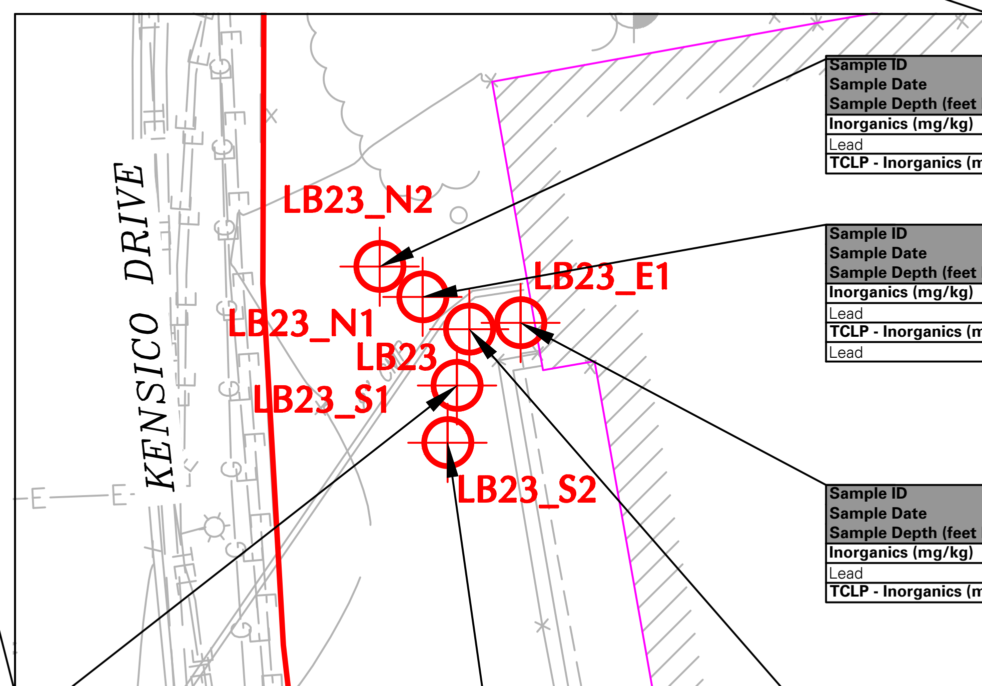
APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

LB23 LEAD DELINEATION SOIL BORING LOCATION

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. ALL LOCATIONS APPROXIMATE.
3. SOIL ANALYTICAL RESULTS ARE COMPARED TO TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (SCO), RESTRICTED USE COMMERCIAL SCO, AND TO TITLE 40 OF THE CODE OF FEDERAL REGULATIONS RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) REGULATIONS MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC.
4. CONCENTRATIONS ABOVE THE UNRESTRICTED USE SCO ARE BOLDED.
5. CONCENTRATIONS ABOVE THE COMMERCIAL USE SCO ARE SHADED AND BOLDED.
6. CONCENTRATIONS ABOVE THE RCRA MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC REGULATORY LEVEL ARE RED.
7. BGS= BELOW GRADE SURFACE
8. mg/kg = MILLIGRAMS PER KILOGRAM
9. mg/L = MILLIGRAMS PER LITER
10. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE RL; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
11. NE = THE ANALYTE WAS DETECTED BUT DID NOT EXCEED COMPARISON CRITERIA
12. ND = THE ANALYTE WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE REPORTING LIMIT (RL)
13. NA = NOT ANALYZED



Sample ID Sample Date Sample Depth (feet bgs)	LB23_N2_0-2 5/6/2019 0-2	LB23_N2_2-4 5/6/2019 2-4	LB23_N2_4-6 5/6/2019 4-6
Inorganics (mg/kg)			
Lead	**102**	**521**	**103**
TCLP - Inorganics (mg/L)	ND	NE	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB23_N1_0-2 5/6/2019 0-2	LB23_N1_2-4 5/6/2019 2-4	LB23_N1_4-6 5/6/2019 4-6	LB23_N1_6-8 5/6/2019 6-8
Inorganics (mg/kg)				
Lead	**3380**	**208**	**1600**	**86.4**
TCLP - Inorganics (mg/L)				
Lead	5.79	12.6	20.7	ND

Sample ID Sample Date Sample Depth (feet bgs)	LB23_E1_0-2 5/6/2019 0-2	LB23_E1_2-4 5/6/2019 2-4	LB23_E1_4-6 5/6/2019 4-6	LB23_E1_6-8 5/6/2019 6-8
Inorganics (mg/kg)				
Lead	**204**	**208**	**202**	**874**
TCLP - Inorganics (mg/L)	NE	NE	NE	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB23_4-5 8/13/2018 4-5	SBDUP02_081318 8/13/2018 4-5	LB23_12-13 8/13/2018 12-13	LB23_0-2 5/6/2019 0-2	SBDUP06_050619 5/6/2019 0-2	LB23_2-4 5/6/2019 2-4	LB23_6-8 5/6/2019 6-8	LB23_8-10 5/6/2019 8-10
Inorganics (mg/kg)								
Lead	**2880 J**	**3690 J**	NA	**95.5**	**97.4**	**201**	**525**	NE
TCLP - Inorganics (mg/L)								
Lead	NA	NA	NA	ND	ND	ND	29.1	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB23_S1_0-2 5/6/2019 0-2	LB23_S1_2-4 5/6/2019 2-4	LB23_S1_4-6 5/6/2019 4-6	LB23_S1_6-8 5/6/2019 6-8
Inorganics (mg/kg)				
Lead	**65**	**915**	NE	NE
TCLP - Inorganics (mg/L)				
Lead	NE	13.7	64.2	NE

Sample ID Sample Date Sample Depth (feet bgs)	LB23_S2_0-2 5/6/2019 0-2	LB23_S2_2-4 5/6/2019 2-4	LB23_S2_4-6 5/6/2019 4-6
Inorganics (mg/kg)			
Lead	**120**	**832**	**678**
TCLP - Inorganics (mg/L)			
Lead	NE	50.7	NE

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Project

41 KENSICO DRIVE

SECTION 69.50, PARCEL No. 1–2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title

HAZARDOUS LEAD IN SOIL DELINEATION ANALYTICAL RESULTS MAP

Project No. 190046301

Date 6/11/2019

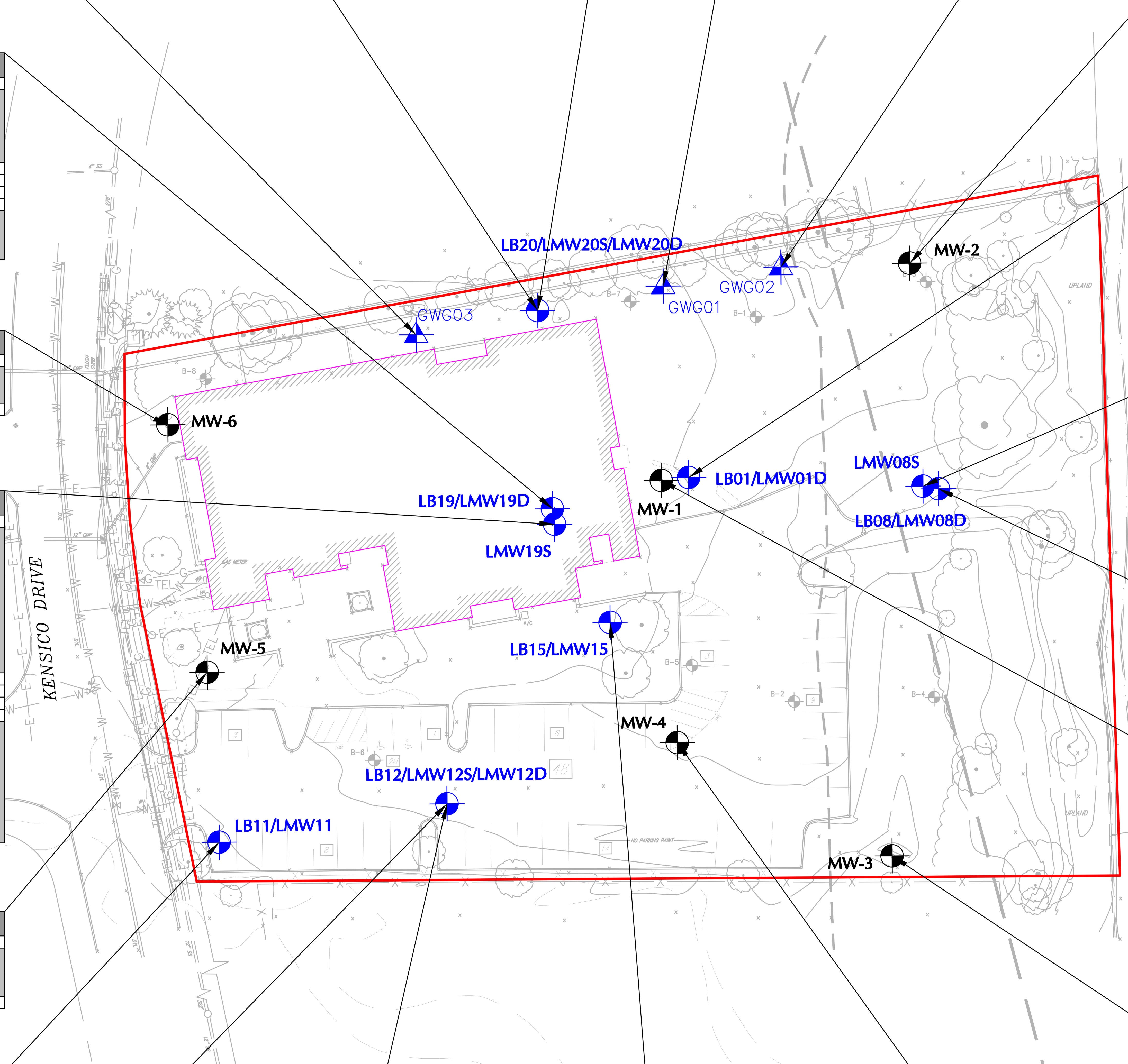
Drawn By EB

Checked By GCW

Figure No.

6B

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 6b - Soil Sample Analytical Results Map- haz lead.dwg Date: 7/31/2019 Time: 09:02 User: eburgess Style Table: Langan.stb Layout: ANSIB-BL



Sample ID Sample Date	GWG03_050919 5/9/2019	
VOCs (µg/L)		
1,1-Dichloroethane	**9.77**	
Cis-1,2-Dichloroethene	**387**	D
Trans-1,2-Dichloroethene	**5.5**	
Trichloroethene (TCE)	**124**	
Vinyl Chloride	**3.48**	
SVOCs (µg/L)	NE	

Sample ID Sample Date	LMW20S_090618 9/6/2018	
VOCs (µg/L)		
1,1-Dichloroethane	**26.4**	J
1,1-Dichloroethene	**16.2**	J
Cis-1,2-Dichloroethene	**228**	D
Tetrachloroethene (PCE)	**5.17**	J
Trichloroethene (TCE)	**2,210**	DE
Vinyl Chloride	**19.6**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	NE	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**5,710**	
Manganese	**648**	
Manganese (Dissolved)	**323**	
Sodium	**33,400**	
Sodium (Dissolved)	**34,400**	J

Sample ID Sample Date	LMW20D_090618 9/6/2018	
VOCs (µg/L)		
1,1-Dichloroethane	**6.46**	J
Cis-1,2-Dichloroethene	**207**	D
Tetrachloroethene (PCE)	**5.45**	J
Trichloroethene (TCE)	**2,540**	D
Vinyl Chloride	**7.78**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	ND	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**1,210**	
Magnesium	**36,000**	
Manganese	**530**	
Manganese (Dissolved)	**461**	
Sodium	**53,600**	
Sodium (Dissolved)	**56,500**	J

Sample ID Sample Date	GWG01_050919 5/9/2019
VOCs (µg/L)	
Cis-1,2-Dichloroethene	**33.9**
Trichloroethene (TCE)	**61.2**
Vinyl Chloride	**10.8**
SVOCs (µg/L)	NE

Sample ID Sample Date	GWG02_050919 5/9/2019
VOCs (µg/L)	
Cis-1,2-Dichloroethene	**7.92**
Vinyl Chloride	**22.2**
SVOCs (µg/L)	NE

LEGEND:

APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

MW-6 EXISTING MONITORING WELL (INSTALLED BY AECOM)

LB12/LMW12D RI MONITORING WELL LOCATION

GWG01 SRI MONITORING WELL LOCATION

Sample ID Sample Date	MW-2_090518 9/5/2018	
VOCs (µg/L)		
1,1,1-Trichloroethane	**8.48**	
Benzene	**7.17**	
Cis-1,2-Dichloroethene	**273**	D
Vinyl Chloride	**40.4**	J
SVOCs (µg/L)	NE	

Sample ID Sample Date	LMW19D_090718 9/7/2018	
VOCs (µg/L)		
1,1,1-Trichloroethane	**8.23**	
1,1-Dichloroethane	**15.4**	
1,1-Dichloroethene	**9.58**	J
Cis-1,2-Dichloroethene	**249**	D
Trichloroethene (TCE)	**5,080**	J
Vinyl Chloride	**11.7**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	ND	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Manganese	**308**	J
Manganese (Dissolved)	**305**	J
Sodium	**33,400**	J
Sodium (Dissolved)	**33,700**	J

Sample ID Sample Date	LMW01D_090518 9/5/2018	
VOCs (µg/L)		
1,1-Dichloroethane	**27.4**	
1,1-Dichloroethene	**10.2**	J
Cis-1,2-Dichloroethene	**1,100**	D
Trans-1,2-Dichloroethene	**10.8**	
Trichloroethene (TCE)	**3,190**	J
Vinyl Chloride	**8.35**	J
SVOCs (µg/L)	ND	
Pesticides (µg/L)	DNC	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**1,280**	

Sample ID Sample Date	MW-6_090718 9/7/2018	
VOCs (µg/L)		
Cis-1,2-Dichloroethene	**13.7**	
Trichloroethene (TCE)	**15.1**	J
Vinyl Chloride	**16.4**	
SVOCs (µg/L)	NE	

Sample ID Sample Date	LMW08S_090518 9/5/2018	
VOCs (µg/L)		
Cis-1,2-Dichloroethene	**149**	D
SVOCs (µg/L)	NE	
Pesticides (µg/L)	ND	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**2,640**	
Iron (Dissolved)	**2,430**	B
Manganese	**560**	J
Manganese (Dissolved)	**535**	
Sodium	**22,900**	J
Sodium (Dissolved)	**22,000**	
PFAS (ng/L)	24.7	

Sample ID Sample Date	LMW19S_090718 9/7/2018	
VOCs (µg/L)		
1,1,1-Trichloroethane	**13.1**	D
1,1-Dichloroethane	**5.62**	D
1,1-Dichloroethene	**10.3**	J
Benzene	**2.88**	D
Chloroethane	**23.1**	J
Cis-1,2-Dichloroethene	**446**	D
M,P-Xylene	**6.24**	D
Methyl Ethyl Ketone (2-Butanone)	**68.1**	D
Tetrachloroethene (PCE)	**14.2**	J
Total Xylenes	**8.58**	D
Trichloroethene (TCE)	**14,400**	J
Vinyl Chloride	**45.5**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	ND	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Barium	**3,260**	J
Iron	**9,020**	J
Lead	**33.3**	J
Magnesium	**164,000**	J
Magnesium (Dissolved)	**38,000**	J
Manganese	**19,600**	J
Manganese (Dissolved)	**6,010**	J
Selenium	**42**	J
Sodium	**34,700**	
Sodium (Dissolved)	**33,200**	J

Sample ID Sample Date	LMW08D_090518 9/5/2018
VOCs (µg/L)	
Trichloroethene (TCE)	**118**
SVOCs (µg/L)	NE
Pesticides (µg/L)	NE
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**382**

Sample ID Sample Date	MW-1_090518 9/5/2018		GWDUP01_090518 9/5/2018	
VOCs (µg/L)				
1,1-Dichloroethane	**13.6**	J	**14.5**	J
1,1-Dichloroethene	**7.96**	J	**7.52**	J
Cis-1,2-Dichloroethene	**474**	D	**432**	D
Trichloroethene (TCE)	**3,820**	J	**2,240**	J
Vinyl Chloride	**15.2**	J	**15.3**	J
SVOCs (µg/L)	DNC		DNC	
Pesticides (µg/L)	ND		ND	
PCBs (µg/L)	ND		ND	
Inorganics (µg/L)				
Iron	**322**	J	**324**	
Iron (Dissolved)	**351**	B	**345**	B
Manganese	**1,580**	J	**1,560**	J
Manganese (Dissolved)	**1,450**		**1,480**	
Sodium	**50,900**	J	**50,700**	J
Sodium (Dissolved)	**48,600**		**48,000**	
PFAS (ng/L)	10.8		15.1	

Sample ID Sample Date	MW-5_090718 9/7/2018	
VOCs (µg/L)		
Cis-1,2-Dichloroethene	**134**	
Tetrachloroethene (PCE)	**5.22**	J
Trichloroethene (TCE)	**728**	J
Vinyl Chloride	**9.71**	J
SVOCs (µg/L)	NE	

Sample ID Sample Date	MW-3_090618 9/6/2018	
VOCs (µg/L)		
Trichloroethene (TCE)	**21.7**	J
SVOCs (µg/L)	NE	

Sample ID Sample Date	LMW11_090718 9/7/2018	
VOCs (µg/L)		
Cis-1,2-Dichloroethene	**22.6**	
Tetrachloroethene (PCE)	**5.61**	J
Trichloroethene (TCE)	**1,490**	J
SVOCs (µg/L)	ND	
Pesticides (µg/L)	DNC	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**7,000**	J
Magnesium	**96,600**	J
Manganese	**1,520**	J
Selenium	**12.5**	J
Sodium	**70,800**	
Sodium (Dissolved)	**69,700**	J

Sample ID Sample Date	LMW12S_090618 9/6/2018	
VOCs (µg/L)		
1,1-Dichloroethane	**16.1**	J
1,1-Dichloroethene	**17.2**	J
Cis-1,2-Dichloroethene	**214**	D
Trichloroethene (TCE)	**15,800**	D
Vinyl Chloride	**9.9**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	NE	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Barium	**1,450**	
Iron	**6,330**	
Magnesium	**158,000**	
Manganese	**6,360**	
Selenium	**33**	
Sodium	**20,800**	
PFAS (ng/L)	ND	

Sample ID Sample Date	LMW12D_090618 9/6/2018	
VOCs (µg/L)		
1,2-Dichloropropane	**2.9**	
Cis-1,2-Dichloroethene	**109**	
Tetrachloroethene (PCE)	**10.8**	J
Trichloroethene (TCE)	**874**	D
Vinyl Chloride	**2.49**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	NE	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**1,320**	
Magnesium	**36,400**	
Sodium	**56,900**	
Sodium (Dissolved)	**59,000**	J
Thallium	**1.83**	J

Sample ID Sample Date	LMW15_090618 9/6/2018	
VOCs (µg/L)		
1,1-Dichloroethane	**22.4**	J
1,1-Dichloroethene	**10.3**	J
Cis-1,2-Dichloroethene	**268**	D
Trichloroethene (TCE)	**4,290**	J
Vinyl Chloride	**9**	J
SVOCs (µg/L)	NE	
Pesticides (µg/L)	ND	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Iron	**15,800**	
Magnesium	**142,000**	
Manganese	**4,240**	
Selenium	**22.3**	
Sodium	**27,700**	
Sodium (Dissolved)	**25,700**	J

Sample ID Sample Date	MW-4_090618 9/6/2018	
VOCs (µg/L)		
Cis-1,2-Dichloroethene	**7.9**	
Trichloroethene (TCE)	**265**	D
Vinyl Chloride	**2.35**	J
SVOCs (µg/L)		
Bis(2-Ethylhexyl) Phthalate	**5.07**	J

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. ALL LOCATIONS ARE APPROXIMATE.
3. RI = REMEDIAL INVESTIGATION
4. SRI = SUPPLEMENTAL REMEDIAL INVESTIGATION
5. GROUNDWATER ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS (AWQS) FOR CLASS GA WATER.
6. PFAS CONCENTRATIONS SHOWN ARE TOTAL CONCENTRATIONS OF ALL DETECTED PFAS COMPOUNDS.
7. CONCENTRATIONS EXCEEDING THE NYSDEC TOGS AWQS ARE SHADED AND BOLD.
8. PFAS = PER- AND POLYFLUOROALKYL SUBSTANCES
9. µg/L = MICROGRAMS PER LITER
10. ng/L - NANOGRAMS PER LITER
11. ND = THE ANALYTE WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE REPORTING LIMIT (RL)
12. NE = THE ANALYTE DID NOT EXCEED COMPARISON CRITERIA.
13. DNC = ONE OR MORE COMPOUNDS DETECTED WITH NO APPLICABLE CRITERIA.
14. B = THE ANALYTE WAS FOUND IN THE ASSOCIATED ANALYSIS BATCH BLANK.
12. D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE.
13. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE RL; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
14. E = THE RESULT IS ESTIMATED AND CANNOT BE ACCURATELY REPORTED DUE TO LEVELS ENCOUNTERED OR INTERFERENCES.
15. BGS = BELOW GRADE SURFACE

Analyte	CAS Number	NYSDEC SGVs	USEPA HA
VOCs (µg/L)			
1,1,1-Trichloroethane	71-55-6	5	~
1,1-Dichloroethane	75-34-3	5	~
1,1-Dichloroethene	75-35-4	5	~
1,2-Dichloropropane	78-87-5	1	~
Benzene	71-43-2	1	~
Chloroethane	75-00-3	5	~
Cis-1,2-Dichloroethene	156-59-2	5	~
M,P-Xylene	179601-23-1	5	~
Methyl Ethyl Ketone (2-Butanone)	78-93-3	50	~
Tetrachloroethene (PCE)	127-18-4	5	~
Total Xylenes	1330-20-7	5	~
Trans-1,2-Dichloroethene	156-60-5	5	~
Trichloroethene (TCE)	79-01-6	5	~
Vinyl Chloride	75-01-4	2	~
SVOCs (µg/L)			
Bis(2-Ethylhexyl) Phthalate	117-81-7	5	~
Inorganics (µg/L)			
Barium	7440-39-3	1,000	~
Iron	7439-89-6	300	~
Lead	7439-92-1	25	~
Magnesium	7439-95-4	35,000	~
Manganese	7439-96-5	300	~
Selenium	7782-49-2	10	~
Sodium	7440-23-5	20,000	~
Thallium	7440-28-0	0.5	~

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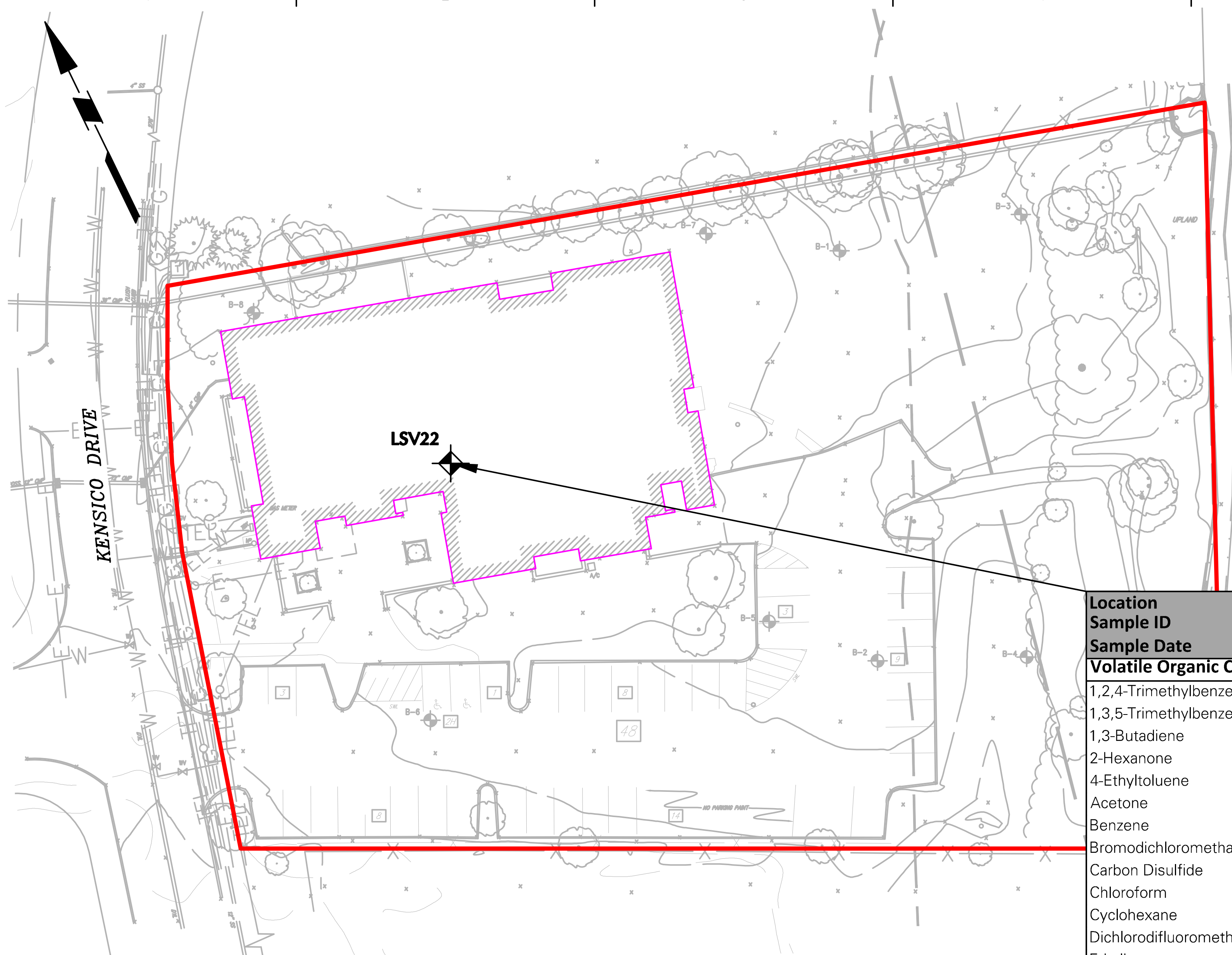
Project
41 KENSICO DRIVE
SECTION No. 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title
GROUNDWATER ANALYTICAL RESULTS MAP

Project No.	Figure No.
190046301	7
Date: 6/3/2019	
Drawn By: EB	
Checked By: GCW	

LANGAN
PROJECT NO. ########

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 7 - Groundwater Sample Analytical Results Map_with SRI.dwg Date: 7/17/2019 Time: 16:45 User: eburgess Style Table: Langan.stb Layout: ANSI-BL



LEGEND:

APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

LSV22 RI SOIL VAPOR LOCATION

Location	LSV22	
Sample ID	LSV22_081418	
Sample Date	8/14/2018	
Volatile Organic Compounds (µg/m³)		
1,2,4-Trimethylbenzene	16	D
1,3,5-Trimethylbenzene (Mesitylene)	5.2	D
1,3-Butadiene	4.2	J
2-Hexanone	8.8	D
4-Ethyltoluene	13	D
Acetone	73	D
Benzene	3.8	D
Bromodichloromethane	3.1	D
Carbon Disulfide	3.2	D
Chloroform	19	D
Cyclohexane	3.7	D
Dichlorodifluoromethane	310	D
Ethylbenzene	5.4	D
Isopropanol	4.7	D
M,P-Xylene	21	D
Methyl Ethyl Ketone (2-Butanone)	23	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	3.6	D
Methylene Chloride	6.7	D
n-Heptane	2.9	D
n-Hexane	6.2	D
o-Xylene (1,2-Dimethylbenzene)	8.8	D
Propylene	26	D
Styrene	4	D
Tetrachloroethylene (PCE)	14	D
Tetrahydrofuran	3.4	D
Toluene	15	D
Trichloroethylene (TCE)	3.7	D
Trichlorofluoromethane	1.5	D

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE OBTAINED FROM GROUND SURVEY PREFORMED BY LANGAN IN SEPTEMBER 2018.
3. RI = REMEDIAL INVESTIGATION
4. SOIL VAPOR RESULTS ARE COMPARED TO THE LOWEST CONCENTRATION FOR WHICH MONITORING OR MITIGATION IS RECOMMENDED IN MATRICES A, B, AND C OF THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) GUIDANCE FOR EVALUATING SOIL VAPOR IN THE STATE OF NEW YORK DOCUMENT (MAY 2017).
5. SOIL VAPOR RESULTS THAT EXCEED THE SOIL VAPOR CRITERIA ARE SHADED AND BOLDED.
6. µg/m^3 = MICROGRAM PER CUBIC METER
7. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE REPORTING LIMIT (RL); THEREFORE THE RESULT IS AN ESTIMATED CONCENTRATION.
8. D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE.
9. ONLY ANALYTES WITH DETECTIONS ARE SHOWN.

Compound	NYSDOH Decision Matrix Minimum Concentration
Volatile Organic Compounds (µg/m³)	
Methylene Chloride	100
Tetrachloroethylene (PCE)	100
Trichloroethylene (TCE)	6

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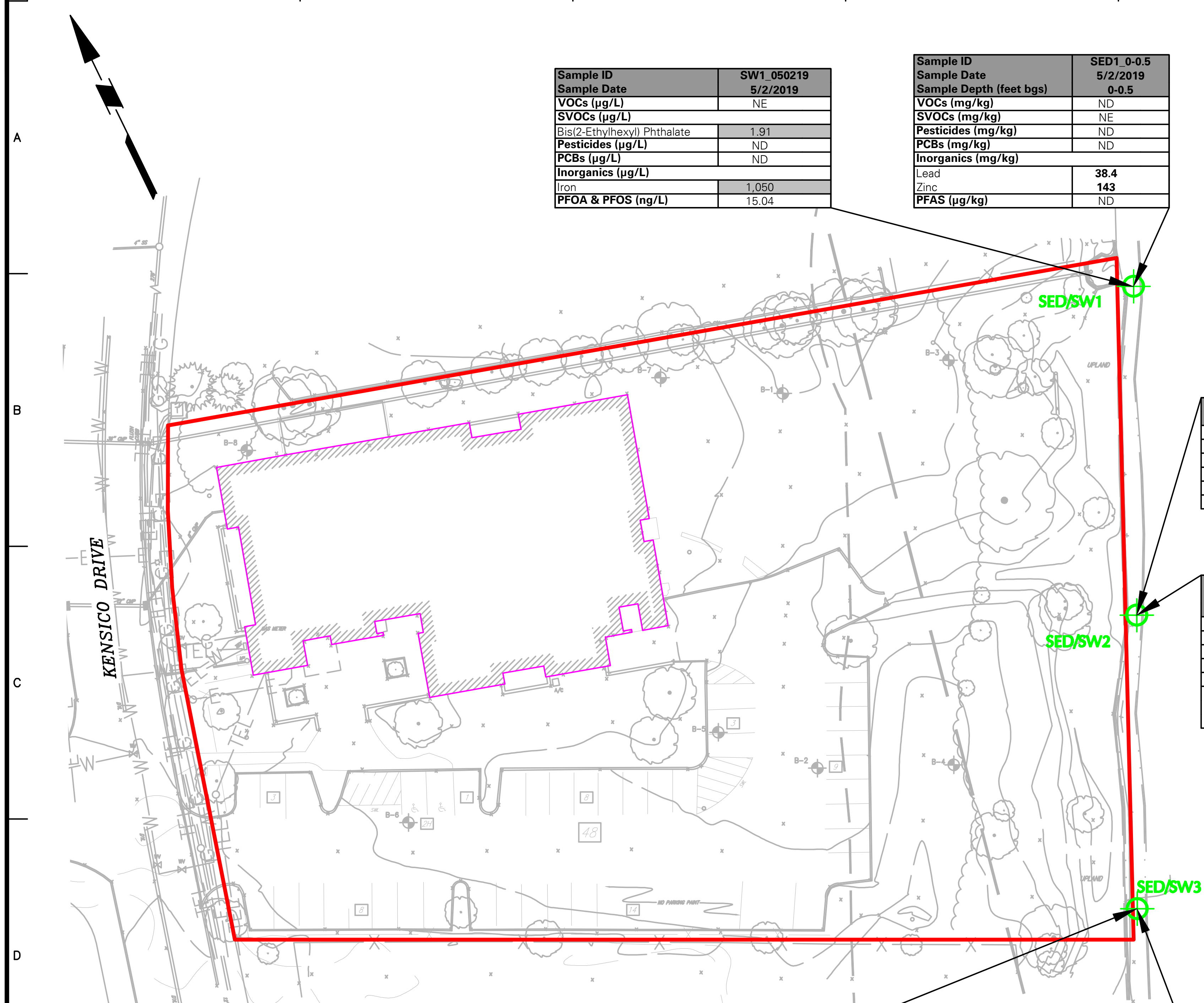
Project
41 KENSICO DRIVE
SECTION 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title
SUB-SLAB SOIL VAPOR SAMPLE ANALYTICAL RESULTS MAP

Project No. 190046301
Date 10/17/2018
Drawn By KT
Checked By TC

Figure No.
8

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 8 - Soil Vapor Sample Analytical Results Map.dwg Date: 7/3/2019 Time: 16:29 User: eburgess Style Table: Langan.stb Layout: Layout1



Sample ID	SW1_050219
Sample Date	5/2/2019
VOCs (µg/L)	NE
SVOCs (µg/L)	
Bis(2-Ethylhexyl) Phthalate	1.91
Pesticides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	1,050
PFOA & PFOS (ng/L)	15.04

Sample ID	SED1_0-0.5
Sample Date	5/2/2019
Sample Depth (feet bgs)	0-0.5
VOCs (mg/kg)	ND
SVOCs (mg/kg)	NE
Pesticides (mg/kg)	ND
PCBs (mg/kg)	ND
Inorganics (mg/kg)	
Lead	**38.4**
Zinc	**143**
PFAS (µg/kg)	ND

Sample ID	SW2_050219
Sample Date	5/2/2019
VOCs (µg/L)	NE
SVOCs (µg/L)	NE
Pesticides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	970

Sample ID	SED2_0-0.5
Sample Date	5/2/2019
Sample Depth (feet bgs)	0-0.5
VOCs (mg/kg)	DNC
SVOCs (mg/kg)	NE
Pesticides (mg/kg)	ND
PCBs (mg/kg)	ND
Inorganics (mg/kg)	
Chromium, Total	**43.9**
Lead	**180**
Zinc	**134**

Sample ID	SW3_050219	SWDUP01_050219
Sample Date	5/2/2019	5/2/2019
VOCs (µg/L)	NE	NE
SVOCs (µg/L)	NE	NE
Pesticides (µg/L)	ND	ND
PCBs (µg/L)	ND	ND
Inorganics (µg/L)		
Aluminum (Dissolved)	ND	143 J
Iron	1,180	955
PFOA & PFOS (ng/L)	18.11	20.56

Sample ID	SED3_0-0.5
Sample Date	5/2/2019
Sample Depth (feet bgs)	0-0.5
VOCs (mg/kg)	DNC
SVOCs (mg/kg)	NE
Pesticides (mg/kg)	ND
PCBs (mg/kg)	ND
Inorganics (mg/kg)	
Cadmium	**1.01**
Copper	**56.2**
Lead	**201**
Nickel	**28**
Zinc	**244**
PFAS (µg/kg)	ND

LEGEND:

APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

SED/SW1 CO-LOCATED SURFACE WATER AND SEDIMENT SAMPLES

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. SAMPLING LOCATIONS ARE APPROXIMATE
4. SURFACE WATER RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS (AWQS) FOR CLASS C WATER.
5. SEDIMENT RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) SCREENING AND ASSESSMENT OF CONTAMINATED SEDIMENT (SACS) FRESHWATER SEDIMENT GUIDANCE VALUES.
6. SURFACE WATER RESULTS THAT EXCEED TOGS AWQS FOR CLASS C WATERS ARE SHADED.
7. SEDIMENT RESULTS WITHIN THE CLASS B CONCENTRATION RANGE AS DEFINED BY THE NYSDEC SACS ARE BOLD.
7. SEDIMENT RESULTS ABOVE THE CLASS C CONCENTRATION MINIMUM AS DEFINED BY THE NYSDEC SACS ARE SHADED AND BOLD.
8. µg/L = MICROGRAM PER LITER
9. mg/kg = MILLIGRAM PER KILOGRAM
10. ng/L = NANOGRAM PER LITER
11. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE REPORTING LIMIT (RL); THEREFORE THE RESULT IS AN ESTIMATED CONCENTRATION.
12. ND = THE ANALYTE WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE REPORTING LIMIT (RL)
13. NE = THE ANALYTE DID NOT EXCEED COMPARISON CRITERIA.
14. VOC = VOLATILE ORGANIC COMPOUND
15. SVOC = SEMIVOLATILE ORGANIC COMPOUND
16. PCB = POLYCHLORINATED BIPHENYL
17. PFAS = PER- AND POLYFLUOROALKYL SUBSTANCES
18. PFOA = PERFLUOROOCTANOIC ACID
19. PFOS = PERFLUOROOCTANESULFONIC ACID

Analyte	CAS Number	NYSDEC Type H(FC) Class C	NYSDEC Type A(C) Class C	NYSDEC Type A(A) Class C	NYSDEC Type E Class C	NYSDEC Type W Class C
SVOCs (µg/L)						
Bis(2-Ethylhexyl) Phthalate	117-81-7	~	0.6	~	~	~
Inorganics (µg/L)						
Aluminum	7429-90-5	~	100	~	~	~
Iron	7439-89-6	~	300	~	~	~

Analyte	CAS Number	Freshwater Sediment Guidance Values - Class A (maximum value)	Freshwater Sediment Guidance Values - Class B (minimum value)	Freshwater Sediment Guidance Values - Class B (maximum value)	Freshwater Sediment Guidance Values - Class C (minimum value)
SVOCs (mg/kg)					
Bis(2-Ethylhexyl) Phthalate	117-81-7	360	360	~	~
Inorganics (mg/kg)					
Arsenic	7440-38-2	10	10	33	33
Cadmium	7440-43-9	1	1	5	5
Chromium, Total	7440-47-3	43	43	110	110
Copper	7440-50-8	32	32	150	150
Lead	7439-92-1	26	36	130	130
Mercury	7439-97-6	0.2	0.2	1	1
Nickel	7440-02-0	23	23	49	49
Zinc	7440-66-6	120	120	460	460

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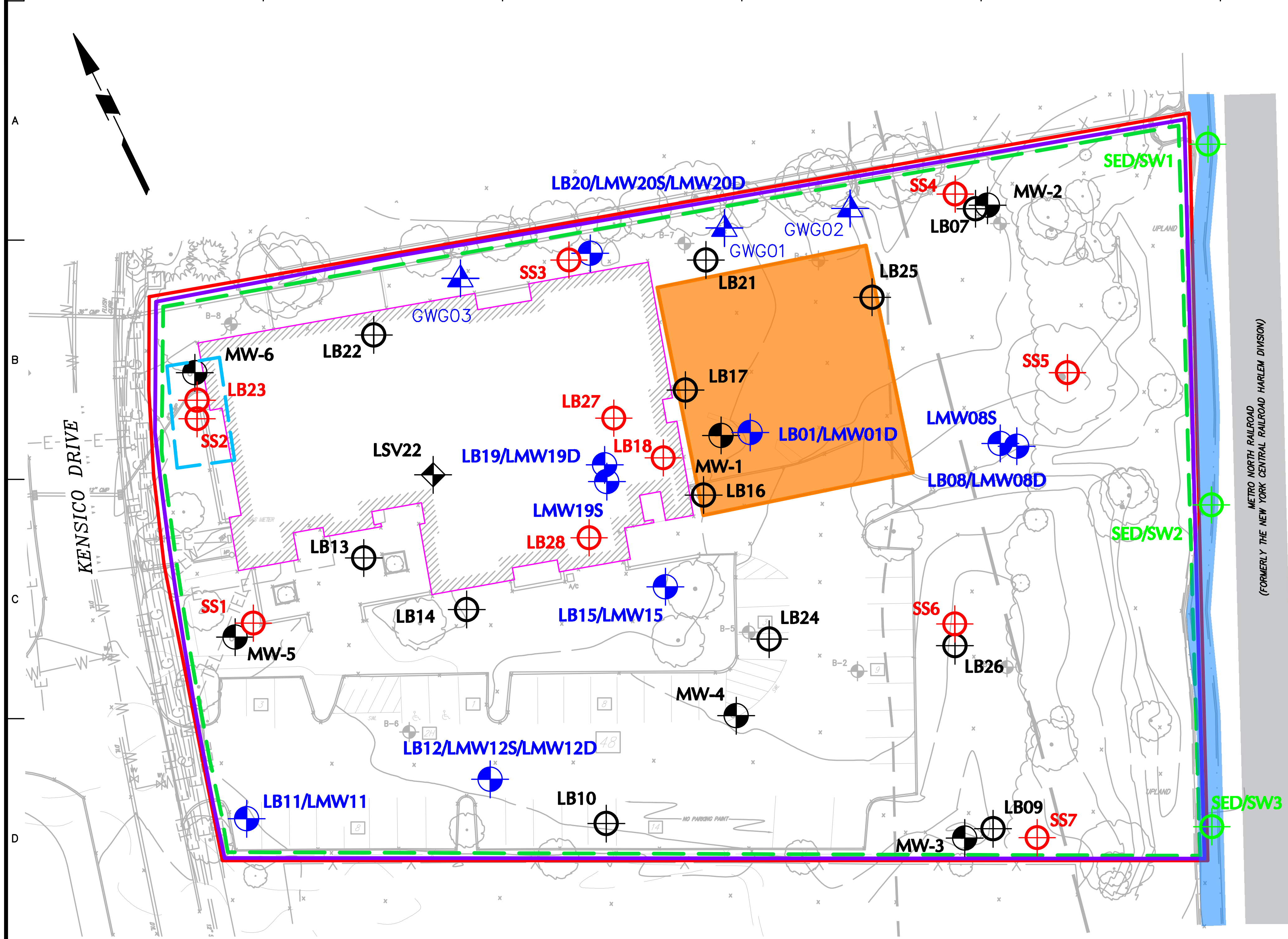
Project
41 KENSICO DRIVE
SECTION 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Figure Title
OFF-SITE SURFACE WATER AND SEDIMENT SAMPLE ANALYTICAL RESULTS MAP

Project No. 190046301
Date 07/01/2019
Drawn By EB
Checked By GCW
Figure No. 9

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR\Figure 9 - Surface Water and Sediment Sample Analytical Results Map.dwg Date: 10/31/2019 Time: 14:17 User: eburgess Style Table: Langan.stb Layout: Layout1



LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING BUILDING
- APPROXIMATE EXTENT OF BRANCH BROOK STREAM
- APPROXIMATE EXTENT OF METRO NORTH RAILROAD
- B-2 — PREVIOUS SOIL BORING (INSTALLED BY AECOM)
- MW-6 — EXISTING MONITORING WELL (INSTALLED BY AECOM)
- LB23 — RI SOIL BORING LOCATION
- LB12/LMW12D — RI SOIL BORING AND MONITORING WELL LOCATION
- LMW19S — RI MONITORING WELL LOCATION
- LSV22 — RI SOIL VAPOR LOCATION
- SS1 — SRI SOIL SAMPLE LOCATION
- GWG01 — SRI MONIORING WELL LOCATION
- SED/SW1 — SRI CO-LOCATED STREAM SEDIMENT AND SURFACE WATER LOCATION
- AOC1: FORMER TANK AREA
- AOC2: HISTORIC FILL
- AOC3: CHLORINATED SOLVENTS IN SOIL, GROUNDWATER, AND SOIL VAPOR FROM OFF-SITE SOURCES
- AOC4: HAZARDOUS LEAD SOIL

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLEd "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. THE REMEDIAL INVESTIGATION WAS PERFORMED BY LANGAN BETWEEN AUGUST AND SEPTEMBER OF 2018.
3. THE SUPPLEMENTAL REMEDIAL INVESTIGATION WAS PERFORMED BY LANGAN IN MAY OF 2019.
4. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE OBTAINED FROM GROUND SURVEY PREFORMED BY LANGAN IN SEPTEMBER 2018.
5. RI = REMEDIAL INVESTIGATION
6. SRI = SUPPLEMENTAL REMEDIAL INVESTIGATION
7. AOC = AREA OF CONCERN

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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 707 Westchester Avenue, Suite 304 White Plains, NY 10604 T: 914.323.7400 F: 914.323.7401 www.langan.com	41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	AREAS OF CONCERN (POST-RI AND SRI)	Project No. 190046301 Date 06/24/2019 Drawn By EB Checked By GCW	10

APPENDIX A

PREVIOUS ENVIRONMENTAL REPORTS

APPENDIX B

GEOPHYSICAL SURVEY REPORTS

GEOPHYSICAL ENGINEERING SURVEY REPORT

Commercial Property
41 Kensico Drive,
Mt. Kisco, New York 10549

NOVA PROJECT NUMBER
18-0877

DATED
August 8, 2018

PREPARED FOR:

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360 West 31st Street, 8th Floor
New York, NY 10001
www.langan.com

PREPARED BY:

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GEOPHYSICAL ENGINEERING
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Project Manager
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Phone: 212.479.5400 Fax: 212.479.5444
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001-2727
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Mobile: 646.689.2685

Re: Geophysical Engineering Survey (GES) Report
Commercial Site
41 Kensico Drive,
Mt. Kisco, New York 10549

Dear Mr. Chow:

Nova Geophysical Services (NOVA) is pleased to provide the findings of the geophysical engineering survey (GES) at the above referenced project site: 41 Kensico Drive, Mt. Kisco, New York 10549 (the “Site”).

INTRODUCTION TO GEOPHYSICAL ENGINEERING SURVEY (GES)

NOVA performed a geophysical engineering survey (GES) consisting of a Ground Penetrating Radar (GPR) and Electromagnetic (EM) survey at the site. The purpose of this survey is to locate and identify underground utilities, storage tanks, and other substructures on August 2nd, 2018.

The equipment selected for this investigation was a Sensors and Software Noggin 250 MHz ground penetrating radar (GPR) with a shielded antenna and a Radio Detection RD7100 Electromagnetic utility locator.

A GPR system consists of a radar control unit, control cable, and transducer (antenna). The control unit transmits a trigger pulse at a normal repetition rate of 250 MHz. The trigger pulse is sent to the transmitter electronics in the transduce via the control cable. The transmitter electronics amplify the trigger pulse into bipolar pulses that are radiated to the surface. The transformed pulses vary in shape and frequency according to the transducer used. In the subsurface, variations of the signal occur at boundaries where there is a dielectric contrast (void, steel, soil type, etc.). Signal reflections travel back to the control unit and are represented as color graphic images for interpolation.

A typical electromagnetic (EM) utility locating system consists of a transmitter unit and a receiver unit. The receiver unit can be used independently of the transmitter unit in order to detect utility lines with an inherent EM signature (electric utility lines, water lines, etc.). If needed a current at a specific frequency can also be placed on a utility that is being located. This can be done via the transmitter unit by either direct connection or induction via an EM field varying at specific frequency. The receiver unit is then set to the selected frequency and the electromagnetic field created by the current running through the utility can be located allowing the utility to be marked.

GEOPHYSICAL METHODS

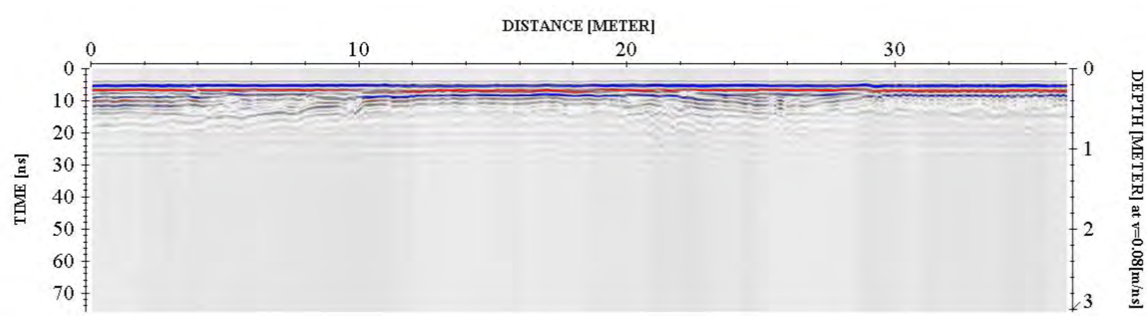
The project site was screened using GPR to search the specified area and inspected for reflections, which could be indicative of substructures and utilities within the subsurface. An EM utility locator was also used to help determine the locations of utilities within the survey area.

EM data was collected and interpreted on site and suspected utilities marked as needed. GPR data profiles were collected for the areas of the Site specified by the client and processed as specified below.

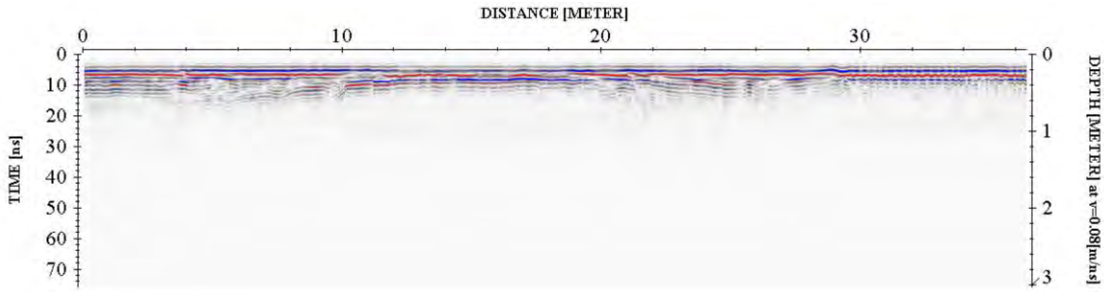
DATA PROCESSING

In order to improve the quality of the results and to better identify anomalies NOVA processed the collected data. The processing work flow is briefly described in this section.

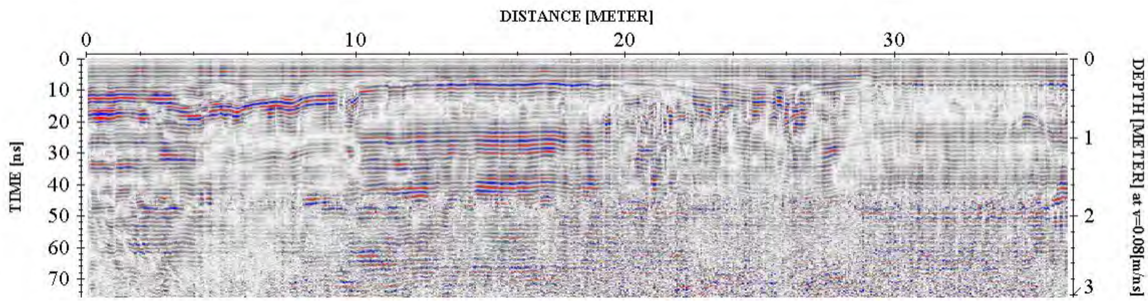
Step 1. Import Raw RAMAC data to standard processing format



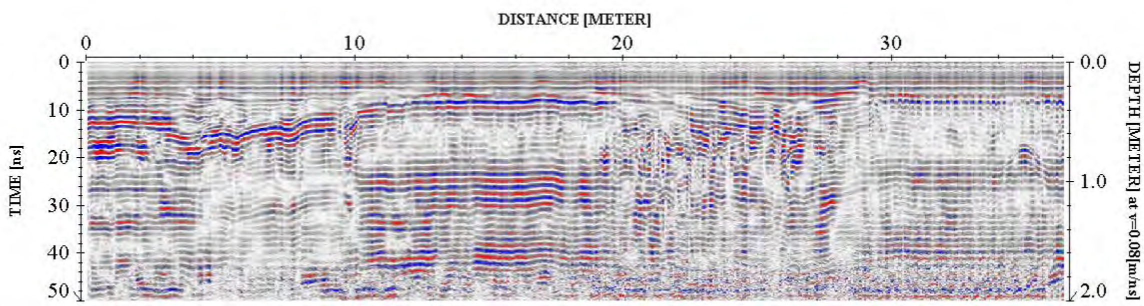
Step 2. Remove instrument noise *(dewow)*



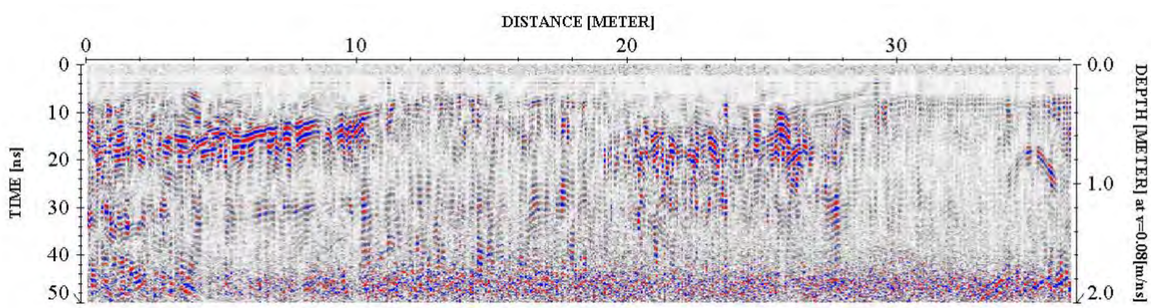
Step 3. Correct for attenuation losses *(energy decay function)*



Step 4. Remove static from bottom of profile *(time cut)*



Step 5. Mute horizontal ringing/noise *(subtracting average)*



The above example shows the significance of data processing. The last image (step 5) has higher resolution than the starting image (raw data – step 1) and represents the subsurface anomalies much more accurately.

PHYSICAL SETTINGS

NOVA observed the following physical conditions at the time of the survey.

Weather: Sunny

Temperature: 85° F

Surface: Asphalt, Concrete, Vegetation

Geophysical Noise Level: Geophysical noise at the site was medium due to being located in a semi-urban environment.

RESULTS

The results of the geophysical engineering survey (GES) identified the following at the project site:

- The GES identified subsurface utilities: Electric, gas, sanitary sewer, storm sewer, water, and street lighting subsurface utilities located within the survey area. Shown in site survey plan.
- The GES identified a large, approximately 5 foot diameter, drainage outflow on the northern edge of the survey area draining to the creek on the eastern side of the site. Shown in the site survey plan.
- An area with a previously removed UST was investigated and is shown on the survey plan. No large geophysical anomalies resembling an underground storage tank (UST) were identified.
- All detected subsurface anomalies were marked in the onsite mark out.
- Multiple boring locations were cleared. All cleared boring locations were marked in the onsite mark out.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

NOVA Geophysical Services

Levent Eskicakit, P.G., E.P.

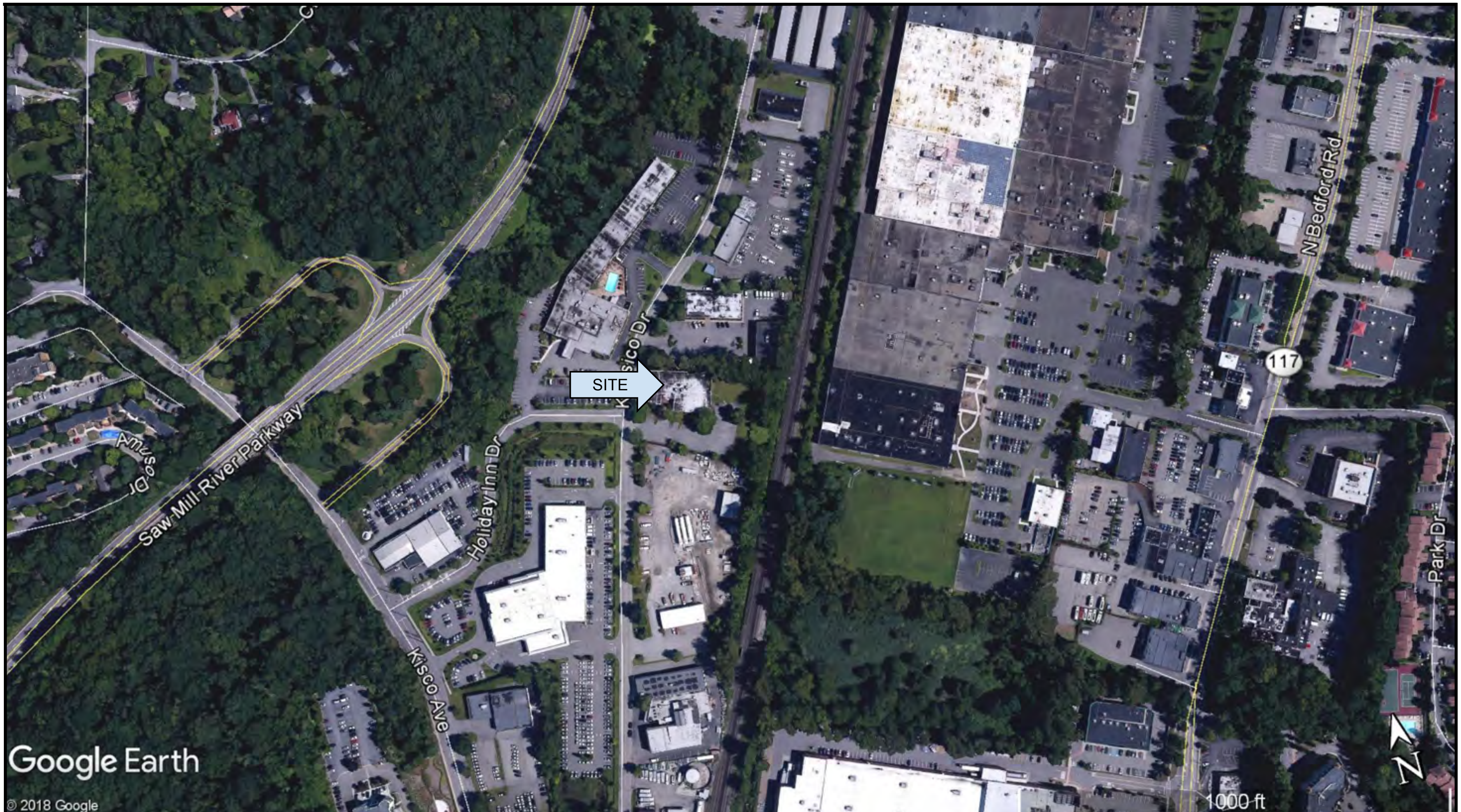
Project Engineer

Attachments:

Geophysical Images

Survey Plan

Site Location Map



NOVA
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Subsurface Mapping Solutions
56-01 Marathon Parkway # 765
Douglaston, New York 11362
347-556-7787 (PHONE)
718-261-1527(FAX)
www.nova-gsi.com

SITE LOCATION MAP

SITE:	**Commercial Site** 41 Kensico Drive, Mt. Kisco, New York 10549
CLIENT:	Langan
DATE:	August 2nd, 2018
AUTH:	Chris Steinley

LEGEND

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SURVEY PLAN

SITE:	**Commercial Site** 41 Kensico Drive, Mt. Kisco, New York 10549
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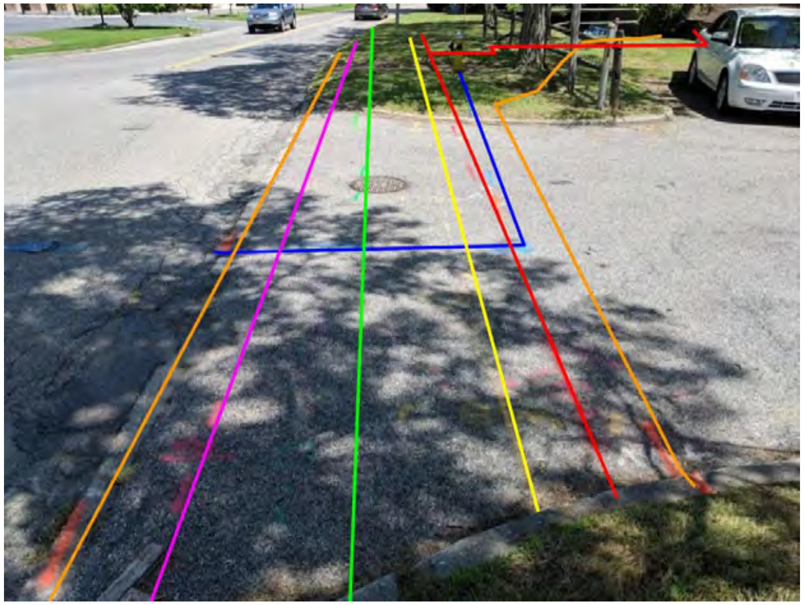
AUTH:	Chris Steinley

LEGEND

- Survey Area
- Water
- Sanitary Sewer
- Storm Sewer
- Electric
- Gas
- Manhole
- Street Lighting
- Telecom

GEOPHYSICAL IMAGES

Commercial Site
41 Kensico Drive,
Mt. Kisco, New York 10549
August 2nd, 2018



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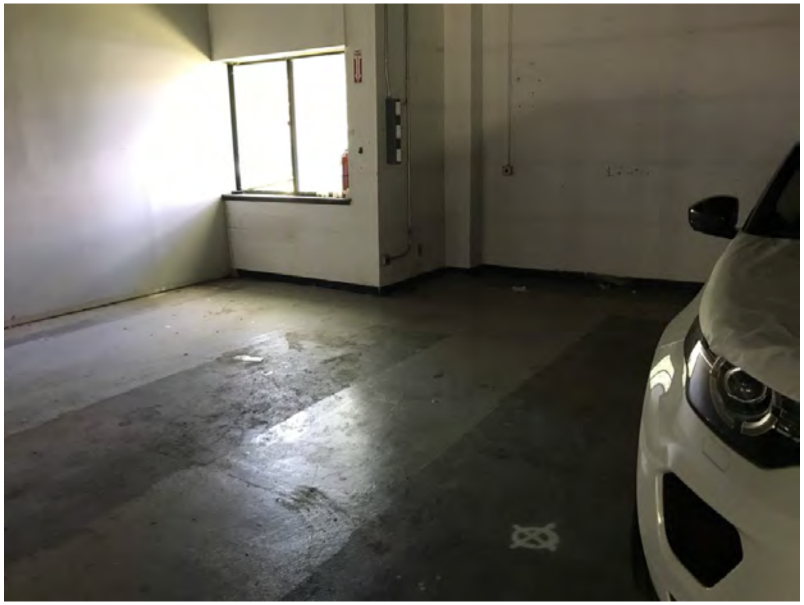

GEOPHYSICAL IMAGES

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August 2nd, 2018

APPENDIX C

SOIL BORING LOGS

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Log of Boring **LB01** Sheet 1 of 3

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.8	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/9/18	Date Finished: 8/9/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 60 ft	Rock Depth: 60 ft
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples — Disturbed: 5; Undisturbed: N/A; Core: N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.) — First: ▽ 4.5; Completion: ▼; 24 HR.: ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Thomas Seickel	
Sampler: 2" Diameter 4-foot Long Steel MC			
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Field Engineer: Luke McCartney	

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.8		0						
+289.6	(0-2") SLATE STONE							
	R1 (0-18"): brown fine SAND, trace silt, trace fine gravel, asphalt (moist) [FILL]	0–4	R1	MACROCORE	18/48		0.0 0.0 0.0	
		4–8	R2	MACROCORE	10/48			Collect LB01_4-5 at 1000
	R2a (0-6"): dark brown fine SAND, trace silt, timber, concrete (wet) [FILL]						0.0 0.0	
+282.3	R2b (6-10"): soft grey CLAY (wet)							
	R3a (0-17"): soft grey CLAY, trace silt, trace fine sand, trace fine gravel (wet)	8–12	R3	MACROCORE	24/48		0.0 0.0 0.0 0.0	
+278.3	R3b (17-24"): loose grayish brown fine SAND, trace medium sand, trace fine sand, trace fine gravel (wet)							
	R4 (0-22"): medium-dense fine SAND, trace silt (wet)	12–16	R4	MACROCORE	22/48		0.0 0.0 0.0 0.0	
	R5 (0-31"): medium-dense fine SAND, trace silt (wet)	16–20	R5	MACROCORE	31/48		0.0 0.0 0.0 0.0 0.0	

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.8

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+269.8		20						Switch to dual-tube for deeper interval sampling
+267.4	R6a (0-8"): soft grey CLAY (wet)	22	R6	DT	32/60		0.0	
+266.7	R6b (8-32"): stiff grey SILT (wet)	23					0.0 0.0 0.0 0.0	Small lenses of clay between 21-22"
+262.8	R7 (0-35"): medium-dense grey silty fine SAND (wet)	27	R7	DT	35/60		0.8 0.7 0.2 1.6 3.4 3.4	Small lenses of clay between 20-21" Collect LB01_28-29 CVOC at 1240 Blue dye test: Negative Collect LB01_29-30 at 1245
	R8 (0-28"): medium-dense grey silty fine SAND (wet)	32	R8	DT	28/60		0.8 2.1 1.6 2.1 0.8	Lense of clayey silt between 8-10" Collect LB01_33-34 CVOC at 1248
+253.3	R9a (0-27"): medium-dense grey fine SAND, trace silt (wet)	36	R9	DT	43/60		1.4 0.0 0.2 0.0 0.0	Blue dye test: 35-37 Negative Collect LB01_27-39 at 1300 for TOC, BOD, COD grabs at 34-35' Collect LB01_35-37 at 1250
+251.1	R9b (27-37"): medium-dense grey silty fine SAND (wet)	38.7					0.0	
+250.3	R9c (37-43"): firm olive CLAY (moist to wet)	39.5					0.0	
	R10a (0-28"): fine olive CLAY, trace silt (wet)	42	R10	DT	34/60		0.0 0.0 0.0 0.0	Lense of clayey SILT between 12-13" Lenses of clay between 22-23" and 25-26"
+245.3	R10b (28-34"): medium-dense silty fine SAND (wet)	44.5					0.2	
		45						

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Log of Boring LB01 Sheet 3 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.8

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	244.8		45						
	241.8	R11a (0-12"): soft olive-grey CLAY (wet)	48	R11	DT	25/60		0.6 3.5	Collect LB01_48-49 CVOC at 1255
	240.8	R11b (12-25"): medium-dense olive silty fine SAND (wet)	49					1.4	Collect LB01_48.5-49.5 at 1300 Blue dye test: Negative
	236.8	R12a (0-16"): medium-dense olive-brown fine SAND, trace silt (wet) R12b (16-22"): firm olive-brown fine SAND, weathered rock	53	R12	DT	22/60		2.2 2.7 1.9 2.4	Collect LB01_53-54 CVOC at 1310 Collect LB01_54-55 at 1315 Blue dye test: Negative
			56	R13	DT	4/60			Install MW01D to 56' feet bgs - Auger refusal Poor recovery Collect LB01_48-60 at 1400 for TOC, BOD, COD, grabs at 54-55
	230.3	R13 (0-4"): weathered rock, rock fragments						0.4	
	229.8	End of boring at 60 feet bgs	60						End of boring at 60 FT BGS - MW01D installed at 56 feet bgs - Bulk samples between 25-39 and 49-60 for INJIT parameters * 5 samples for RI parameters - 5 samples for treatability parameters
			70						

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Log of Boring **LB07** Sheet 1 of 1

Project: 41 Kensico Drive			Project No.: 190046301		
Location: Mount Kisco			Elevation and Datum: NAVD88 288.8		
Drilling Company: AARCO Environmental Services, Inc.			Date Started: 8/8/18	Date Finished: 8/18/18	
Drilling Equipment: Geoprobe 7822 DT			Completion Depth: 20 ft	Rock Depth: 20 ft	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe			Number of Samples: Disturbed 2	Undisturbed N/A	Core N/A
Casing Diameter (in): N/A	Casing Depth (ft):		Water Level (ft.): First 7	Completion	24 HR. N/A
Casing Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A	Drilling Foreman: Thomas Seickel		
Sampler: 2" Diameter 4-foot Long Steel MC			Field Engineer: Luke McCartney		
Sampler Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
288.8	(0-5"): topsoil	0						
288.3	R1 (5-34"): loose brown fine SAND, some silt, trace clay, trace fine gravel, concrete (moist) [FILL]	0–4	R1	MACROCORE	34/48		0.0, 0.0, 0.0, 0.0, 0.0	
281.8	R2a (0-7"): loose brown silty fine SAND, some clay, concrete, rubber (moist to wet) [FILL]	4–8	R2	MACROCORE	17/48		0.0, 0.0, 0.0	Collect LB07_7-8 at 1550
	R2b (7-17"): soft grey to black organic CLAY (moist)							
	R3a (0-12"): soft brown to black organic CLAY (moist)	8–12	R3	MACROCORE	34/48		0.0, 0.0, 0.0, 0.0	
278.1	R3b (12-21"): soft brown organic CLAY, some silt, trace fine sand, trace medium sand (wet)							
	R3c (21-34"): firm grey silty fine SAND (wet)							
273.3	R4 (0-7"): loose grey medium SAND, trace fine sand, trace coarse sand (wet)	12–16	R4	MACROCORE	7/48		0.0	Poor recovery
	R5a (0-17"): loose grey medium SAND, some fine sand (wet)	16–20	R5	MACROCORE	44/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Collect LB07_18-19 at 1352
270.3	R5b (17-25"): loose grey coarse SAND, some medium sand, trace fine gravel (wet)							
	R5c (25-44"): stiff grey SILT (wet)							End of boring at 20 feet bgs, borehole backfilled with clean sand to grade
268.8	End of boring at 20 feet bgs	20						

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Project: 41 Kensico Drive			Project No.: 190046301		
Location: Mount Kisco			Elevation and Datum: NAVD88 286.7		
Drilling Company: AARCO Environmental Services, Inc.			Date Started: 8/7/18	Date Finished: 8/8/18	
Drilling Equipment: Geoprobe 7822 DT			Completion Depth: 71 ft	Rock Depth: 71 ft	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe			Number of Samples — Disturbed: 5	Undisturbed: N/A	Core: N/A
Casing Diameter (in): N/A	Casing Depth (ft):		Water Level (ft.) — First ▽: 4	Completion ▼:	24 HR. ▼: N/A
Casing Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A	Drilling Foreman: Thomas Seickel		
Sampler: 2" Diameter 4-foot Long Steel MC / 2" Diameter 5-foot Long Steel DT			Field Engineer: Luke McCartney		
Sampler Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+286.7 / +286.5	(0-3") topsoil	0						
	R1 (3-17"): loose brown fine SAND, some silt (dry) [FILL]	0–4	R1	MACROCORE	17/48		0.0, 0.0, 0.0	
	▽	4						Collect LB08_4-5 at 1500
+281.0 / +280.7	R2a (0-4"): loose black fine SAND, trace silt (moist to wet)	4–8	R2	MACROCORE	27/48		0.0, 0.0, 0.0, 0.0	
+279.2	R2b (4-22"): soft black organic CLAY (wet)							
+277.7	R2c (22-27"): loose brown organic fine SAND (wet)							
+276.2	R3a (0-19"): loose brown silty fine SAND, trace clay (wet)	8–12	R3	MACROCORE	37/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R3b (19-37"): grey fine SAND, some silt, trace coarse sand (wet)							
+271.7	R4a (0-24"): grey medium SAND, trace coarse sand (wet)	12–16	R4	MACROCORE	35/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R4b (24-35"): stiff grey SILT (wet)							Collect LB08_15.5-16.5 at 1500
	R5a (0-8"): stiff grey SILT, some fine sand (wet)	16–20	R5	MACROCORE	29/48		0.0, 0.0, 0.0, 0.0, 0.0	Auger 4-inch casings to 17 feet bgs about 2 feet into sand/silt contact
	R5b (8-29): stiff grey SILT, trace clay (wet)	20						

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 286.7

Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
266.7		20						
	R6a (0-9"): stiff grey SILT, trace clay (wet)	20-24	R6	MACROCORE	29/48		0.0 0.0 0.0 0.0 0.0	micro-lenses of silty fine SAND in clay
264.5	R6b (9-22"): stiff grey clayey SILT (wet)							
263.5	R6c (22-29"): dense grey silty fine SAND (wet)							
260.7	R7a (0-7"): stiff grey SILT, some clay (wet) R7b (7-26"): stiff grey SILT (wet)	24-28	R7	MACROCORE	26/48		0.0 0.0 0.0 0.0	
	R8 (0-24"): stiff grey SILT (wet)	28-32	R8	MACROCORE	24/48		0.0 0.0 0.0 0.0	
	R9a (0-13"): stiff grey SILT (wet)	32-36	R9	MACROCORE	28/48		0.0 0.0 0.0 0.0 0.0	
252.0	R9b (13-24"): stiff grey clayey SILT (wet)							
251.0	R9c (24-28"): dense silty fine SAND (wet)							
248.2	R10 (0-18"): stiff grey clayey SILT (wet)	36-40	R10	MACROCORE	18/48		0.0 0.0 0.0 0.0	3-inches of soft clay between 2-4"
242.9	R11 (0-2"): stiff grey SILT, trace fine sand (wet)	40-44	R11	MACROCORE	2/48		0.0	poor recovery
242.5	R12a (0-16"): very soft grey CLAY (wet)	44-45	R12		45/48			

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Log of Boring **LB08** Sheet 3 of 4

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 286.7

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
241.7		45						
241.2	R12b (16-28"): stiff grey clayey SILT (wet)	46	R12	MACROCORE	45/48		0.3	
240.2	R12c (28-37"): stiff olive SILT (wet)						2.4	
	R12d (37-45") stiff olive SILT, some fine sand (wet)	47					4.4 3.7	
	R13 (0-48"): stiff olive SILT, some fine sand (wet)	48–52	R13	MACROCORE	48/48		0.7 5.7 6.4 0.5	Blue dye test: Negative Collect LB08_51-52 at 1330
		52–55	R14	DT	19/36		2.1 1.5 2.4 0.7	8/8/18: Continue sampling with Dual Tube (3 3/4") with 1 inch acetate liners (start at 50 feet) 5-foot runs Hearing sands within rods between 50-
233.2	R14 (0-19"): medium-dense olive fine SAND, trace silt (wet)	53.5						
	R15 (0-32"): medium-dense olive fine SAND, some silt (wet)	55–60	R15	DT	32/60		0.8 1.1 1.4 3.6 0.4 0.3	
	R16a (0-12"): medium-dense olive fine SAND (wet)	60–65	R16	DT	28/60		0.1 0.3 0.3 0.0 0.0	8/8/18: Collect LB08_62-63 at 0940
223.0	R16b (12-18"): stiff olive SILT (wet)	63.7						
222.6	R16c (18-22"): medium-dense olive fine SAND, trace silt (wet)	64.1						
222.2	R16d (22-28"): stiff olive SILT, trace clay (wet)	64.5						
		65–70	R17	DT	32/60		0.0 0.0 0.0 0.0 0.0 0.0 0.0	Collect LB08_69-70 at 1000
219.4	R17a (0-26"): stiff grey clayey SILT (wet)	67.3						
217.4	R17b (26-32"): firm grey CLAY, trace silt (wet)	69.3						
		70						

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 286.7

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+216.7		70						
	+215.9			R18	DT	2/12		0.0	
	+215.7	R18 (0-2"): rock fragments Refusal at 71 feet bgs on bedrock	71						Refusal at 71 feet bgs on bedrock Monitoring well MW08D set at 48 feet bgs, see well construction log for details. * Refusal at 48 feet when driving casing to set pre-pack well.
			72						
			73						
			74						
			75						
			76						
			77						
			78						
			79						
			80						
			81						
			82						
			83						
			84						
			85						
			86						
			87						
			88						
			89						
			90						
			91						
			92						
			93						
			94						
			95						

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Log of Boring **LB09** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301		
Location: Mount Kisco	Elevation and Datum: NAVD88 290.7		
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 8/10/18	Date Finished: 8/10/18	
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 20 ft	Rock Depth: 20 ft	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples	Disturbed: 1	Undisturbed: N/A / Core: N/A
Casing Diameter (in): N/A / Casing Depth (ft):	Water Level (ft.)	First: 6	Completion: / 24 HR.: N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Thomas Seickel		
Sampler: 2" Diameter 5-foot Long Steel DT	Field Engineer: Luke McCartney		
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.7	R1 (0-24"): medium-dense reddish-brown fine SAND, trace medium sand, trace coarse sand (moist) [FILL]	0–5	R1	DT	24/60		0.0, 0.0, 0.0, 0.0	
		5–10	R2	DT	12/60			Collect LB09_6-7 at 1100
+281.7	R2a (0-8"): medium-dense reddish brown to grey fine SAND, trace medium sand, trace coars sand (moist)	9					0.0, 0.0	
+281.0	R2b (8-12"): soft black CLAY (moist)							
	R3a (0-7"): stiff black to grey CLAY (moist)	10–15	R3	DT	36/60		0.0	
+278.2	R3b (7-21"): medium-dense grey to olive grey fine SAND, some coarse sand, trace medium sand (moist to wet)						0.0, 0.0	
+277.2	R3c (21-36"): olive grey silty fine SAND (wet)						0.0, 0.0, 0.0	
+274.4	R4 (0-44"): medium-dense well-sorted grey fine SAND (wet)	15–20	R4	DT	44/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
+270.7	End of boring at 20 feet bgs	20						End of boring at 20 feet bgs, borehole backfilled with clean sand to grade.

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Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88 289.72
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 8/20/18 / Date Finished: 8/20/18
Drilling Equipment: Geoprobe 8140LC Sonic Rig	Completion Depth: 47 ft / Rock Depth: 47 ft
Size and Type of Bit: 4" Diameter Steel Sonic Carbide Bit	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft):	Water Level (ft.): First ▽ 2 / Completion ▼ / 24 HR. ▼ N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Thomas Seickel
Sampler: 4" Diameter 5-foot Long Steel Sonic Sampler	Field Engineer: Luke McCartney
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.7		0						
+289.5	(0-3") asphalt cover							
+289.2	R1a (3-6"): dense, reddish-brown fine SAND, trace fine gravel (dry) [FILL]						0.0	
	R1b (6-36"): medium-dense, olive, fine SAND, trace silt (wet)	1					0.0	
							0.0	
	▽	2	R1	BAG	36/60		0.0	Collect LB10_2-3 at 1600
							0.0	Red dye test: negative
		3					0.0	
		4						
		5						
	R2 (0-40"): medium-dense, olive-brown to olive fine SAND, some silt, trace clay (wet)	6					0.0	
							0.0	
		7	R2	BAG	40/60		0.0	
							0.0	
		8					0.0	
							0.0	
		9					0.0	
							0.0	
		10						
	R3 (0-54"): medium-dense, olive-brown, fine SAND, trace clay (wet)						0.0	
		11					0.0	
							0.0	
		12	R3	BAG	54/60		0.0	
							0.0	
		13					7.7	
							32.1	
		14					49.6	
							46.1	
+274.7		15					52.7	
	R4a (0-35"): soft, olive-brown, clayey SILT, trace fine sand (wet)						0.0	
		16					2.0	
							10.8	
		17	R4	BAG	60/60		32.2	Clay lense at 33", 47"
+271.8							28.7	
	R4b (35-41"): loose, olive-brown, silty fine SAND (wet)	18					155.6	Fine sand micro lenses
+271.3	R4c (41-53"): stiff, olive-brown, CLAY, some silt, trace fine sand (wet)						54.1	
		19					78.1	
+270.3	R4d (53-60"): medium-dense, olive-brown, fine SAND,						166.3	
+269.7		20						

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Log of Boring **LB10** Sheet 2 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.72

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+269.7	some silt (wet)	20					185.4	
	R5a (0-34") soft, olive-brown, clayey SILT (wet)						231.4	
		21					35.7	
							35.1	
		22					40.4	
+266.9			R5	BAG	60/60		83.0	Clay lenses at 41", 54"
	R5b (34-60") medium-dense, gray, silty fine SAND, trace clay (wet)	23					86.8	
							130.4	
		24					77.7	
+264.7							72.8	
	R6a (0-36"): loose, olive gray, fine SAND, some silt, trace clay (wet)	25					163.7	
							78.1	
		26					60.5	
							80.9	
		27					69.5	
			R6	BAG	60/60		50.7	
	R6b (36-60") loose, gray, fine SAND, trace silt (wet)	28					58.2	
							178.9	
		29					245.3	
							270.3	
	R7 (0-60"): well sorted, medium-dense, olive-gray to gray fine SAND (wet)	30					90.8	
							172.2	
		31					198.3	Red dye test: negative
							535.3	
		32					231.2	Collect LB10_31-32 at 1625
			R7	BAG	60/60		219.9	
		33					348.6	
							179.6	
		34					358.9	Grading upwards
							181.7	
	R8a (0-23"): well-sorted, loose, gray fine SAND (wet)	35					271.8	
							166.3	
		36					175.4	
							133.9	
	R8b (23-33"): loose, gray, fine SAND, some silt, trace clay (wet)	37					110.8	
			R8	BAG	60/60		107.1	Clay lense at 34"
	R8c (33-48") medium-dense, olive-brown, fine SAND, trace clay (wet)	38					108.6	
							72.9	
	R8d (48-60") well-sorted, medium-dense, olive-brown, fine SAND, trace fine gravel (wet)	39					85.7	
							79.0	
	R9 (0-60"): well-sorted, medium dense olive-brown, fine SAND (wet)	40					65.1	
							139.1	
		41					137	
							117	
		42					75.9	
			R9	BAG	60/60		57.5	
		43					24.8	
							11.9	
		44					8.9	
							29.8	
		45						

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Log of Boring **LB10** Sheet 3 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	Elevation and Datum
Mount Kisco	NAVD88 289.72

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+244.7	R10a (0-12"): medium-dense, olive-brown, fine SAND, some medium sand, trace coarse sand, trace fine gravel, trace coarse gravel (wet)	45	R10	BAG	24/60		36.8 17.7 12.9	Collect LB10_45-46 at 1700 Red dye test: negative
	+243.7	R10b (12-24"): bedrock	46					2.5 1.1	
	+242.7		47						End of Boring at 47' Borehole backfilled with quick-release bentonite pellets and grout, capped with concrete at grade

Depth scale: 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70

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Log of Boring **LB11** Sheet 1 of 2

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 290.8	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/13/18	Date Finished: 8/13/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 24 ft	Rock Depth: 24 ft
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 3; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First 5; Completion; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Sergio Magana	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.8		0						
+290.6	(0-2") asphalt cover							
	R1 (2-36"): dense grey to brown to olive brown silty fine SAND (moist)	0–5	R1	DT	36/60		0.0, 0.0, 0.0, 0.0, 1.6, 1.9, 2.2	Blue dye test: Negative Collect LB11_4.5-5.5 at 0900
	R2a (0-20"): medium dense brown silty fine SAND (wet)	5–10	R2	DT	60/60		0.9, 2.7, 1.6, 0.4	
+284.1	R2b (20-60"): firm olive-brown clayey SILT, trace fine sand (wet)						4.8, 4.9, 2.4, 7.2, 7.3, 8.4, 6.1	soft brown clay lenses at 22", 31", 33", 34", 36", 37", 38", 44", 54"
+280.5	R3a (0-12"): medium-dense brown silty fine SAND (wet)	10–15	R3	DT	56/60		3.6, 8.9	Blue dye test: Negative Collect LB11_11-12 at 0915
+279.5	R3b (12-56"): firm olive-brown SILT, some clay, trace fine sand (wet)						38.9, 18.4, 17.9, 22.5, 13.1, 6.0, 2.6	
+274.8	R4a (0-18"): medium-dense brown silty fine SAND (wet)	15–20	R4	DT	48/60		1.3, 2.3, 13.6	clay lenses at 4", 6", 17"
+273.3	R4b (18-34"): firm to soft olive brown CLAY, trace silt (wet)						3.6, 12.8, 16.6	soft brown clay lenses at 28", 39", 45"
+271.8	R4c (34-40"): medium-dense grey silty fine SAND, trace clay (wet)	20					10.3, 9.7	

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Log of Boring **LB11** Sheet 2 of 2

Project	Project No.
41 Kensico Drive	190046301
Location	Elevation and Datum
Mount Kisco	NAVD88 290.8

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
270.8	R4d (40-48"): medium-dense grey silty fine SAND, some clay (wet)	20						
269.8	R5 (0-36"): medium-dense greyish brown fine SAND (wet)	21	R5	DT	36/48		2.9 4.1 8.6 3.3 2.0 0.4	Blue dye test: Negative Collect LB11_23-24 at 0930
266.8	End of boring at 24 feet bgs - refusal on rock.	24						End of boring at 24 feet bgs - refusal on rock. MW11 installed, see well construction log for details.

Depth scale: 20–45

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Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.6	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/14/18	Date Finished: 8/14/18
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 45 ft	Rock Depth: 45 ft
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 9; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First 3; Completion; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Adam Hutchinson	
Sampler: 2" Diameter 5-foot Long Steel DT			
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Field Engineer: Luke McCartney	

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.6								
+289.4	(0-3") asphalt cover	0						
	R1 (3-60"): medium-dense reddish-brown fine SAND, trace silt (moist to wet)	0–5	R1	DT	60/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Collect LB12_2-3 at 1300
	R2 (0-40"): medium-dense olive-brown fine SAND, trace silt (wet)	5–10	R2	DT	40/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R3 (0-46"): medium-dense olive-brown fine SAND, some silt (wet)	10–15	R3	DT	46/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 4.5	clay lense at 20"
+272.1	R4 (0-30"): medium dense grey silty fine SAND, trace clay (wet)	15–20	R4	DT	30/60		42.7, 66.8, 62, 166.5, 100.5	clay lense at 35"; Red dye test: Negative; Collect LB12_19-20 at 1310; Collect LB12_19-20 at 1310 for CVOCs

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.6

Elev. (ft)	Sample Description	Depth Scale
269.6	R5a (0-27"): medium dense olive-brown silty fine SAND (wet)	20
267.1	R5b (27-60"): stiff olive-brown clayey SILT (wet)	
264.6	R6a (0-19"): soft grey SILT, some clay (wet)	25
263.1	R6b (19-41"): stiff olive-grey clayeySILT (wet)	
261.1	R6c (41-60"): medium-dense fine SAND (wet)	
	R7 (0-52"): well-sorted medium-dense grey to olive-grey fine SAND (wet)	30
	R8a (0-21"): well-sorted medium-dense olive-brown fine SAND (wet)	35
	R8b (21-28"): medium-dense olive brown fine SAND, trace silt, trace clay (wet)	
	R9a (0-6"): loose olive brown fine SAND (wet)	40
247.4	R9b (6-12"): stiff olive-brown clayey SILT, trace fine sand (wet)	
246.6	R9c (12-21"): dense grey to brown coarse SAND, some medium sand (wet)	
245.6	End of boring at 44 feet	44

Sample Data

Number	Type	Recov. (in)	Penetr. resist BL/6in	Depth (ft)
R5	DT	60/60		20-25
R6	DT	60/60		25-30
R7	DT	52/60		30-35
R8	DT	28/60		35-40
R9	DT	21/48		40-44

Depth Scale	PID Reading (ppm)
20	414
	15.7
21	17.9
	30.1
22	21.4
	25.3
23	44.5
	30.2
24	49.8
	70.8
25	100.5
	77
26	108.5
	136.1
27	158.2
	114.7
28	135.6
	197
29	209.4
	225.5
30	191.8
31	34.5
	50.9
32	78.9
	45.5
33	39.5
	82.4
34	42.8
	18.3
35	3.9
36	
37	
	1.3
38	2.9
	15.9
39	35.2
	10.3
40	6.6
41	
42	
	1.6
43	13.9
	15.6
44	3.7
45	

Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)

Depth Scale	Remarks
20	Collect LB12_18-20 for BOD, COD, TOC at 1310
24	Red dye test: Negative
	Collect LB12_24-25 at 1315
27	clay lenses at 23", 27", 33", 37"
28	Red dye test: Negative
29	Collect LB12_29-30 at 1320
	Collect LB12_29-30 at 1320 for CVOCs
33	fine sand grading upward
34	Collect LB12_34-35 at 133- for CVOCs
	Red dye test: Negative
38	Red dye test: Negative
	Collect LB12_39-40 at 1335 for CVOCs
	Collect LB12_39-40 for BOD, COD, TOC at 1335
41	Red dye test: Negative
	Collect LB12_42-43 at 1340
	Collect LB12_42-43 at 1340 for CVOCs
43	End of boring at 44 feet - refusal, monitoring wells MW12 and MW12D completed, see well construction log for details.

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Log of Boring **LB13** Sheet 1 of 2

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 290.29	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/13/18	Date Finished: 8/13/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 30 ft	Rock Depth: 30 ft
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples — Disturbed: 3; Undisturbed: N/A; Core: N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.) — First: 5.5; Completion: ; 24 HR.: N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Sergio Magana	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.3								
+290.0	(0-4") brick	0					0.0	
	R1 (0-18"): loose brown to grayish-brown fine SAND, trace medium sand, trace coarse sand, trace fine gravel, brick (moist) [FILL]	0–5	R1	DT	18/60		0.0, 0.0, 0.0	
		5–10	R2	DT	31/60			Collect LB13_5-6 at 11:30 Red dye test: Negative
+282.8	R2 (0-31"): medium-dense olive to brown silty fine SAND (wet)						0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
+280.3	R3a (0-16"): medium-dense brown fine SAND, some silt (wet)	10–15	R3	DT	60/60		1.9, 2.3	clay lenses at 16" and 44"
+278.8	R3b (16-44"): firm olive-brown silty fine SAND, trace clay (wet)						2.3, 1.8, 1.4, 0.6	
+276.8	R3c (44-60"): medium-dense grayish-brown fine SAND, trace silt (wet)						1.2, 1.1, 1.8	
+275.3	R4a (0-17"): medium-dense olive-brown silty fine SAND (wet)	15–20	R4	DT	60/60		0.6, 0.4, 1.1	
+273.8	R4b (17-60"): firm olive brown to grey clayey SILT, trace fine sand (wet)						1.9, 1.0, 0.6, 0.8, 0.5, 0.6, 1.8	clay lenses at 23" and 30"
+270.3		20						

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Log of Boring **LB13** Sheet 2 of 2

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 290.29

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
270.3	R5a (0-19"): firm grey SILT, some clay, trace fine sand (wet)	20	R5	DT	60/60		
268.8	R5b (19-48"): firm grey clayey SILT, trace fine sand (wet)	21.5					clay lenses at 42" Collect LB12_23-24 at 1145 Red dye test at 23-24: Negative
266.3	R5c (48-60"): medium-dense grey fine SAND, some silt (wet)	24					
265.3	R6a (0-15"): medium-dense grey silty fine SAND, trace clay (wet)	25	R6	DT	60/60		
264.0	R6b (15-47"): stiff olive-grey clayey SILT (wet)	26.3					clay lenses at 18", 23", 56" Red dye test at 23-24: Negative
261.3	R6c (47-60"): medium-dense grey fine SAND, trace clay (wet)	29					Collect LB13_29-30 at 1200
260.3	End of boring at 30 feet bgs.	30					End of boring at 30 feet bgs. borehole backfilled with clean sand to grade, capped with concrete.

Depth	PID Reading (ppm)
20	1.7
20.5	1.6
21	3.7
21.5	2.1
22	4.4
22.5	5.2
23	6.4
23.5	3.6
24	5.0
24.5	1.6
25	0.8
25.5	1.3
26	1.9
26.5	1.2
27	1.8
27.5	0.8
28	1.1
28.5	0.4
29	1.6
29.5	0.8
30	0.3

Depth Scale: 20 – 45

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Log of Boring **LB14** Sheet 1 of 2

Field	Value	Field	Value
Project	41 Kensico Drive	Project No.	190046301
Location	Mount Kisco	Elevation and Datum	NAVD88 290.63
Drilling Company	AARCO Environmental Services, Inc.	Date Started	8/13/18
		Date Finished	8/13/18
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	30 ft
		Rock Depth	
Size and Type of Bit	2" Diameter Steel Macrocore Cutting Shoe	Number of Samples	Disturbed: 3; Undisturbed: N/A; Core: N/A
Casing Diameter (in)	N/A	Water Level (ft.)	First: ▽ 5; Completion: ▼; 24 HR.: ▼ N/A
Casing Depth (ft)		Drilling Foreman	Sergio Magana
Casing Hammer	N/A	Weight (lbs)	N/A
Drop (in)	N/A	Field Engineer	Luke McCartney
Sampler	2" Diameter 5-foot Long Steel DT		
Sampler Hammer	N/A	Weight (lbs)	N/A
Drop (in)	N/A		

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.6	R1a (0-8"): loose brown fine SAND, some silt, trace clay, true coarse sand (moist)	0	R1	MACROCORE	38/60		0.0	
							0.0	
+289.6	R1b (8-16"): soft black to olive CLAY, some silt (moist)	1					0.0	
							0.0	
+288.6	R1c (16-38"): olive to brown silty fine SAND, trace clay (moist to wet)	2					0.0	
							0.0	
		3					0.0	
							0.0	
		4						
								Collect LB14_4-5 at 1000
	▽ R2 (0-33"): medium-dense reddish-brown to brown to olive brown silty fine SAND (wet)	5	R2	MACROCORE	53/60			
							0.0	
		6					0.1	
							0.3	
		7					0,4	
							2.3	Clay lenses at 14", 25", and 37"
		8					4.3	
							5.0	
		9					7.8	
							7.8	
+280.6	R3a (0-19"): firm olive-brown SILT, trace clay (wet)	10	R3	MACROCORE	60/60		3.1	
							5.6	
		11					19.8	Clay lenses at 18", 22", and 54"
							7.1	
+278.6	R3b (19-54"): medium-dense silty fine SAND, trace clay (wet)	12					13.0	
							33.6	
		13					48.9	Blue dye test: negative
							10.3	Collect LB14_13-14 at 1015
+276.6	R3c (54-60"): firm olive-brown SILT (wet)	14					75.0	
							51.2	
+275.6	R4a (0-20"): stiff olive-brown clayey SILT (wet)	15	R4	MACROCORE	60/60		32.8	
							8.1	
		16					16.2	
+274.1	R4b (20-42"): medium-dense olive-brown silty fine SAND, trace clay (wet)						13.6	
		17					14.8	
							10.1	
		18					2.9	
							2.4	
+271.6	R4c (42-50"): stiff olive-brown clayey SILT, trace fine SAND	19					3.4	
							3	
+270.6		20						

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Log of Boring **LB14** Sheet 2 of 2

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 290.63

Elev. (ft)	Sample Description	Depth Scale	Sample Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+270.6	R5a (0-36"): very soft gray CLAY, trace silt (wet)	20	R5	MACROCORE	60/60		
+267.6	R5b (36-60"): stiff gray clayey SILT (wet)	23					
+265.6	R6a (0-20"): medium-dense gray silty fine SAND, trace clay (wet)	25	R6	MACROCORE	60/60		
+264.1	R6b (20-50"): stiff gray clayey SILT (wet)	26.5					Clay lenses at 21", 33", and 42"
+261.6	R6c (50-60"): well-sorted medium-dense gray fine SAND (wet)	29					Blue dye test: negative Collect LB14_29-30 at 1030
+260.6	End of Boring at 30 feet bgs.	30					End of boring at 30 feet bgs. Borehole backfilled with clean sand to grade.

PID Reading (ppm), 20–30 ft:

7.3	
0.2	
0.9	
0.8	
0.3	
2.1	
3.3	
4.1	
6.3	
3.5	
1.5	
0.3	
2.4	
4.5	
0	
3.6	
3.1	
3.0	
2.2	
3.4	
1.1	

Depth Scale: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

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Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.9	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/14/18	Date Finished: 8/14/18
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 56 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First 5; Completion; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Sergio Magana	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.9		0						
+289.4	R1a (0-6"): loose reddish-brown silty fine SAND (moist) [FILL]		R1	MACROCORE	27/60		0.0, 0.0	
+287.9	R1b (6-23"): dense olive silty fine SAND, some clay (moist)	1					0.0, 0.0, 0.0	
+284.2	R1c (23-27"): soft brown CLAY (moist)	2–4						
	R2a (0-9"): very soft olive-brown CLAY, trace silt (wet)	5	R2	MACROCORE	37.5/60			0900 Collect LB15_5-6 Red dye test: negative
+279.4	R2b (9-37.5"): dense olive fine SAND (wet)	6–9					0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R3a (0-3"): medium-dense reddish-brown fine SAND (wet)	10	R3	MACROCORE	58/60		0.0	
+276.9	R3b (3-26"): olive-brown silty fine SAND (wet)	11–12					54, 28, 55, 72, 61	clay lenses at 13", 26", and 48"
	R3c (26-60"): olive-brown to gray fine SAND, trace silt (wet)	13–14					60, 5, 40, 73.6	
+273.4	R4a (0-14"): medium-dense gray fine SAND, trace silt (wet)	15–16	R4	MACROCORE	60/60		51.3, 15.4, 45.1	clay lenses at 12", 24", 34", and 38"
+271.9	R4b (14-38"): medium-dense gray silty fine SAND, trace clay (wet)	17					18.1, 49.7, 73.1	
+270.9	R4c (38-50"): stiff gray clayey SILT (wet)	18					40, 38	
	R4d(50-60"): medium-dense gray silty fine SAND, trace clay (wet)	19–20					36, 75	

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Log of Boring **LB15** Sheet 2 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.9

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
269.9	R5a (0-16"): olive-gray silty fine SAND, trace clay	20	R5	MACROCORE	60/60		54.8 28.8	
268.4	R5b (16-53"): stiff olive gray clayey SILT (wet)	21 – 23					34.1 48.9 28 31 20	clay lenses at 9", 16", 24", 26", 30", 36", and 38"
265.9	R5c (50-60"): medium-dense olive-gray silty fine SAND (wet)	24					24 33	
264.9	R6a (0-48"): stiff gray clayey SILT (wet)	25 – 28	R6	MACROCORE	60/60		33.1 36.4 28.7 35.4 32.7 34.3 41.7	clay lenses at 11" and 25"
260.9	R6b (48-60"): medium-dense gray fine SAND, trace clay (wet)	29					37.1 44.4	
	R7a (0-20"): medium-dense gray fine SAND, some silt, trace clay (wet)	30 – 31	R7	MACROCORE	51.5/60		33.8 33.8	clay lenses at 2", 14-16", and 41-44"
	R7b (20-41"): medium-dense gray fine SAND, trace silt (wet)	32 – 33					32.7 30.6 105	0905 Collect LB15_33-34
256.4	R7c (41-48"): stiff gray clayey SILT, some fine sand (wet)						50.8	Red dye test: negative
255.9	R7d (48-51.5"): medium-dense gray fine SAND (wet)	34					66 40	
254.9	R8a (0-37"): stiff olive-gray clayey SILT (wet)	35 – 37	R8	MACROCORE	48/60		8.6 2.3 2.0 31.4 36.7	clay lenses at 3", 7.5", 9", 14", 17", and 32"
251.9	R8b (37-48"): medium-dense gray silty fine SAND (wet)	38 – 39					11.5 23.1 54 90.1	
249.9	R9a (0-36"): very soft olive gray CLAY (wet)	40 – 42	R9	MACROCORE	60/60		3 3.6 2.7 3 3.5 3.0	
246.9	R9b (36-48"): medium-dense olive-brown silty fine SAND, trace clay (wet)	43					46	
245.9	R9c (48-60"): well-sorted medium-dense olive-brown fine SAND (wet)	44 – 45					83 96	0920 Collect LB15_44-45 Red dye test: negative

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Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.9

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+244.9	R10a (0-19"): medium-dense oilve-brown fine SAND, trace silt (wet) R10b (19-27"): medium-dense gray fine SAND (wet)	45–50	R10	MACROCORE	27/60		50.8 30.5 48 33	
	+239.9	R11a (0-36"): very soft gray CLAY, some silt, trace coarse sand (wet)	50–53	R11	MACROCORE	48/60		10.7 9.7 3.6 3.8 6.5	
	+236.9	R11b (36-48"): soft olive-gray clayey SILT (wet)	53–55					6.5 7 38.9 39.1	0940 Collect LB15_53-54 Red dye test: negative
	+234.9	white metamorphic rock	55–56	R12	MACROCORE	0/0		39.1	Encountered bedrock at about 56' feet bgs, MW15 installed. See NW construction log for details. End of boring at 56 feet bgs.
	+233.9		56–70						

LANGAN Log of Boring **LB16** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.81	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/10/18	Date Finished: 8/10/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 20 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 1; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ▽ 4; Completion ▼; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Thomas Seickel	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.8 / +289.4	(0-3") asphalt cover	0					0.0	
	R1 (3-15"): medium-dense brown fine SAND, some silt, trace clay, trace fine sand, concrete, brick (moist) [FILL]	0–5	R1	MACROCORE	15/60		0.0, 0.0, 0.0	
		4 (▽)						
		5–10	R2	MACROCORE	26/60			0745 Collect LB16_5-6
+281.8	R2a (0-10"): very soft black CLAY (wet)	8					0.0, 0.0	
+281.1	R2b (10-20"): dense olive fine SAND, trace coarse sand (wet)	9					0.0	
	R2c (20-26"): medium-dense olive medium SAND, trace coarse sand (wet)	10					0.0, 0.0	
	R3a (0-5"): dense brown coarse SAND, trace medium sand, trace fine sand (wet)	10–15	R3	MACROCORE	37/60		0.0, 0.0	
+277.3	R3b (5-19"): dense brown to gray silty fine SAND (wet)	13					0.0	
+276.3	R3c (19-37"): dense gray fine SAND, trace silt (wet)	13–15					0.0, 0.0, 0.0, 0.0	
	R4 (0-55"): dense gray fine SAND, some silt	15–20	R4	MACROCORE	55/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	End of boring at 20 feet bgs. Borehole backfilled with sand and capped with asphalt.
+269.8		20						

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Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.92	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/10/18	Date Finished: 8/10/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 50 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First 5; Completion; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Thomas Seickel	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.9	R1 (0-18"): loose brown fine SAND, trace silt, trace medium sand, trace coarse sand (moist) [FILL]	0–5	R1	MACROCORE	18/60		0.0, 0.0, 0.0, 0.0	0815 Collect LB17_4-5
+282.4	R2a (0-4"): loose gray fine SAND, (wet) [FILL]	5–10	R2	MACROCORE	23/60			
+281.9	R2b (4-7"): very soft black CLAY (moist)							
	R2c (7-16"): medium-dense gray medium SAND, some coarse sand (wet) R2d (16-23"): medium-dense gray to brown fine SAND, trace fine gravel (wet)						0.0, 2.3, 1.4, 1.2	
	R3a (0-9"): medium-dense brown coarse SAND, trace medium sand (wet) R3b (9-37"): medium-dense gray fine SAND, trace silt (wet)	10–15	R3	MACROCORE	37/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R4 (0-46"): medium-dense gray fine SAND, trace silt (wet)	15–20	R4	MACROCORE	46/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.4, 1.3	

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.92

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+269.9		20						
+268.9	R5a (0-8"): medium-dense gray silty fine SAND, trace clay (wet)	21	R5	MACROCORE	52/60		0.3 0.9	
+267.9	R5b (8-24"): stiff gray clayey SILT (wet)	22					0.6 0.8	0825 Collect LB17_22-24
+266.9	R5c (24-34"): stiff gray CLAY (wet)	23					2.5	micro lenses of silt
+265.9	R5d (34-52"): stiff olive-gray clayey SILT (wet)	24					1.7 2.5	Blue dye test at 24-25 feet bgs: negative
+264.9	R6a (0-36"): medium-dense fine SAND, trace silt (wet)	25	R6	MACROCORE	58/60		1.0 1.3 1.4 1.9	
+261.9	R6b (36-58"): medium-dense silty fine SAND (wet)	28					0.9 0.7 0.8 1.2	clay lenses between 38-40"
	R7a (0-34"): medium-dense clayey silty fine SAND (wet)	30	R7	MACROCORE	34/60		0.5 0.2 1.3 1.2 1.1 0.9 1.5	clay lenses at 19-20"
		35	R8	MACROCORE	35/60			
+252.9	R8a (0-18"): medium-dense gray fine SAND (wet)	37					2.0 2.7	clay micro-lenses
+251.4	R8b (18-30"): medium-dense silty fine SAND, trace clay (wet)	38.5					3.1 2.7	
+250.4	R8c (30-35"): stiff olive-gray CLAY (moist)	39.5					1.1 2.3	
	R9a (0-13"): very soft olive gray CLAY (wet)	40	R9	MACROCORE	29/60		1.3 1.7 2.1	0845 Collect LB17_43-44
+246.4	R9b (13-29"): stiff olive-brown clayey SILT (moist to wet)	44					4.7 4.1	Blue dye test: negative
+244.9		45						

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Log of Boring LB17 Sheet 3 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.92

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Sample Data: Type	Sample Data: Recov. (in)	Sample Data: Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+244.9	R10a (0-22"): very soft olive-brown CLAY, some silt (wet)	45	R10	MACROCORE	59/60		2.4	
								0.1	
			46					0.2	
								0.2	
	+242.9	R10b (22-45"): medium-dense olive-brown silty fine SAND (wet)	47					0.3	clay lenses at 37-38"
								0.9	
			48					1.2	0900 Collect LB17_49-50
								1.2	clay lenses 50-51" and 56-57"
	+240.9	R10c (45-59"): medium-dense brown fine SAND, trace silt (wet)	49					0.9	blue dye test: negative
	+239.9		50					2.7	End of boring at 50 feet bgs (Refusal).

Depth scale continues: 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70

\\LANGAN.COM\DATA\WPW\DATA3\190046301\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\41 KENSICO DRIVE - RI + SRI BORING LOGS.GPJ ... 6/28/2019 6:06:13 PM ... Report: Log - LANGAN

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Log of Boring **LB18** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301		
Location: Mount Kisco	Elevation and Datum: NAVD88		
Drilling Company: Eastern Environmental	Date Started: 5/3/19	Date Finished: 5/3/19	
Drilling Equipment: Geoprobe 420M	Completion Depth: 12 ft	Rock Depth:	
Size and Type of Bit: N/A	Number of Samples — Disturbed: 1	Undisturbed: N/A	Core: N/A
Casing Diameter (in): N/A; Casing Depth (ft):	Water Level (ft.) — First: 5	Completion:	24 HR.: N/A
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A	Drilling Foreman: Patrick Slavin		
Sampler: 2" Diameter 3-foot Long Steel MC			
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A	Field Engineer: Lauren McMahon		

Sample Description	Depth (ft)	Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks
4" concrete slab	0					
R1: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel (dry) [FILL]	0–3	R1	MACROCORE	8/36		
R2a (0-10"): unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel, with concrete, with brick (dry) [FILL] R2b (10-18"): unconsolidated dark brown fine SAND, some silt, trace clay, trace fine gravel, with brick (wet) [FILL]	3–6	R2	MACROCORE	18/36		1200 Collect LB18_5-6
R3a (0-12"): unconsolidated dark brown fine SAND, some silt, trace clay, trace fine gravel, with brick (wet) [FILL] R3b (12-22"): unconsolidated black silty fine SAND, some clay, organic fibers (wet) R3c (22-33"): unconsolidated grey fine SAND, trace silt, trace medium sand, trace coarse sand (wet)	6–9	R3	MACROCORE	33/36		
R4a (0-30"): unconsolidated grey coarse SAND, trace medium sand, trace fine sand (wet) R4b (30-36"): unconsolidated brown-grey silty fine SAND (wet)	9–12	R4	MACROCORE	36/36		End of boring at 12 feet bgs. Borehole backfilled with clean sand to grade and capped with concrete.

PID Reading (ppm), top to bottom: 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.5, 0.7, 11.8, 7.7, 15.3, 7.2

Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)

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Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88 290.6
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 8/14/18 / Date Finished: 8/14/18
Drilling Equipment: Geoprobe 6610 DT	Completion Depth: 45 ft / Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft):	Water Level (ft.): First ▽ 5.5 / Completion ▼ / 24 HR. ▼ N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sergio Magana
Sampler: 2" Diameter 5-foot Long Steel DT	Field Engineer: Luke McCartney
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Elev. (ft)	Sample Description	Depth Scale (ft)	Sample Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.6 to +290.1	(0-2") concrete slab	0					0.0	
+290.1 to +284.6	R1 (2-36"): dense brown to gray fine SAND, some silt, trace coarse sand, trace fine gravel (moist) [FILL]	0–5	R1	MACROCORE	36/60		0.9, 0.0, 0.0, 0.0, 0.0, 6.0	1130 Collect LB18_5-6
+284.6	R2a (0-6"): medium-dense dark gray to olive fine SAND, trace silt, trace clay, trace coarse sand (moist to wet) R2b (6-44"): medium-dense olive to reddish-brown fine SAND, trace silt (wet)	5–10 (▽ 5.5)	R2	MACROCORE	49/60		0.0, 0.0, 0.2, 1.3, 3.1, 12.9, 15.5, 22.9	
	R3 (0-57"): dense olive-brown fine SAND, some silt (wet)	10–15	R3	MACROCORE	57/60		30.9, 33.1, 61.6, 52.8, 52.4, 69, 47.9, 66	
+275.6	R4a (0-48"): dense gray silty fine SAND, trace clay (wet)	15–20	R4	MACROCORE	60/60		38.3, 12.6, 12.9, 15.9, 42.5, 14.5, 13.2, 8.1, 19.9, 30.4	clay lenses at 43"
+270.6	R4b (48-60"): dense gray silty fine SAND, some clay (wet)	20						

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 290.6

Elev. (ft)	Sample Description	Depth Scale (ft)
270.6 – 266.6	R5a (0-51"): firm gray clayey SILT, trace fine sand (wet)	20 – 24
266.6 – 266.1	R5b (51-56"): firm olive gray CLAY, trace silt (wet)	24 – 24.5
266.1 – 263.1	R5c (56-60"): dense gray silty fine SAND (wet) R6a (0-30"): medium-dense olive-gray silty fine SAND, trace clay (wet)	24.5 – 27.5
263.1 – 261.6	R6b (30-50"): firm olive-gray clayey SILT, trace fine sand (wet)	27.5 – 29
261.6 – 260.6	R6c (50-60"): medium-dense gray SILT, some fine sand, trace clay (wet)	29 – 30
260.6 – 259.6	R7a (0-12"): medium-dense olive-gray fine SAND, trace sily (wet)	30 – 31
259.6 – 257.6	R7b (12-36"): stiff olive-gray SILT, trace fine sand (wet)	31 – 33
257.6 – 256.6	R7c (36-48"): stiff olive-gray clayey SILT (wet)	33 – 34
256.6 – 254.6	R7d (48-54"): medium-dense gray fine SAND (wet) R8a (0-7"): medium-dense gray fine SAND (wet)	34 – 36
254.6 – 247.6	R8b (7-40"): stiff olive-gray CLAY, trace silt, trace fine sand (wet) R9a (0-36"): firm olive-gray CLAY, trace silt, trace fine sand (wet)	36 – 43
247.6 – 245.6	R9b (36-48"): medium-dense olive-brown fine SAND, trace silt, trace clay (wet) R9c (48-60"): medium-dense olive-brown fine SAND (wet)	43 – 45

Sample Data

Depth (ft)	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
20 – 25	R5	MACROCORE	60/60		27.7, 5.5, 7.5, 16.4, 13.8, 24.3, 22.1, 16.9, 22.4, 22.8	clay lenses at 8", 10", 12", 25", 44", 47", 51"
25 – 30	R6	MACROCORE	60/60		12.2, 15.5, 16.53, 18.9, 15.5, 20.1, 22.6, 12.6, 9.7, 20.1	clay lenses at 5", 30", 32-34", 38", 44"
30 – 35	R7	MACROCORE	54/60		13.3, 13.1, 13.3, 19.4, 19, 8.8, 11.1, 18.9, 12.1, 156	clay lenses at 12", 32", 41", 44" 1145 Collect LB19_34.5-35.5 Red dye test: negative
35 – 40	R8	MACROCORE	60/60		70, 60.1, 88.8, 53.6, 88.8, 36.6, 34.3, 50.2, 30.3, 47.7	
40 – 45	R9	MACROCORE	60/60		29.7, 33.6, 47.6, 46.9, 46.2, 42.6, 46.9, 42.9, 69.9, 63.2	1200 Collect LB19_44-45 Red dye test: negative End of boring at 45 feet bgs, Refusal on rock. MW19/MW19D installed. See MW construction log for details.

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Log of Boring **LB20** Sheet 1 of 3

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 289.9	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/20/18	Date Finished: 8/20/18
Drilling Equipment: Geoprobe 8140LC Sonic Rig		Completion Depth: 49 ft	Rock Depth: 49 ft
Size and Type of Bit: 4" Diameter Steel Sonic Carbide Bit		Number of Samples: Disturbed 3; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ∇ 5; Completion ▼; 24 HR. ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Thomas Seickel	
Sampler: 4" Diameter 5-foot long Steel Sonic Sampler		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale
+289.9	R1 (0-43"): loose, brown, fine SAND, trace medium sand, trace coarse sand, trace fine gravel, glass, plastic (moist) [FILL]	0
	R2a (0-14"): dark brown, medium SAND, some fine sand, trace fine gravel, timber (wet) [FILL]	8
+281.1	R2b (14-20"): stiff, gray, CLAY, trace sit, trace fine sand (moist)	9
+280.6	R2c (20-28): loose, gray, fine SAND, some medium sand, trace coarse sand (wet)	10
	R3a (0-14"): loose, gray, fine SAND, some medium sand, trace coarse sand (wet)	11.5
+277.5	R3b (14-45"): medsium-dense, gray, silty fine SAND (wet)	12.5
	R4a (0-24"): loose, gray, silty fine SAND (wet)	15
	R4b (23-48"): loose, greyish brown, silty fine SAND (wet)	17
+270.9	R4c (48-60"): stiff, greyish-brown, clayey SILT, trace fine sand (wet)	19
+269.9		20

Sample Data

Depth (ft)	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
0-5	R1	BAG	43/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
5-10	R2	BAG	28/60		0.0, 0.0, 0.0, 0.0, 0.0	Collect LB20_5-6 at 8:15 Red dye test: negative
10-15	R3	BAG	45/60		0.0, 2.8, 24.3, 24.9, 37.8, 24.1, 33.1, 16.5	
15-20	R4	BAG	60/60		19.4, 15.9, 24.0, 14.1, 23.8, 32.6, 29.2, 32.4, 19.7, 14.5	Clay lenses at 49" and 54"

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Log of Boring **LB20** Sheet 2 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	**Elevation and Datum**
Mount Kisco	NAVD88 289.9

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+269.9	R5a (0-24"): loose, greyish-brown, silty fine SAND, trace clay (wet)	20	R5	BAG	60/60		31.6	
							21.7	
		21					10.0	
							11.2	
	R5b (24-60"): medium-dense, greyish-brown, silty fine SAND, trace clay (wet)	22					25.1	Clay lenses at 14", 22", 39", 40", 46"
							20.7	
		23					16.7	
							36.9	
		24					11.1	
							15.0	
		25	R6	BAG	55/60		22.9	
	R6: (0-55"): loose, greyish brown, silty fine SAND (wet)						15.6	
		26					12.8	
							7.4	
		27					12.5	
							3.7	
		28					8.1	
							11.2	
		29					16.4	
							12.8	
+259.9	R7a (0-9"): olive-brown, medium-dense, fine SAND (wet)	30	R7	BAG	60/60		25.5	
+259.2	R7b (9-60"): stiff, olive-brown, clayey SILT, trace fine sand (wet)						25.9	
		31					22.0	
							30.0	Clay lenses at 10", 21", 25", 31", 40", 49", 59"
		32					35.9	
							48.1	
		33					78.0	Collect LB20_32.5-33.5 at 8:40
							21.8	
		34					115.8	Red dye test: negative
							41.8	
+254.9	R8a (0-57"): loose, olive-brown, fine SAND, trace silt (wet)	35	R8	BAG	60/60		68.8	Drive 6" casing to 35 feet below grade surface
							41.9	
		36					4.6	
							7.5	
+252.7		37					23.9	
	R8b (27-56"): medium-dense, olive brown, silty fine SAND, some clay (wet)						49.9	Clay lenses at 20"
		38					29.4	
							27.5	
		39					29.9	
+250.2	R8c (56-60"): medium-dense, olive-brown, fine SAND (wet)						50.5	
	R9a (0-52"): loose, olive-brown, fine SAND (wet)	40	R9	BAG	60/60		50.1	
							16.6	
		41					3.4	
							19.7	
		42					50.4	
							45.2	
		43					25.1	
							18.1	
		44					45.1	Weathered rock in last 8"
	R9b (52-60"): loose, olive-brown, fine SAND, trace clay						35.3	
		45						

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Log of Boring **LB20** Sheet 3 of 3

Project	Project No.
41 Kensico Drive	190046301
Location	Elevation and Datum
Mount Kisco	NAVD88 289.9

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+244.9	(wet) R10a (0-38"): loose, olive-brown, fine SAND (wet)	45 46	R10	BAG	48/60		18.1 11.1 22.5	
			47					25.3 7.5 22.3	Collect LB20_47-48 at 09:00 Red dye test: negative
	+240.9	R10b (38-48"): loose, whitish-brown, coarse SAND, some fine sand, trace fine gravel, trace coarse gravel	48 49					9.2 8.5 11.9	Bedrock nested End of Boring at 49 feet bgs. Well couplet MW20/20D set. See well construction log for details.
			50–70						

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Log of Boring **LB21** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301		
Location: Mount Kisco	Elevation and Datum: NAVD88 289.7		
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 8/10/18	Date Finished: 8/10/18	
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 20 ft	Rock Depth:	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples — Disturbed: 2	Undisturbed: N/A	Core: N/A
Casing Diameter (in): N/A; Casing Depth (ft):	Water Level (ft.) — First: 5	Completion:	24 HR.: N/A
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A	Drilling Foreman: Thomas Seickel		
Sampler: 2" Diameter 5-foot Long Steel DT			
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A	Field Engineer: Luke McCartney		

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.7	R1a (0-18"): medium-dense fine brown SAND, trace coarse sand (moist) [FILL]	0	R1	MACROCORE	22/60		0.0, 0.0, 0.0	
	R1b (18-22"): black coarse SAND, some fine gravel (moist) [FILL]	2					0.0, 0.0	
		5	R2	MACROCORE	10/60			0915 Collect LB21_5-6
+280.5	R2a (0-2"): black plastic and timber (wet) [FILL]	9					0.0	
+280.0	R2b (2-8"): very soft black CLAY (moist to wet)						0.0	
	R2c (8-10"): dark gray to black fine SAND, some coarse sand (wet)	10	R3	MACROCORE	6/60		0.0	
		14						Poor Recovery
	R3 (0-6"): medium-dense gray fine SAND, some coarse sand (wet)	15	R4	MACROCORE	29/60		0.0, 0.0	
+272.2	R4a (0-26"): medium-dense silty fine SAND (wet)	18					0.4, 1.5, 2.1, 4.4	clay micro-lenses; 0925 Collect LB21_18-19; Blue dye test: negative
+270.2	R4b (26-29"): stiff olive-gray clayey SILT (wet)	19					3.1, 0.6	End of boring at 20 feet bgs. Borehole backfilled with clean sand to grade.
+269.7		20						

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Log of Boring **LB22** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 290.58	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/7/18	Date Finished: 8/7/18
Drilling Equipment: Geoprobe 420M		Completion Depth: 15 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 1; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ▽ 11; Completion ▼; 24 HR. ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Thomas Seickel	
Sampler: 2" Diameter 3-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.6	(0-8"): concrete slab	0					0.0	
+289.8	R1 (8-26"): loose brown fine SAND, some silt, trace medium sand, trace coarse sand (dry) [FILL]	0–3	R1	MACROCORE	26/36		0.0, 0.0, 0.0	
	R2a (0-6"): loose brown fine SAND, some silt, trace medium sand, trace coarse sand, trace fine gravel (dry) [FILL] R2b (6-12"): loose silty fine SAND, trace clay, brick (dry) [FILL]	3–6	R2	MACROCORE	12/36		0.0, 0.0, 0.0	
	R3 (0-7"): loose trace fine SAND, trace medium sand, trace coarse sand (dry) [FILL]	6–9	R3	MACROCORE	7/36		0.0, 0.0	Poor Recovery
+279.6	R4a (0-8"): loose brown fine SAND, trace silt, trace clay, trace coarse sand, trace fine gravel, brick (moist) [FILL]	9–12	R4	MACROCORE	18/36		0.0, 0.0	1305 Collect LB22_11-12
+279.1	R4b (8-13"): stiff gray silty fine SAND (wet) R4c (13-18"): stiff gray SILT (wet)						0.0, 0.0	
	R5a (0-24"): stiff gray SILT (wet) R5b (24-36"): stiff gray SILT, some fine sand (wet)	12–15	R5	MACROCORE	36/36		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	End of Boring at 15 feet bgs. Borehole backfilled with clean sand to grade and capped with concrete.
+275.6		15–20						

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Log of Boring **LB23 (RIWP)** Sheet 1 of 1

Project: 41 Kensico Drive			Project No.: 190046301		
Location: Mount Kisco			Elevation and Datum: NAVD88 290.87		
Drilling Company: AARCO Environmental Services, Inc.			Date Started: 8/13/18	Date Finished: 8/13/18	
Drilling Equipment: Geoprobe 7822 DT			Completion Depth: 15 ft	Rock Depth:	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe			Number of Samples	Disturbed: 2	Undisturbed: N/A / Core: N/A
Casing Diameter (in): N/A		Casing Depth (ft):	Water Level (ft.)	First: ∇ 4.5	Completion: ▼ / 24 HR.: ▼ N/A
Casing Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A	Drilling Foreman: Sergio Magana		
Sampler: 2" Diameter 5-foot Long Steel DT			Field Engineer: Luke McCartney		
Sampler Hammer: N/A	Weight (lbs): N/A	Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+290.9	R1 (0-38"): medium-dense brown to black silty fine SAND, some clay, trace coarse sand, trace fine gravel (moist to wet) [FILL]	0–5	R1	MACROCORE	38/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	plastic chips at 4.5 feet bgs; 0800 Collect LB23_4-5 and SBDUP02_081318
+283.4	R2a (0-4"): medium-dense black fine SAND, some medium sand, trace coarse sand, trace fine gravel (wet) [FILL]	5–10	R2	MACROCORE	34/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
+282.4	R2b (4-14"): medium-dense brown silty fine SAND, some clay (wet)							
+281.9	R2c (14-24"): soft dark brown CLAY, trace silt (wet)							
	R2d (24-34"): dense gray silty fine SAND (wet)							
	R3a (0-12"): stiff grayish-brown silty fine SAND (wet)	10–15	R3	MACROCORE	38/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0815 Collect LB23_12-13; micro-lenses of clay at 18", 31", and 33"
+277.9	R3b (12-38"): stiff grayish-brown clayey SILT, some fine sand (wet)							
	R4 (0-35): stiff gray-brown clayey SILT, some fine sand (wet)	15–20	R4	MACROCORE	35/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0	micro-lenses of clay at 14", 17", and 27"
+270.9		20						End of Boring at 20 feet bgs. Borehole backfilled with clean sand to grade.

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Log of Boring **LB23 (SRIWP)** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88
Drilling Company: Eastern Environmental	Date Started: 5/6/19 — Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT	Completion Depth: 10 ft — Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples — Disturbed: 5 — Undisturbed: N/A — Core: N/A
Casing Diameter (in): N/A — Casing Depth (ft):	Water Level (ft.) — First: ▽ 4 — Completion: ▼ — 24 HR.: ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Patrick Slavin
Sampler: 2" Diameter 4-foot Long Steel MC	Field Engineer: Lauren McMahon
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Depth (ft)	Sample Description	Sample Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
0–2	Hand Auger: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel (moist) [FILL]	HAND AUGER	HAND AUGER	24/24		0.0, 0.0, 0.0	1120 Collect LB23_0-2
2–6	R1: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel, with brick, with plastic (moist) [FILL] (water level ▽ at 4 ft)	R1	MACROCORE	27/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0	1121 Collect LB23_2-4
6–10	(FILL continued to ~7.6 ft)	R2	MACROCORE	29/48		0.0, 0.0, 0.0, 0.0	1122 Collect LB23_6-8
~7.6–8.4	R2a (0-10"): unconsolidated black fine SAND, trace fine gravel, trace medium sand, trace clay (wet)					0.0	1123 Collect LB23_8-10
~8.4–9.2	R2b (10-20"): unconsolidated olive-brown fine SAND, trace medium sand, trace silt (wet)					0.0, 0.0	
~9.2–9.8	R2c (20-27"): unconsolidated black silty fine SAND, some clay, trace silt (wet)					0.0	
~9.8–10	R2d (27-29"): unconsolidated grey fine SAND, trace medium sand, trace silt, trace clay (wet)					0.0	
10						0.0	End of boring at 10 feet bgs. Borehole backfilled with clean sand to grade.

Depth Scale: 0–20 ft. Material Symbol and Elev. (ft) columns shown.

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Log of Boring **LB23_E1** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88	
Drilling Company: Eastern Environmental		Date Started: 5/6/19	Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 8 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ▽ 4; Completion ▼; 24 HR. ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Patrick Slavin	
Sampler: 2" Diameter 4-foot Long Steel MC		Field Engineer: Lauren McMahon	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R1: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel, with brick, with plastic (moist) [FILL]	0	R-1	MACROCORE	24/48		0.0	1205 Collect LB23_E1_0-2
			1					0.0, 0.0	
			2					0.0, 0.0	1206 Collect LB23_E1_2-4
			3					0.0, 0.0	
		▽	4	R-2	MACROCORE	31/48			1207 Collect LB23_E1_4-6
			5					0.0	
		R2a (0-8"): unconsolidated brown fine SAND, trace fine gravel, trace medium sand, trace clay (wet) [FILL] R2b (8-18"): unconsolidated grey fine SAND, trace medium sand, trace clay, trace fine gravel, with plastic (wet) [FILL]	6					0.0, 0.0, 0.0	1208 Collect LB23_E1_6-8
		R2c (18-28"): unconsolidated black silty fine SAND, some clay, organic fibers (wet)	7					0.0, 0.0	
		R2d (28-31"): unconsolidated grey fine SAND, trace silt, trace clay (wet)	8					0.0	End of boring at 8 feet bgs. Borehole backfilled with clean sand to grade.
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LB23_N1** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88	
Drilling Company: Eastern Environmental		Date Started: 5/6/19	Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 8 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First 4; Completion; 24 HR. N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Patrick Slavin	
Sampler: 2" Diameter 4-foot Long Steel MC		Field Engineer: Lauren McMahon	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	R1: unconsolidated brown-black fine SAND, some silt, trace clay, trace fine gravel, with brick, with plastic (moist) [FILL]	0–4	R-1	MACROCORE	37/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0950 Collect LB23_N1_0-2; 0951 Collect LB23_N1_2-4
	R2a (0-6"): unconsolidated black fine SAND, trace fine gravel, trace medium sand, trace coarse sand, trace clay, with brick (wet) [FILL]	4–8	R-2	MACROCORE	30/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0952 Collect LB23_N1_4-6; 0953 Collect LB23_N1_6-8
	R2b (6-20"): unconsolidated olive-brown fine SAND, trace medium sand, trace silt (wet)							
	R2c (20-30"): unconsolidated black silty fine SAND, some clay, organic fibers (wet)	8						End of boring at 8 feet bgs. Borehole backfilled with clean sand to grade.

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Log of Boring LB23_N2

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88	
Drilling Company: Eastern Environmental		Date Started: 5/6/19	Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 8 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ▽ 4; Completion ▼; 24 HR. ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Patrick Slavin	
Sampler: 2" Diameter 4-foot Long Steel MC		Field Engineer: Lauren McMahon	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R1: unconsolidated brown-black fine SAND, some silt, trace clay, trace fine gravel, with brick, with concrete (moist) [FILL]	0	R-1	MACROCORE	27/48		0.0	1035 Collect LB23_N2_0-2
			1					0.0, 0.0	
			2					0.0, 0.0	1036 Collect LB23_N2_2-4
			3					0.0, 0.0	
		▽	4	R-2	MACROCORE	30/48			1037 Collect LB23_N2_4-6
			5					0.0, 0.0	
		R2a (0-6"): unconsolidated black fine SAND, trace fine gravel, trace medium sand, trace clay, with brick (wet) [FILL]	6					0.0, 0.0	1038 Collect LB23_N2_6-8
		R2b (6-20"): unconsolidated olive-brown fine SAND, trace medium sand, trace silt (wet)	7					0.0, 0.0	
		R2c (20-30"): unconsolidated black silty fine SAND, some clay, organic fibers (wet)	8					0.0	End of boring at 8 feet bgs. Borehole backfilled with clean sand to grade.
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LB23_S1** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88	
Drilling Company: Eastern Environmental		Date Started: 5/6/19	Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 8 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples: Disturbed 4; Undisturbed N/A; Core N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.): First ▽ 4; Completion ▼; 24 HR. ▼ N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Patrick Slavin	
Sampler: 2" Diameter 4-foot Long Steel MC		Field Engineer: Lauren McMahon	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R1: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel, with concrete, with plastic (moist) [FILL]	0					0.0	1211 Collect LB23_S1_0-2
			1					0.0	
								0.0	
			2	R-1	MACROCORE	28/48		0.0	1212 Collect LB23_S1_2-4
								0.0	
			3					0.0	
								0.0	
		▽	4						1213 Collect LB23_S1_4-6
		R2a (0-10"): unconsolidated black fine SAND, trace fine gravel, trace medium sand, trace coarse sand, trace clay, with glass (wet) [FILL]	5					0.0	
								0.0	
		R2b (10-30"): unconsolidated grey fine SAND, trace medium sand, trace silt (wet)	6	R-2	MACROCORE	38/48		0.0	1214 Collect LB23_S1_6-8
								0.0	
			7					0.0	
		R2c (30-38"): unconsolidated grey fine SAND, trace silt, trace clay (wet)						0.0	
			8					0.0	End of boring at 8 feet bgs. Borehole backfilled with clean sand to grade.
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LB23_S2** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88
Drilling Company: Eastern Environmental	Date Started: 5/6/19 — Date Finished: 5/6/19
Drilling Equipment: Geoprobe 6610 DT	Completion Depth: 8 ft — Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples — Disturbed: 4 — Undisturbed: N/A — Core: N/A
Casing Diameter (in): N/A — Casing Depth (ft):	Water Level (ft.) — First: 4 — Completion: — 24 HR.: N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Patrick Slavin
Sampler: 2" Diameter 4-foot Long Steel MC	Field Engineer: Lauren McMahon
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R1: unconsolidated brown fine SAND, some silt, trace clay, trace fine gravel, with plastic (moist) [FILL]	0–4	R-1	MACROCORE	32/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	1220 Collect LB23_S2_0-2; 1221 Collect LB23_S2_2-4
		(water level at 4)	4						1222 Collect LB23_S2_4-6
		R2a (0-18"): unconsolidated olive-brown fine SAND, trace medium sand, trace silt (wet)	4.8–6.3	R-2	MACROCORE	38/48		0.0, 0.0, 0.0	1223 Collect LB23_S2_6-8
		R2b (18-30"): unconsolidated black-brown silty fine SAND, some clay, organic fibers (wet)	6.3–7.2					0.0, 0.0	
		R2c (30-38"): unconsolidated grey fine SAND, trace medium sand, trace silt (wet)	7.2–8					0.0, 0.0	
			8						End of boring at 8 feet bgs. Borehole backfilled with clean sand to grade.

Depth scale: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

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Log of Boring **LB24** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88 288.36	
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/10/18	Date Finished: 8/10/18
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 20 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples — Disturbed: 2; Undisturbed: N/A; Core: N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.) — First: 2; Completion: ; 24 HR.: N/A	
Casing Hammer: N/A	Weight (lbs): N/A; Drop (in): N/A	Drilling Foreman: Thomas Seickel	
Sampler: 2" Diameter 5-foot Long Steel DT		Field Engineer: Luke McCartney	
Sampler Hammer: N/A	Weight (lbs): N/A; Drop (in): N/A		

Elev. (ft)	Sample Description	Depth Scale (ft)
+288.4 to +287.9	(0-6"): asphalt cover	0
+287.9 to +285.9	R1a (0-26"): medium-dense brown fine SAND, some silt (wet)	
+285.9 to +280.9	R1b (26-36"): very soft black CLAY (wet)	
	R2a (0-5"): soft gray CLAY, some silt (moist)	
+280.9 to +279.9	R2b (5-17"): dense gray silty fine SAND (moist)	
+279.9 to +279.4	R2c (17-24"): stiff brown to gray CLAY, some silt, trace coarse sand (moist)	
+279.4	R2d (24-37"): brown to reddish-brown fine SAND, some medium sand, trace coarse sand, trace fine gravel (wet)	
to +275.9	R3a (0-12"): medium-dense brown to reddish-brown fine SAND, some coarse sand, trace medium sand (wet)	
+275.9 to +272.4	R3b (12-40"): brown to gray silty fine SAND (wet)	
+272.4 to +268.4	R4 (0-49"): medium-dense gray fine SAND, some silt (wet)	20

Number	Type	Recov. (in)	Penetr. resist BL/6in	Depth (ft)
R1	MACROCORE	36/60		0-5
R2	MACROCORE	37/60		5-10
R3	MACROCORE	40/60		10-15
R4	MACROCORE	49/60		15-20

PID Reading (ppm):
- R1: 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
- R2: 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
- R3: 0.1, 0.4, 1.1, 2.1, 2.3, 2.7, 2.1, 1.3, 0.0
- R4: 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0

Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
- 0945 Collect LB24-1-2
- 1000 Collect LB24_13-14
- Blue dye test: negative
- End of Boring at 20 feet bgs. Borehole backfilled with clean sand to grade.

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Log of Boring **LB25** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301		
Location: Mount Kisco		Elevation and Datum: NAVD88 289.36		
Drilling Company: AARCO Environmental Services, Inc.		Date Started: 8/8/18	Date Finished: 8/8/18	
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 20 ft	Rock Depth:	
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples — Disturbed: 3	Undisturbed: N/A	Core: N/A
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.) — First: 7	Completion:	24 HR.: N/A
Casing Hammer: N/A	Weight (lbs): N/A; Drop (in): N/A	Drilling Foreman: Thomas Seickel		
Sampler: 2" Diameter 4-foot Long Steel DT		Field Engineer: Luke McCartney		
Sampler Hammer: N/A	Weight (lbs): N/A; Drop (in): N/A			

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+289.4	R1 (0-31"): loose fine brown SAND, some silt, trace fine gravel, glass (moist) [FILL]	0–4	R1	MACROCORE	31/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	R2a (0-10"): brick and timber [FILL]	4–8	R2	MACROCORE	19/48		0.0	
+282.4	R2b (10-19"): soft black organic CLAY (moist)	7					0.0, 0.0, 0.0	1445 Collect LB25_7-8
	R3a (0-9"): very soft black organic CLAY (wet)	8–12	R3	MACROCORE	33/48		0.0, 0.0	
+278.9	R3b (9-17"): very soft brown organic CLAY, trace silt (moist to wet)						0.0	
+277.9	R3c (17-28"): medium-dense olive silty fine SAND, trace coarse sand (wet)						0.0	
	R3d (28-31"): loose gray fine SAND, trace coarse sand (wet)						0.0, 0.0	
+276.6	R4a (0-9"): loose gray medium SAND, some fine sand (wet)	12–16	R4	MACROCORE	43/48		0.0, 0.0	
+276.1	R4b (9-15"): loose gray silty fine SAND (wet)						0.0	
	R4c (15-36"): loose gray coarse SAND, some medium sand, trace fine gravel (wet)						0.0, 0.0, 0.0	
+274.4	R4d (36-43"): stiff gray SILT (wet)	15					0.0	1450 Collect LB25_15-16 and SBDUP01_080818
	R5 (0-32"): very stiff gray SILT, trace clay (wet)	16–20	R5	MACROCORE	32/48		0.0, 0.0, 0.0, 0.0, 0.0	End of Boring at 20 feet bgs. Borehole backfilled with clean sand to grade.
+269.4		20						

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Log of Boring **LB26** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88 289.85
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 8/10/18 — Date Finished: 8/10/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 20 ft — Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples — Disturbed: 1 — Undisturbed: N/A — Core: N/A
Casing Diameter (in): N/A — Casing Depth (ft):	Water Level (ft.) — First: 6 — Completion: — 24 HR.: N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Thomas Seickel
Sampler: 2" Diameter 5-foot Long Steel DT	Field Engineer: Luke McCartney
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
289.9	(0-2"): topsoil	0					0.0	
289.4	R1 (2-22"): medium-dense brown fine SAND, trace coarse sand (moist)	0–5	R1	MACROCORE	22/60		0.0, 0.0, 0.0, 0.0	
		5–10	R2	MACROCORE	8/60			6: 1030 Collect LB26_6-7
280.9	R2a (0-7"): very soft gray CLAY, some silt, trace fine sand (wet) R2b (7-8"): very soft black CLAY (wet)	9					0.0, 0.0	Poor Recovery
		10–15	R3	MACROCORE	32/60		0.0	
277.9	R3a (0-6"): medium-dense gray fine SAND, trace medium sand, trace coarse sand (wet)	12					0.0, 0.0	
276.9	R3b (6-32"): medium-dense gray to olive silty fine SAND (wet)	13					0.0, 0.0, 0.0, 0.0	
274.9	R4 (0-57"): medium-dense well-sorted gray fine SAND (wet)	15–20	R4	MACROCORE	57/60		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	End of Boring at 20 feet bgs. Borehole backfilled with clean sand to grade.
269.9		20						

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Log of Boring **LB27** Sheet 1 of 1

Project: 41 Kensico Drive		Project No.: 190046301	
Location: Mount Kisco		Elevation and Datum: NAVD88	
Drilling Company: Eastern Environmental		Date Started: 5/2/19	Date Finished: 5/2/19
Drilling Equipment: Geoprobe 6610 DT		Completion Depth: 12 ft	Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe		Number of Samples — Disturbed: 2; Undisturbed: N/A; Core: N/A	
Casing Diameter (in): N/A	Casing Depth (ft):	Water Level (ft.) — First: 4; Completion: ; 24 HR.: N/A	
Casing Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A		Drilling Foreman: Patrick Slavin	
Sampler: 2" Diameter 4-foot Long Steel MC		Field Engineer: Luke McCartney	
Sampler Hammer: N/A; Weight (lbs): N/A; Drop (in): N/A			

Depth (ft)	Sample Description	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
0	4" concrete slab						
0–4	R1a (0-15"): dense brown to mottled brown fine SAND, some silt, trace clay, trace fine gravel (moist) [FILL] R1b (15-31"): medium dense grey fine SAND, some silt, trace fine gravel, with brick (moist) [FILL]	R1	MACROCORE	31/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	1320 Collect LB27_3.5-4.5 + DUP05
4–8	(FILL to ~6.5 ft) R2: medium dense grey to olive fine SAND, some silt, trace clay (moist to wet)	R2	MACROCORE	18/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.1	
8–12	R3: medium dense to dense brown fine SAND, some silt, trace clay (wet)	R3	MACROCORE	33/48		1.2, 3.4, 5.5, 7.2, 19.1, 22.0, 21.0	End of boring at 12 feet bgs. Borehole backfilled with clean sand to grade and capped with concrete.

Depth Scale: 0–20 ft

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Log of Boring **LB28** Sheet 1 of 1

Project: 41 Kensico Drive	Project No.: 190046301
Location: Mount Kisco	Elevation and Datum: NAVD88
Drilling Company: Eastern Environmental	Date Started: 5/2/19 ; Date Finished: 5/2/19
Drilling Equipment: Geoprobe 6610 DT	Completion Depth: 12 ft ; Rock Depth:
Size and Type of Bit: 2" Diameter Steel Macrocore Cutting Shoe	Number of Samples: Disturbed 3 ; Undisturbed N/A ; Core N/A
Casing Diameter (in): N/A ; Casing Depth (ft):	Water Level (ft.): First 3 ; Completion ; 24 HR. N/A
Casing Hammer: N/A ; Weight (lbs): N/A ; Drop (in): N/A	Drilling Foreman: Patrick Slavin
Sampler: 2" Diameter 4-foot Long Steel MC	Field Engineer: Luke McCartney
Sampler Hammer: N/A ; Weight (lbs): N/A ; Drop (in): N/A	

Depth (ft)	Sample Description	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
0–0.33	4" concrete slab						
0.33–4	R1: loose to medium dense brown to grey fine SAND, some silt, trace fine gravel, with brick (moist) [FILL]	R1	MACROCORE	35/48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	1235 Collect LB28_3-4 + MS/MSD
4–8	R2a (0-6"): loose brown to grey fine SAND, trace fine gravel, with brick, with concrete (moist) [FILL] R2b (6-40"): medium-dense to dense olive silty fine SAND (moist to wet)	R2	MACROCORE	40/48		0.0, 0.0, 0.1, 1.8, 2.1, 6.7, 7.0	
8–12	R3: medium-dense to dense olive silty fine SAND (wet)	R3	MACROCORE	21/48		8.5, 21.3, 31.5, 113.6	End of boring at 12 feet bgs. Borehole backfilled with clean sand to grade and capped with concrete.

Client:	AutoNation		***BORING ID:*** ***B-1***
Project Number:	60522492		
Site Location:	41 Kensico Drive, Mt Kisco, NY		
Drilling Method:	Geoprobe		Sheet: 1 of 1
Sample Type(s):	Continuous	**Elevation (ft):**	Monitoring Well Installed: No
Coordinates:			Screened Interval: N/A
Weather: *60 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 10/13/16	Depth of Boring: 15'
Drilling Contractor: SET		Finish Date: 10/13/16	Water Level: 6.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0–5	N/A	0-5	N/A	N/A	Hand Auger	Grass at surface Brown f-c SAND, some f-c Gravel, some Silt, brick fragments (FILL), dry, no odor	
5–10	S-1	5-10	15	N/A	Direct Push	Dark gray silty fine SAND (SP-SM), wet, no odor	
10–15	S-2	10-15	36	N/A	Direct Push	Grayish brown/gray SILT (ML), wet, no odor	
15–20						Bottom of boring @ 15', no refusal	

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

NOTES: Groundwater sample collected from temporary well for VOC/SVOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________ Date:______________

URS	**Client:** AutoNation		***BORING ID:*** ***B-2***
	Project Number: 60522492		
	Site Location: 41 Kensico Drive, Mt Kisco, NY		
	Drilling Method: Geoprobe		Sheet: 1 of 1
	Sample Type(s): Continuous	**Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *60 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 10/13/16	Depth of Boring: 15'
Drilling Contractor: SET		Finish Date: 10/13/16	Water Level: 7.0'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5	N/A	0-5	N/A	N/A	Hand Auger	Grass at surface Brown f-c SAND, some f-c Gravel, some Silt, brick fragments, wood fragments (FILL), dry, no odor	
5-10	S-1	5-10	30	N/A	Direct Push	Black organic CLAY (OL), roots, wet, no odor Gray silty fine SAND (SP-SM), trace coarse Sand, wet, no odor	
10-15	S-2	10-15	48	N/A	Direct Push	Gray SILT (ML), wet, no odor	
15-20						Bottom of boring @ 15', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC/SVOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________________ Date:__________________

URS	**Client:**	AutoNation	***BORING ID:*** ***B-3***
	Project Number:	60522492	
	Site Location:	41 Kensico Drive, Mt Kisco, NY	
	Drilling Method:	Geoprobe	Sheet: 1 of 1
	Sample Type(s):	Continuous **Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*		Logged By: SW / Start Date: 11/14/16	Depth of Boring: 7'
Drilling Contractor: SET		Finish Date: 11/14/16	Water Level: 5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0–5	N/A	0-5	N/A	0	Hand Auger	Grass at surface Brown f-c SAND, some f-c Gravel, some Silt, brick fragments, wood fragments, moist to wet, no odor (FILL)	B-3 (1-2) B-3 (4-5)
5–7	S-1	5-7	16	0.5	Direct Push		
7						Bottom of boring @ 7', no refusal	
8–20							

NOTES: Soil samples collected @ 1-2' and 4-5' for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse Checked by ____________________ Date:________________

URS

Client:	AutoNation		***BORING ID:*** ***B-4***
Project Number:	60522492		
Site Location:	41 Kensico Drive, Mt Kisco, NY		
Drilling Method:	Geoprobe		Sheet: 1 of 1
Sample Type(s):	Continuous	**Elevation (ft):**	Monitoring Well Installed: No
Coordinates:			Screened Interval: N/A

Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET		Finish Date: 11/14/16	Water Level: 3.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5 (1, 2, 3, 4, 5)	N/A	0-5	N/A	0	Hand Auger	Grass at surface Gray SILT, some f-c Sand, little f-c Gravel, brick fragments, concrete fragments, coal fragments, moist, no odor (FILL)	
5-10 (6, 7, 8, 9, 10)	S-1	5-10	36	0.3	Direct Push	Dark brown/black organic SILT, wood fragments, roots, wet, no odor (OL) Gray interbedded SILT and fine SAND, little f-c Gravel, wet, no odor (ML-SP)	
10-12 (11, 12)	S-2	10-12	18	0	Direct Push		
12-20 (13, 14, 15, 16, 17, 18, 19, 20)						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse Checked by ___________________________ Date:__________________

URS

Client:	AutoNation		***BORING ID:*** ***B-5***
Project Number:	60522492		
Site Location:	41 Kensico Drive, Mt Kisco, NY		
Drilling Method:	Geoprobe		Sheet: 1 of 1
Sample Type(s):	Continuous	**Elevation (ft):**	Monitoring Well Installed: No
Coordinates:			Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET		Finish Date: 11/14/16	Water Level: 3'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-1						Grass at surface	
1-5	N/A	0-5	N/A	0	Hand Auger	Gray SILT, some f-c Sand, little f-c Gravel, brick fragments, concrete fragments, coal fragments, moist, no odor (FILL)	
5-7	S-1	5-10	40	0.2	Direct Push	Black organic SILT, wood fragments, roots, wet, no odor (OL)	
7-9						Dark brown SILT, little fine Sand, organics, wet, no odor (ML)	
9-12	S-2	10-12	18	0	Direct Push	Gray silty fine SAND, little f-c Gravel, wet, no odor (SP-SM)	
12						Bottom of boring @ 12', no refusal	
13-20							

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________ Date:______________

URS

Client:	AutoNation	BORING ID: **B-6**
Project Number:	60522492	
Site Location:	41 Kensico Drive, Mt Kisco, NY	
Drilling Method:	Geoprobe	Sheet: 1 of 1
Sample Type(s):	Continuous — Elevation (ft):	Monitoring Well Installed: No
Coordinates:		Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW — Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET	Finish Date: 11/14/16	Water Level: 3.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5	N/A	0-5	N/A	0	Hand Auger	Asphalt at surface Gray SILT, little fine Sand, moist to wet, no odor (FILL)	
5-10	S-1	5-10	36	0.2	Direct Push	Black organic SILT, roots, wet, no odor (OL) Gray/brown fine SAND, some Silt, some f-c Gravel, wet, no odor (SP-SM)	
10-12	S-2	10-12	24	0	Direct Push	Brown grading to gray SILT, wet, no odor (ML)	
12-20						Bottom of boring @ 12', no refusal	

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ___________________________ Date:___________________

URS	**Client:** AutoNation		***BORING ID:*** ***B-7***
	Project Number: 60522492		
	Site Location: 41 Kensico Drive, Mt Kisco, NY		
	Drilling Method: Geoprobe		Sheet: 1 of 1
	Sample Type(s): Continuous	**Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET		Finish Date: 11/14/16	Water Level: 6'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0–5 (1, 2, 3, 4, 5)	N/A	0-5	N/A	0	Hand Auger	Grass at surface Gray SILT, some f-c SAND, some f-c Gravel, brick fragments, wood fragments, moist to wet, no odor (FILL)	
5–10 (6, 7, 8, 9, 10)	S-1	5-10	30	0	Direct Push	Dark brown SILT, organics, moist to wet, no odor (ML) Black organic SILT, roots, wet, no odor (OL)	
10–12 (11, 12)	S-2	10-12	24	0	Direct Push	Dark brown SILT, organics, wet, no odor (ML) Gray SILT, wet, no odor (ML)	
13–20 (13, 14, 15, 16, 17, 18, 19, 20)						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________________ Date:___________________

URS	**Client:** AutoNation	***BORING ID:*** ***B-8***
	Project Number: 60522492	
	Site Location: 41 Kensico Drive, Mt Kisco, NY	
	Drilling Method: Geoprobe	Sheet: 1 of 1
	Sample Type(s): Continuous **Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:	Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW / Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET	Finish Date: 11/14/16	Water Level: 6.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5 (1, 2, 3, 4, 5)	N/A	0-5	N/A	0	Hand Auger	Grass at surface Gray SILT, some f-c SAND, some f-c Gravel, brick fragments, wood fragments, moist to wet, no odor (FILL)	
5-10 (6, 7, 8, 9, 10)	S-1	5-10	36	0.2	Direct Push	Dark gray SILT, organics, wet, no odor (ML) Black organic SILT, roots, wet, no odor (OL) Gray SILT, wet, no odor (ML)	
10-12 (11, 12)	S-2	10-12	24	0	Direct Push		
13-20 (13, 14, 15, 16, 17, 18, 19, 20)						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse Checked by ___________________________ Date:__________________

URS

Client:	AutoNation		***BORING ID:*** ***B-9***
Project Number:	60522492		
Site Location:	41 Kensico Drive, Mt Kisco, NY		
Drilling Method:	Geoprobe		Sheet: 1 of 1
Sample Type(s):	Continuous	**Elevation (ft):**	Monitoring Well Installed: No
Coordinates:			Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW	Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET		Finish Date: 11/14/16	Water Level: 4.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5 (1, 2, 3, 4, 5)	N/A	0-5	N/A	0	Hand Auger	Grass at surface Gray SILT, some f-c SAND, some f-c Gravel, brick fragments, wood fragments, moist to wet, no odor (ML-SM)	
5-10 (6, 7, 8, 9, 10)	S-1	5-10	36	0.2	Direct Push	Gray SILT, wet, no odor (ML)	
10-12 (11, 12)	S-2	10-12	24	0	Direct Push		
13-20 (13, 14, 15, 16, 17, 18, 19, 20)						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ___________________________ Date:___________________

URS	**Client:** AutoNation	***BORING ID:* B-10**
	Project Number: 60522492	
	Site Location: 41 Kensico Drive, Mt Kisco, NY	
	Drilling Method: Geoprobe	Sheet: 1 of 1
	Sample Type(s): Continuous **Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:	Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW; Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET	Finish Date: 11/14/16	Water Level: 4.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5 (1, 2, 3, 4, 5)	N/A	0-5	N/A	0	Hand Auger	Asphalt at surface Brown SILT, some fine Sand, little F-C Gravel, moist, no odor (FILL)	
5-10 (6, 7, 8, 9, 10)	S-1	5-10	36	0	Direct Push	Brown SILT, wet, no odor (ML)	
10-12 (11, 12)	S-2	10-12	24	0	Direct Push		
13, 14, 15, 16, 17, 18, 19, 20						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________________ Date:___________________

URS	**Client:** AutoNation **Project Number:** 60522492 **Site Location:** 41 Kensico Drive, Mt Kisco, NY **Drilling Method:** Geoprobe **Sample Type(s):** Continuous **Elevation (ft):** **Coordinates:**	***BORING ID:* B-11** Sheet: 1 of 1 Monitoring Well Installed: No Screened Interval: N/A
Weather: *50 Degrees Fahrenheit, Sun*	Logged By: SW / Start Date: 11/14/16	Depth of Boring: 12'
Drilling Contractor: SET	Finish Date: 11/14/16	Water Level: 4.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
0-5	N/A	0-5	N/A	0	Hand Auger	Grass at surface Brown fine SAND, some Silt, little f-c Gravel, moist to wet, no odor (FILL)	
5-10	S-1	5-10	32	0	Direct Push	Gray SILT, wet, no odor (ML) Black organic SILT, organics, large root @7', wet, no odor (OL) Gray fine SAND, some Silt, little f-c Gravel, wet, no odor (SP-SM)	
10-12	S-2	10-12	16	0	Direct Push	Gray fine SAND, some Silt, some f-c Gravel, wet, no odor	
12-20						Bottom of boring @ 12', no refusal	

NOTES: Groundwater sample collected from temporary well for VOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse   Checked by ____________   Date:__________

AECOM	**Client:**	AutoNation	***BORING ID:*** ***B-1 D***
	Project Number:	60536364	
	Site Location:	41 Kensico Drive, Mt Kisco, NY	
	Drilling Method:	Geoprobe	Sheet: 1 of 3
	Sample Type(s):	Continuous **Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *40 Degrees Fahrenheit, Fog / Rain*	Logged By: SW	Start Date: 3/9/17	Depth of Boring: 50'
Drilling Contractor: SET		Finish Date: 3/9/17	Water Level: 6.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
1–5	N/A	0-5	N/A	N/A	Hand Auger	Grass at surface Gray SILT (ML), medium density, wet, no oder Brown f-c SAND, some f-c Gravel, some Silt, brick fragments (FILL), dry, no odor	
6–10	S-1	5-10	15	N/A	Direct Push	Dark gray silty fine SAND (SP-SM), wet, no odor	
11–15	S-2	10-15	36	N/A	Direct Push	Grayish brown/gray SILT (ML), wet, no odor	
16–20			60			Gray SILT (ML), medium density. Wet, no odor	

NOTES: Groundwater sample collected from temporary well for VOC/SVOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ______________________________ Date:____________________

AECOM	**Client:**	AutoNation	***BORING ID:*** ***B-1 D***
	Project Number:	60536364	
	Site Location:	41 Kensico Drive, Mt Kisco, NY	
	Drilling Method:	Geoprobe	Sheet: 2 3
	Sample Type(s):	Continuous **Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *40 Degrees Fahrenheit, Fog / Rain*	Logged By: SW	Start Date: 3/9/17	Depth of Boring: 50'
Drilling Contractor: SET		Finish Date: 3/9/17	Water Level: 6.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
21–25			48			Gray SILT (ML), medium density, wet, no odor	
26–30			48			Gray SILT (ML), medium density, wet, no odor	**B-1D (30')**
31–35			60			Gray SILT (ML), medium density, wet, no odor	
36–40			60			Gray SILT (ML), medium density, wet, no odor	

NOTES: Groundwater sample collected from temporary well for VOC/SVOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________________ Date:__________________

	Client: AutoNation		**BORING ID:** ***B-1 D***
	Project Number: 60536364		
	Site Location: 41 Kensico Drive, Mt Kisco, NY		
	Drilling Method: Geoprobe		Sheet: 3 3
	Sample Type(s): Continuous	**Elevation (ft):**	Monitoring Well Installed: No
	Coordinates:		Screened Interval: N/A
Weather: *40 Degrees Fahrenheit, Fog / Rain*	Logged By: SW	Start Date: 3/9/17	Depth of Boring: 50'
Drilling Contractor: SET		Finish Date: 3/9/17	Water Level: 6.5'

Depth (ft)	Sample	Sample Depth (ft)	Recovery	Headspace (ppm)	Blow count/ Direct Push	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, sorting, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID (Depth)
41–45			60			Gray SILT (ML), medium density, wet, no odor	
46–50			60			Gray SILT (ML), medium density, wet, no odor	**B-1 D (50')**
						Bottom of boring @ 50', no refusal; however, silt was becoming denser towards end of boring	

NOTES: Groundwater sample collected from temporary well for VOC/SVOC analysis

Date/Time	Depth to groundwater while drilling

f-fine, m-medium, c-coarse

Checked by ____________________ Date:______________

APPENDIX D

WELL CONSTRUCTION LOGS

WELL CONSTRUCTION SUMMARY

Well No. LMW01D

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/9/2018 **DATE FINISHED** 8/9/2018
DRILLING EQUIPMENT Geoprobe® 7822DT	**DRILLER** Thomas Seickel
SIZE AND TYPE OF BIT 4' Macrocore with Bullet Cutter Head	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 56 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC sump was installed between 44-54' and 54-56' with 2-inch solid PVC pipe to grade. #2 sand was backfilled around the screen and sump to 43', bentonite pellets were backfilled between 41 to 43; and the remaining length of borehole was filled with grout slurry to grade. The well head was completed in a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. A total of 130 gallons of water were pumped into 55-gallon drums as containment for disposal.

TYPE OF CASING	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**
PVC Sched. 40	2"	Grout Slurry
TYPE OF SCREEN	**DIAMETER**	**TYPE OF SEAL MATERIAL**
PVC Sched. 40	2"	Fast-Release Bentonite Pellets
BOREHOLE DIAMETER		**TYPE OF FILTER MATERIAL**
		#2 sand

	ELEVATION	**DEPTH (ft)**
TOP OF CASING	290.05	0
TOP OF SEAL	249.05	41
TOP OF FILTER	247.05	43
TOP OF SCREEN	246.05	44
BOTTOM OF WELL	234.05	56

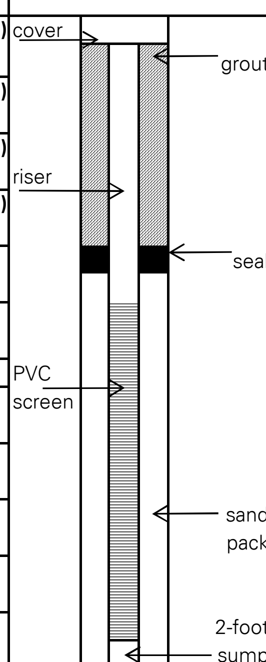
SCREEN LENGTH 10'

SLOT SIZE 20-Slot

GROUNDWATER ELEVATIONS

ELEVATION	**DATE**	**DEPTH TO WATER**
288.21	9/5/2018	1.84

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	**DEPTH (FT) bgs**
See LB01 Soil Boring Log for Details	0'
	41'
	43'
	44'
	54'
	56'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW08S

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/8/2018 — **DATE FINISHED** 8/8/2018
DRILLING EQUIPMENT Geoprobe® 7822DT	**DRILLER** Thomas Seickel
SIZE AND TYPE OF BIT 4-1/4" HSA with Bullet Cutter Head	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 15 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 2-15 ftbgs and riser to grade. #2 sand was backfilled around the screen to 1.5 feet bgs, bentonite pellets were backfilled between 0.5 to1.5 ftbgs and the remaining length of borehole was backfilled with #2 sand. The wellhead was completed with a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and development the well using a submersible whale pump. A total of 50 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING PVC Sched. 40	**DIAMETER** 2"	**TYPE OF BACKFILL MATERIAL** #2 Sand
TYPE OF SCREEN PVC Sched. 40	**DIAMETER** 2"	**TYPE OF SEAL MATERIAL** Fast-Release Bentonite Pellets
BOREHOLE DIAMETER		**TYPE OF FILTER MATERIAL** #2 sand

	ELEVATION	DEPTH (ft)
TOP OF CASING	286.97	0
TOP OF SEAL	286.47	0.5
TOP OF FILTER	285.47	1.5
TOP OF SCREEN	284.97	2
BOTTOM OF WELL	271.97	15

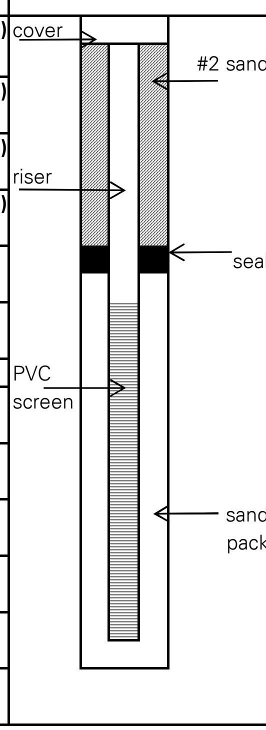
SCREEN LENGTH 13'

SLOT SIZE 20-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
284.82	9/5/2018	2.15

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	0'
See LB08 Soil Boring Log for Details	
	0.5'
	1.5'
	2'
	15'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW08D

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/8/2018 — **DATE FINISHED** 8/8/2018
DRILLING EQUIPMENT Geoprobe® 7822DT	**DRILLER** Thomas Seickel
SIZE AND TYPE OF BIT 4-1/4" HSA with Bullet Cutter Head/ 4" Steel Carbide Bit	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 17 ftbgs then advanced 4-inch steel casing to refusal at 48 ftbgs to complete monitoring well installation and construction. A 2-inch diameter pre-pack well screen was installed between 42'-47' with 2-inch solid PVC pipe to grade. During extraction of the casing the borehole collapsed to about 24 ftbgs, a 2-foot bentonite seal was placed between 22-24 ftbgs and the remainder of the borehole was filled with grout slurry.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and development the well using a submersible whale pump. A total of 70 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING PVC Sched. 40	**DIAMETER** 2"	**TYPE OF BACKFILL MATERIAL** #2 Sand
TYPE OF SCREEN PVC Sched. 40	**DIAMETER** 2"	**TYPE OF SEAL MATERIAL** Fast-Release Bentonite Pellets
BOREHOLE DIAMETER 6 and 4-inch		**TYPE OF FILTER MATERIAL** #2 sand

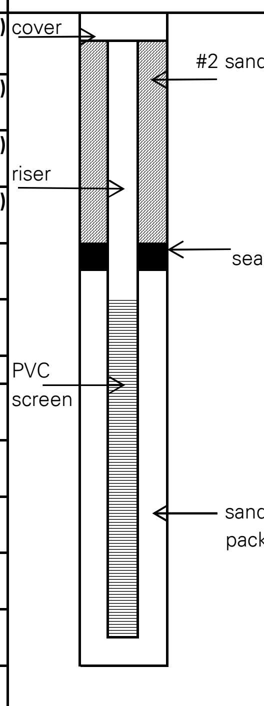
	ELEVATION	DEPTH (ft)
TOP OF CASING	286.69	0
TOP OF SEAL	264.69	22
TOP OF FILTER	244.69	42
TOP OF SCREEN	244.69	42
BOTTOM OF WELL	239.69	47

SCREEN LENGTH 5'

SLOT SIZE 20-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
286.64	9/5/2018	0.05

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	See LB08 Soil Boring Log for Details	0' 22' 42' 42' 47'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW11

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/13/2018 — **DATE FINISHED** 8/13/2018
DRILLING EQUIPMENT Geoprobe® 7822DT	**DRILLER** Sergio Magana
SIZE AND TYPE OF BIT 4-1/4" HSA with Bullet Cutter Head	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 24 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 4-24 ftbgs and riser to grade. #2 sand was backfilled between 3 to 24 ftbgs, bentonite pellets were backfilled between 1 to 3 ftbgs and the remaining length of the borehole was backfilled with #2 sand. The wellhead was completed in a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and development the well using a submersible whale pump. A total of 55 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**
PVC Sched. 40	2"	#2 Sand
TYPE OF SCREEN	**DIAMETER**	**TYPE OF SEAL MATERIAL**
PVC Sched. 40	2"	Fast-Release Bentonite Pellets
BOREHOLE DIAMETER		**TYPE OF FILTER MATERIAL**
6-inch		#2 sand

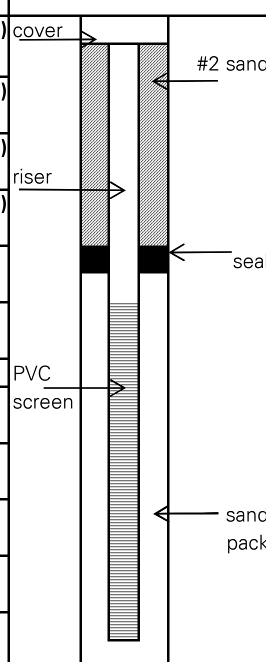
	ELEVATION	**DEPTH (ft)**
TOP OF CASING	290.62	0
TOP OF SEAL	289.62	1
TOP OF FILTER	286.62	3
TOP OF SCREEN	285.62	4
BOTTOM OF WELL	265.62	24

SCREEN LENGTH: 20'

SLOT SIZE: 20-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
287.69	9/5/2018	2.93

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	See LB11 Soil Boring Log for Details	0' 1' 3' 4' 24'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW12S/LMW12D

PROJECT	41 Kensico Drive	**PROJECT NO.**	190046301
LOCATION	Mount Kisco, New York	**ELEVATION AND DATUM**	N/A
DRILLING AGENCY	AARCO Environmental Services Corp.	**DATE STARTED** 8/20/2018	**DATE FINISHED** 8/20/2018
DRILLING EQUIPMENT	Geoprobe® 8410LC Sonic Drill Rig	**DRILLER**	Thomas Seickel
SIZE AND TYPE OF BIT	6-inch/4-inch diameter	**INSPECTOR**	Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 6-inch diameter by 5-foot long sections of steel casing through grade surface to support a borehole opening for installation of the MW12 well couplet. The casing was advanced to 24 feet bgs to install well screen within the interval of highest impact observed between 19 to 20 feet bgs. AARCO advanced 4-inch diameter by 5-foot long sections of steel casing through the 6-inch casing to the deep well design depth of 44 feet bgs, using a fresh water supply to prevent potential heaving of saturated sands below the groundwater table. The deep well was installed at 44 feet bgs and was constructed of 2-feet of Schedule 40 PVC (sump) set between 42 to 44 feet bgs, 5-feet of Schedule 40 PVC 0.01-slot screen set between 37 to 42 feet bgs, and about 37 feet of Schedule 40 PVC solid riser pipe. Time-release coated bentonite pellets were used to backfill the annulus around the deep well sump between 42 to 44 feet bgs. No. 1 filtration sand was used to backfill the annulus around and above the deep well screen between 35 to 37 feet bgs. Time-release coated bentonite pellets were used to backfill the annulus around the deep well casing between 24 to 35 feet bgs. The shallow well was installed at 24 feet bgs and was constructed of 2-feet of Schedule 40 PVC (sump) set between 22 to 24 feet bgs, 5-feet of Schedule 40 PVC 0.01-slot screen set between 17 to 22 feet bgs, and about 17 feet of Schedule 40 PVC solid riser pipe. Time-release coated bentonite pellets were used to backfill the annulus around the shallow well sump and deep well casing between 22 to 24 feet bgs. No. 1 filtration sand was used to backfill the annulus around and above the shallow well screen and deep well casing between 15 to 22 feet bgs. Time-release coated bentonite pellets were used to backfill the annulus around the shallow and deep well casing between 13 to 15 feet bgs. During well construction and placement of bentonite pellets and No. 1 sand in the borehole annulus the depths to each interval of material was tagged with weighted tape frequently to ensure proper depth placement. A 5% bentonite/grout slurry was used to backfill the borehole to about 1 foot bgs. The wells were capped with removable J-plugs and finished within a bolt-down flush-mounted watertight manhole cover set in concrete.

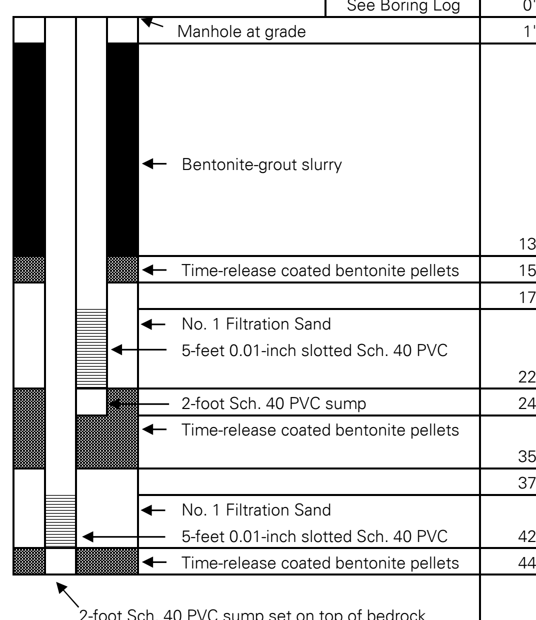
METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the wells with a surge block attached to a 1-inch PVC pipe and developed the wells using a submersible whale pump. A total of 50 gallons from MW12 and 40 gallons from MW12D were pumped into 55-gallon drums as containment for disposal.

MONITORING WELL NO.	**MW12D**		**MW12S**	
BOREHOLE DIAMETER	6-inch/4-inch		6-inch/4-inch	
TYPE OF CASING	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
TYPE OF SCREEN	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
SCREEN LENGTH/SLOT SI	**LENGTH (ft)**	**SLOT SIZE (in)**	**LENGTH (ft)**	**SLOT SIZE (in)**
	5	0.01	5	0.01
TYPE OF SUMP	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
TOP OF CASING	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	289.29	0	289.29	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	265.29	24	276.29	13
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	254.29	35	274.29	15
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	252.29	37	274.29	17
TOP OF SUMP	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	247.29	42	269.29	22
BOTTOM OF SUMP	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	245.29	44	267.29	24
BOTTOM OF WELL	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	245.29	44	267.29	24
TYPE OF BACKFILL MATEI	5% bentonite/grout slurry composed of: High-solids powdered bentonite/portland cement Type I-II			
TYPE OF SEAL MATERIAL	Time-release coated bentonite pellets			
TYPE OF FILTER MATERIA	No. 1 filtration sand: Superior quartz filtration media			

WELL CONSTRUCTION DIAGRAM

WELL DETAILS	**SUMMARY SOIL CLASSIFICATION**	**DEPTH (ft)**
	See Boring Log	0'



GROUNDWATER ELEVATIONS

	DATE	**ELEVATION**	**DEPTH TO WATER**
LMWS12	9/5/2018	286.71	2.58
LMW12D	9/5/2018	287.95	1.34

WELL CONSTRUCTION SUMMARY

Well No. LMW15

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/20/2018 **DATE FINISHED** 8/20/2018
DRILLING EQUIPMENT Geoprobe® 8410LC Sonic Drill Rig	**DRILLER** Thomas Seickel
SIZE AND TYPE OF BIT 4-inch Diameter Steel Carbide Bit	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-inch steel casing to 38 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC sump was installed between 31-36' and 36-38' with 2-inch solid PVC pipe to grade. #1 sand was backfilled between around the screen and sump to 29', bentonite pellets were backfilled between 27 to 29 feet, and the remaining length of the borehole was filled with grout to grade. The wellhead was completed in a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and development the well using a submersible whale pump. A total of 45 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING PVC Sched. 40	**DIAMETER** 2"	**TYPE OF BACKFILL MATERIAL** Grout Slurry
TYPE OF SCREEN PVC Sched. 40	**DIAMETER** 2"	**TYPE OF SEAL MATERIAL** Fast-Release Bentonite Pellets
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** #1 sand

	ELEVATION	**DEPTH (ft)**
TOP OF CASING	289.65	0
TOP OF SEAL	262.65	27
TOP OF FILTER	260.65	29
TOP OF SCREEN	258.65	31
BOTTOM OF WELL	251.65	38

SCREEN LENGTH

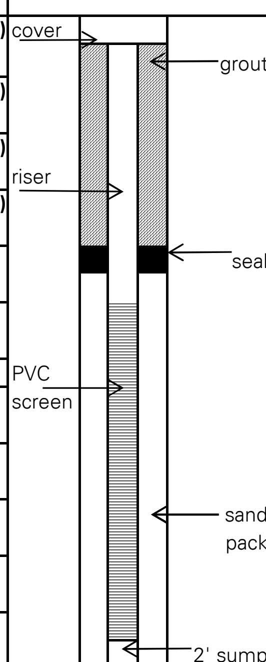
5' screen to 2' sump

SLOT SIZE

10-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
286.87	9/5/2018	2.78

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	See LB15 Soil Boring Log for Details	0' 27' 29' 31' 36' 38'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW19S

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/15/2018 / **DATE FINISHED** 8/15/2018
DRILLING EQUIPMENT Geoprobe® 6610DT	**DRILLER** Sergio Magana
SIZE AND TYPE OF BIT 4-1/4" HAS with Bullet Cutter Head	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 15 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 2-15 ftbgs and riser to grade. #2 sand was backfilled around the screen to 1.5 ftbgs, bentonite pellets were backfilled between 0.5 to 1.5 ftbgs, and the remaining length of borehole was backfilled with #2 sand. The wellhead was completed and a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. A total of 55 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**
PVC Sched. 40	2"	#2 sand
TYPE OF SCREEN	**DIAMETER**	**TYPE OF SEAL MATERIAL**
PVC Sched. 40	2"	Fast-Release Bentonite Pellets
BOREHOLE DIAMETER		**TYPE OF FILTER MATERIAL**
6-inch		#1 sand

	ELEVATION	**DEPTH (ft)**
TOP OF CASING	290.30	0
TOP OF SEAL	289.80	0.5
TOP OF FILTER	288.80	1.5
TOP OF SCREEN	288.30	2
BOTTOM OF WELL	275.30	15

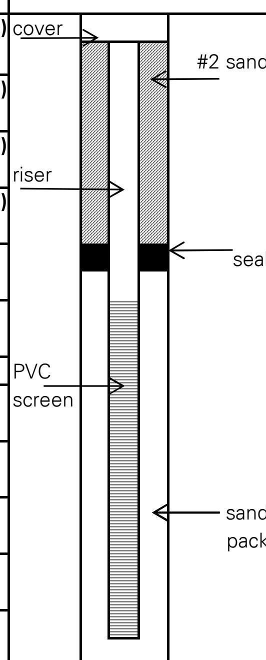
SCREEN LENGTH 13'

SLOT SIZE 20-Slot

GROUNDWATER ELEVATIONS

ELEVATION	**DATE**	**DEPTH TO WATER**
285.10	9/5/2018	5.20

WELL DETAILS



SUMMARY SOIL CLASSIFICATION: See LB19 Soil Boring Log for Details

DEPTH (FT) bgs: 0', 0.5', 1.5', 2', 15'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW19D

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY AARCO Environmental Services Corp.	**DATE STARTED** 8/15/2018 — **DATE FINISHED** 8/15/2018
DRILLING EQUIPMENT Geoprobe® 6610DT	**DRILLER** Sergio Magana
SIZE AND TYPE OF BIT 4-1/4" HAS with Bullet Cutter Head	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 4-1/4" augers to 39 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC pre-pack well screen fitted with a 2-inch diameter solid PVC sump was installed between 32-37' and 37 to 39' with 2-inch solid PVC pipe to grade. #2 sand was backfilled around the screen and sump to 30', bentonite pellets were between 28-30', and the remaining length of borehole was filled with grout slurry to grade. The wellhead was completed in a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. A total of 15 gallons of water were pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING PVC Sched. 40	**DIAMETER** 2"	**TYPE OF BACKFILL MATERIAL** Grout Slurry	
TYPE OF SCREEN PVC Sched. 40	**DIAMETER** 2" Pre=Pack	**TYPE OF SEAL MATERIAL** Fast-Release Bentonite Pellets	
BOREHOLE DIAMETER 6-inch		**TYPE OF FILTER MATERIAL** #1 sand	

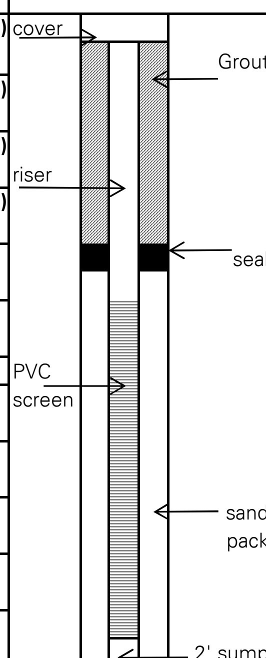
	ELEVATION	**DEPTH (ft)**
TOP OF CASING	290.15	0
TOP OF SEAL	262.15	28
TOP OF FILTER	260.15	30
TOP OF SCREEN	258.15	32
BOTTOM OF WELL	251.15	39

SCREEN LENGTH
5' Pre-Pack Screen with 2' Sump

SLOT SIZE
10-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
286.60	9/5/2018	3.55

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	See LB19 Soil Boring Log for Details	0' 28' 30' 32' 37' 39'

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. LMW20S/LMW20D

PROJECT	41 Kensico Drive	**PROJECT NO.**	190046301
LOCATION	Mount Kisco, New York	**ELEVATION AND DATUM**	N/A
DRILLING AGENCY	AARCO Environmental Services Corp.	**DATE STARTED**	8/20/2018 **DATE FINISHED** 8/20/2018
DRILLING EQUIPMENT	Geoprobe® 8410LC Sonic Drill Rig	**DRILLER**	Thomas Seickel
SIZE AND TYPE OF BIT	6-inch/4-inch diameter	**INSPECTOR**	Luke McCartney

METHOD OF INSTALLATION

AARCO advanced 6-inch diameter by 5-foot long sections of steel casing through grade surface to support a borehole opening for installation of the MW20 well couplet. The casing was advanced to 37 feet bgs to install well screen within the interval of highest impact observed between 32.5 to 33.5 feet bgs. AARCO advanced 4-inch diameter by 5-foot long sections of steel casing through the 6-inch casing to the deep well design depth of 49 feet bgs set on top of bedrock, using a fresh water supply to prevent potential heaving of saturated sands below the groundwater table. The deep well was installed at 49 feet bgs and was constructed of 2-feet of Schedule 40 PVC (sump) set between 47 to 49 feet bgs, 5-feet of Schedule 40 PVC 0.01-slot screen set between 42 to 47 feet bgs, and about 42 feet of Schedule 40 PVC solid riser pipe. Time-release coated bentonite pellets were used to backfill the annulus around the deep well sump between 47 to 49 feet bgs. No. 1 filtration sand was used to backfill the annulus around and above the deep well screen between 41 to 47 feet bgs. Time-release coated bentonite pellets were used to backfill the annulus around the deep well casing between 37 to 41 feet bgs. The shallow well was installed at 37 feet bgs and was constructed of 2-feet of Schedule 40 PVC (sump) set between 35 to 37 feet bgs, 5 feet of Schedule 40 PVC 0.01-slot screen set between 30 to 35 feet bgs, and about 30 feet of Schedule 40 PVC solid riser pipe. Time-release coated bentonite pellets were used to backfill the annulus around the shallow well sump and deep well casing between 35 to 37 feet bgs. No. 1 filtration sand was used to backfill the annulus around and above the shallow well screen and deep well casing between 28 to 35 feet bgs. Time-release coated bentonite pellets were used to backfill the annulus around the shallow and deep well casing between 26 to 28 feet bgs. During well construction and placement of bentonite pellets and No. 1 sand in the borehole annulus the depths to each interval of material was tagged with weighted tape frequently to ensure proper depth placement. A 5% bentonite/grout slurry was used to backfill the borehole to about 1 foot bgs. The wells were capped with removable J-plugs and finished within a bolt-down flush-mounted watertight manhole cover set in concrete.

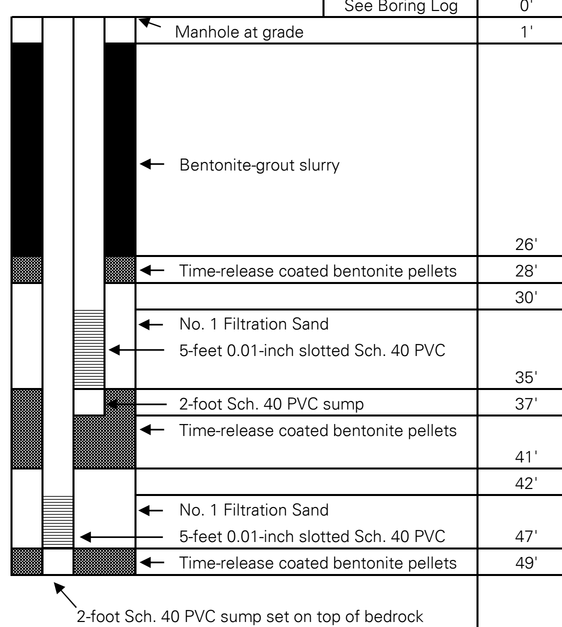
METHOD OF WELL DEVELOPMENT

AARCO/Langan surged the wells with a surge block attached to a 1-inch PVC pipe and developed the wells using a submersible whale pump. A total of 25 gallons and 25 gallons were pumped from MW20 and MW20D, respectively. The development water was pumped into a 55-gallon drum as containment for disposal.

MONITORING WELL NO.	**MW20D**		**MW20**	
BOREHOLE DIAMETER	6-inch/4-inch		6-inch/4-inch	
TYPE OF CASING	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
TYPE OF SCREEN	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
SCREEN LENGTH/SLOT S	**LENGTH (ft)**	**SLOT SIZE (in)**	**LENGTH (ft)**	**SLOT SIZE (in)**
	5	0.01	5	0.01
TYPE OF SUMP	**TYPE**	**DIAMETER (in**	**TYPE**	**DIAMETER (in)**
	Schedule 40	2	Schedule 40	2
TOP OF CASING	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	289.72	0	289.72	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	252.72	37	263.72	26
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	248.72	41	261.72	28
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	247.72	42	259.72	30
TOP OF SUMP	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	242.72	47	254.72	35
BOTTOM OF SUMP	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	240.72	49	252.72	37
BOTTOM OF WELL	**ELEVATION**	**DEPTH (ft)**	**ELEVATION**	**DEPTH (ft)**
	240.72	49	252.72	37
TYPE OF BACKFILL MATEI	5% bentonite/grout slurry composed of: High-solids powdered bentonite/portland cement Type I-II			
TYPE OF SEAL MATERIAL	Time-release coated bentonite pellets			
TYPE OF FILTER MATERIA	No. 1 filtration sand: Superior quartz filtration media			

WELL CONSTRUCTION DIAGRAM

WELL DETAILS	**SUMMARY SOIL CLASSIFICATION**	**DEPTH (ft)**
	See Boring Log	0'



GROUNDWATER ELEVATIONS

MW-14	**DATE**	**ELEVATION**	**DEPTH TO WATER**
MW-14D	**DATE**	**ELEVATION**	**DEPTH TO WATER**

WELL CONSTRUCTION SUMMARY

Well No. GWG01

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY Eastern Environmental Solutions, Inc.	**DATE STARTED** 5/2/2019 — **DATE FINISHED** 5/2/2019
DRILLING EQUIPMENT Geoprobe® 6610DT	**DRILLER** Patrick Slavin
SIZE AND TYPE OF BIT 4"	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

Eastern advanced 4" augers to 15 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 2-15 ft bgs and riser to grade. #0 sand was backfilled around the screen to 1.5 ftbgs, bentonite pellets were backfilled between 1 to 1.5 ftbgs. The wellhead was completed and a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

Eastern/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. Water was pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING	PVC Sched. 40	**DIAMETER**	4"
TYPE OF SCREEN	PVC Sched. 40	**DIAMETER**	2"
BOREHOLE DIAMETER	4-inch		
TYPE OF BACKFILL MATERIAL	#0 sand		
TYPE OF SEAL MATERIAL	Fast-Release Bentonite Pellets		
TYPE OF FILTER MATERIAL	#0 sand		

	ELEVATION	DEPTH (ft)
TOP OF CASING	289.29	0.00
TOP OF SEAL	288.29	1.0
TOP OF FILTER	287.79	1.5
TOP OF SCREEN	287.29	2
BOTTOM OF WELL	274.29	15

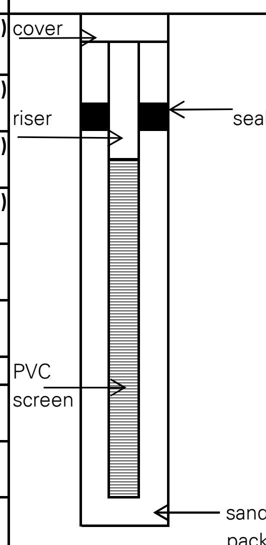
SCREEN LENGTH 13'

SLOT SIZE 10-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
285.63	5/9/2019	3.66

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	0'
NA	1.0
	1.5
	2.0
	15.0

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. GWG02

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY Eastern Environmental Solutions, Inc.	**DATE STARTED** 5/2/2019 **DATE FINISHED** 5/2/2019
DRILLING EQUIPMENT Geoprobe® 6610DT	**DRILLER** Patrick Slavin
SIZE AND TYPE OF BIT 4"	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

Eastern advanced 4" augers to 15 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 2-15 ft bgs and riser to grade. #0 sand was backfilled around the screen to 1.5 ftbgs, bentonite pellets were backfilled between 1 to 1.5 ftbgs. The wellhead was completed and a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

Eastern/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. Water was pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING PVC Sched. 40	**DIAMETER** 4"	**TYPE OF BACKFILL MATERIAL** #0 sand
TYPE OF SCREEN PVC Sched. 40	**DIAMETER** 2"	**TYPE OF SEAL MATERIAL** Fast-Release Bentonite Pellets
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** #0 sand

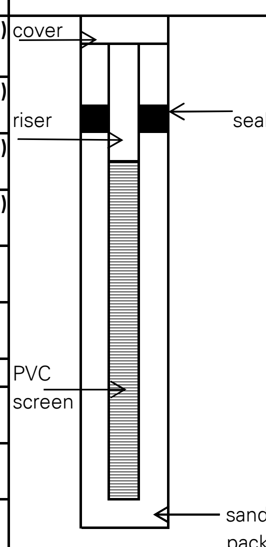
	ELEVATION	DEPTH (ft)
TOP OF CASING	289.14	0.00
TOP OF SEAL	288.14	1.0
TOP OF FILTER	287.64	1.5
TOP OF SCREEN	287.14	2
BOTTOM OF WELL	274.14	15

SCREEN LENGTH
13'

SLOT SIZE
10-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
285.61	5/9/2019	3.53

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	NA	0' 1.0 1.5 2.0 15.0

LANGAN Engineering and Environmental Services, Inc.

WELL CONSTRUCTION SUMMARY

Well No. GWG03

PROJECT 41 Kensico Drive	**PROJECT NO.** 190046301
LOCATION Mount Kisco, New York	**ELEVATION AND DATUM** N/A
DRILLING AGENCY Eastern Environmental Solutions, Inc.	**DATE STARTED** 5/2/2019 / **DATE FINISHED** 5/2/2019
DRILLING EQUIPMENT Geoprobe® 6610DT	**DRILLER** Patrick Slavin
SIZE AND TYPE OF BIT 4"	**INSPECTOR** Luke McCartney

METHOD OF INSTALLATION

Eastern advanced 4" augers to 12 ftbgs to complete monitoring well installation and construction. A 2-inch diameter PVC well screen fitted with a 2-inch diameter solid PVC riser pipe was installed with screen set from 2-12 ft bgs and riser to grade. #0 sand was backfilled around the screen to 1.5 ftbgs, bentonite pellets were backfilled between 1 to 1.5 ftbgs. The wellhead was completed with a watertight manhole at grade.

METHOD OF WELL DEVELOPMENT

Eastern/Langan surged the well with a surge block attached to a 1-inch PVC pipe and developed the well using a submersible whale pump. Water was pumped into a 55-gallon drum as containment for disposal.

TYPE OF CASING	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**
PVC Sched. 40	4"	#0 sand
TYPE OF SCREEN	**DIAMETER**	**TYPE OF SEAL MATERIAL**
PVC Sched. 40	2"	Fast-Release Bentonite Pellets
BOREHOLE DIAMETER		**TYPE OF FILTER MATERIAL**
4-inch		#0 sand

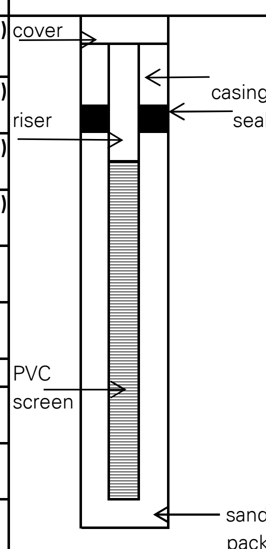
	ELEVATION	**DEPTH (ft)**
TOP OF CASING	289.67	0.00
TOP OF SEAL	288.67	1.0
TOP OF FILTER	288.17	1.5
TOP OF SCREEN	287.67	2
BOTTOM OF WELL	277.67	12

SCREEN LENGTH 10'

SLOT SIZE 10-Slot

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
285.87	5/9/2019	3.80

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT) bgs
	NA	0'
		0.5
		1.0
		1.5
		2.0
		12.0

LANGAN Engineering and Environmental Services, Inc.

APPENDIX E

GROUNDWATER SAMPLING LOGS

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	MW-1	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	MW-1_090518
Project Number:	170046301	Well Depth:	12	Pine Number:		Background PID (ppm):	0		GWDUP01_090518
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	12.8		GW_MS/MSD
Sampling Personnel:	L.McCartney	Well Screen	2	Pine Number:		Pump Intake Depth:	11.00	Sample Date:	9/5/2018
		Interval:	12	Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	-	Sample Time:	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
10:50	19.86	6.90	65	0.447	26.3	7.06	-	-	0	slight brown	**N/A**
10:55	19.09	6.95	61	0.436	5.30	3.54	-	0.9	4.5	Clear	**N/A**
11:00	19.67	6.92	48	0.458	0.20	2.48	-	0.65	6.5	**Clear**	**N**
11:05	19.79	6.96	39	0.438	0.00	1.82	-	0.6	9	**Clear**	**N**
11:10	19.92	6.96	35	0.438	0.40	1.45	-	0.54	10.75	**Clear**	**N**
11:15	19.70	6.96	30	0.442	0.00	0.86	-	0.53	13.25	Clear	**N**
11:20	19.68	6.96	27	0.443	0.00	0.58	-	0.5	15	Clear	**N**
11:25	19.80	6.97	23	0.438	0.0	0.17	-	0.49	17	**Clear**	**N**
11:30	19.64	6.98	21	0.436	0.0	0.00	-	0.48	19	**Clear**	**N**
11:35	19.81	6.97	20	0.441	0.3	0.00	-	0.46	20.5	**Clear**	**Y**
11:40	19.94	6.98	18	0.437	0.0	0.00	-	0.45	22.5	Clear	**Y**
11:45	19.90	6.99	15	0.435	0.0	0.00		0.45	25	Clear	**Y**
11:50											**N**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information			Sampling Conditions			Sampling Information	
Project Name:	**41 Kensico Dr**	**Well No:**	MW-2	**Water Quality Device Model:**		**Horiba U-52**	**Weather:**		80s clear	**Sample(s):**	MW-2_090518
Project Number:	**170046301**	**Well Depth:**	11.8	**Pine Number:**			**Background PID (ppm):**		0		
Site Location:	**Mt Kisco, NY**	**Well Diameter:**	2-INCH	**Pump Make and Model:**		**Perri Pump**	**PID Beneath Inner Cap (ppm):**		0.5		
Sampling	**L.McCartney**	**Well Screen**	2	**Pine Number:**			**Pump Intake Depth:**			**Sample Date:**	9/5/2018
Personnel:		**Interval:**	12	**Tubing Diameter:**		**3/8"ID**	**Depth to Water Before Purge:**			**Sample Time:**	1345

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:40	18.24	7.63	68	0.593	80.8	1.70	-	-	0.5		**N/A**
12:45	15.02	7.70	56	0.663	15.30	0.33	-		2		**N/A**
12:50	14.72	7.66	38	0.665	27.00	0.00	-	0.5	4		**N**
12:55	14.78	7.64	21	0.669	0.00	0.00	-	0.5	6		**N**
13:00	14.65	7.64	9	0.669	0.00	0.00	-	0.5	8		**N**
13:05	14.85	7.63	-2	0.671	0.00	0.57	-	0.5	10		**N**
13:10	14.86	7.64	-8	0.669	0.00	0.24	-	0.5	12		**N**
13:15	14.72	7.65	-16	0.674	0.00	0.00	-	0.50	14		**N**
13:20	14.55	7.65	-21	0.672	0.00	0.00	-	0.50	16		**N**
13:25	14.54	7.66	-26	0.669	0.00	0.00	-	0.50	18		**Y**
13:30	14.76	7.65	-36	0.672	0.00	0.00	-		20		**N**
13:35	14.59	7.66	-37	0.674	0.00	0.00	-		22		**N**
13:40	14.43	7.66	-43	0.673	0.00	0.00	-		24		**Y**
13:45	14.32	**7.66**	-45	**0.675**	0.00	0.00	-		26		**Y**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	MW-3	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	MW-3_090518
Project Number:	170046301	Well Depth:	12.7	Pine Number:		Background PID (ppm):	0.2		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	0.7		
Sampling Personnel:	L.McCartney	Well Screen	2	Pine Number:		Pump Intake Depth:		Sample Date:	9/5/2018
		Interval:	12	Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	4.56	Sample Time:	1140

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
10:55	18.09	6.70	-63	0.358	198.0	0.00	-	-			N/A
11:00	17.30	6.73	-82	0.342	15.80	0.00	5.80		3		N/A
11:05	17.28	6.66	-83	0.338	9.10	0.00	5.80	0.5	4.5		N
11:10	17.21	6.61	-81	0.336	5.40	0.00	5.80	0.5	6		N
11:15	17.16	6.58	-80	0.334	1.60	0.00	5.80	0.5	7.5		N
11:20	17.11	6.56	-79	0.333	0.00	0.00	5.80	0.5	9		N
11:25	17.01	6.52	-77	0.332	0.00	0.00	5.80	0.5	10.5		Y
11:30	17.05	6.50	-76	0.331	0.00	0.00	5.80	0.50	12		Y
11:35	16.92	6.47	-74	0.331	0.00	0.00	5.80	0.50	13.5		Y
11:40	17.04	6.44	-72	0.330	0.00	0.00	5.80	0.50	15		Y
											N
											N
											N
											N
											N
											N
											N
											N
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											N
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											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	MW-4	Water Quality Device Model:	Horiba U-52	Weather:	90s Hazy	Sample(s):	MW-4_090618
Project Number:	170046301	Well Depth:	12	Pine Number:		Background PID (ppm):	0.4		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	3.9		
Sampling Personnel:	L.McCartney	Well Screen	2	Pine Number:		Pump Intake Depth:	8.00	Sample Date:	9/6/2018
		Interval:	12	Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	-	Sample Time:	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
16:30	25.82	6.72	-81	0.763	0.0	0.00					N/A
16:35	24.76	6.72	-88	0.772	0.00	0.00	3.45				N/A
16:40	24.81	6.72	-89	0.775	0.00	0.00					N
16:45	24.75	6.72	-89	0.772	0.00	0.00					Y
16:50											N
16:55											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	**41 Kensico Dr**	**Well No:**	MW-5	**Water Quality Device Model:**	**Horiba U-52**	**Weather:**	80's Cloudy	**Sample(s):**	MW-5_090718
Project Number:	**170046301**	**Well Depth:**	12	**Pine Number:**		**Background PID (ppm):**			
Site Location:	**Mt Kisco, NY**	**Well Diameter:**	2-INCH	**Pump Make and Model:**	**Perri Pump**	**PID Beneath Inner Cap (ppm):**			
Sampling Personnel:	**L.McCartney**	**Well Screen Interval:**	2 12	**Pine Number:**		**Pump Intake Depth:**	9.00	**Sample Date:**	9/7/2018
				Tubing Diameter:	**3/8"ID**	**Depth to Water Before Purge:**	-	**Sample Time:**	

STABILIZATION = 3 successive readings within limits

TIME	TEMP ^{o}Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:10	19.61	7.68	66	0.463	161.0	0.96	-		0	Clear	**N/A**
12:15	18.51	7.66	63	0.457	132.00	0.00	-		2	Clear	**N/A**
12:20	19.23	7.51	69	0.457	2.70	0.00	-		4.5	Clear	**N**
12:25	18.90	7.52	73	0.459	1.00	0.00	-		7	Clear	**N**
12:30	18.68	7.52	73	0.459	2.20	0.00	-		9.5	Clear	**Y**
12:35											**N**
12:40											**N**
											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	MW-6	Water Quality Device Model:	Horiba U-52	Weather:	80's Cloudy	Sample(s):	MW-6_090718
Project Number:	170046301	Well Depth:	12	Pine Number:		Background PID (ppm):			
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):			
Sampling Personnel:	L.McCartney	Well Screen	2	Pine Number:		Pump Intake Depth:	10.00	Sample Date:	9/7/2018
		Interval:	12	Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	-	Sample Time:	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:47	19.66	6.83	-19	0.620	26.7	0.00	-		0	Clear	N/A
12:52	20.37	6.79	-41	0.773	2.60	0.00	-		2.5	Clear	N/A
12:57	20.25	6.79	-49	0.809	0.00	0.00	-		4.5	Clear	N
13:02	19.89	6.80	-53	0.796	0.00	0.00	-		6.5	Clear	N
13:07	19.81	6.80	-54	0.791	0.00	0.00	-		8.5	Clear	Y
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	**41 Kensico Dr**	**Well No:**	LMW15	**Water Quality Device Model:**	**Horiba U-52**	**Weather:**	80s clear	**Sample(s):**	LMW15_090618
Project Number:	**170046301**	**Well Depth:**	34.55	**Pine Number:**		**Background PID (ppm):**	0		
Site Location:	**Mt Kisco, NY**	**Well Diameter:**	2-INCH	**Pump Make and Model:**	**Perri Pump**	**PID Beneath Inner Cap (ppm):**	20.5		
Sampling Personnel:	**L.McCartney**	**Well Screen Interval:**		**Pine Number:**		**Pump Intake Depth:**		**Sample Date:**	9/6/2018
				Tubing Diameter:	**3/8"ID**	**Depth to Water Before Purge:**		**Sample Time:**	945

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
8:45	17.09	6.43	287	0.356	0.0	16.64	-	-			**N/A**
8:50	17.18	7.92	212	0.357	0.0	5.46	-	-	4		**N/A**
8:55	16.88	8.02	165	0.361	0.0	4.04	-	-	6		**N**
9:00	17.26	8.05	126	0.355	0.0	2.95	-	-	8		**N**
9:05	16.95	8.04	90	0.357	0.0	2.00	-	-	10		**N**
9:10	17.01	8.09	67	0.361	0.0	1.31	-	-	12		**N**
9:15	16.99	8.10	47	0.362	0.0	0.76	-	-	14		**N**
9:20	17.18	8.10	33	0.363	1000.00	0.05	-	-	16		**N**
9:25	16.85	8.11	21	0.365	0.00	0.00	-	-	18		**N**
9:30	16.87	8.11	13	0.367	0.00	0.00	-	-	20		**N**
9:35	16.82	8.11	7	0.367	0.00	0.00	-	-	22		**N**
9:40	16.77	8.12	1	0.368	0.00	0.00	-	-	24		**N**
9:45	16.72	8.10	-2	0.369	0.00	0.00	-	-	26		**Y**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW01D	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW01D_090518
Project Number:	170046301	Well Depth:	54.7	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	42.4		
Sampling	L.McCartney	Well Screen	44	Pine Number:		Pump Intake Depth:	14.00	Sample Date:	9/5/2018
Personnel:		Interval:	54	Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	2.05	Sample Time:	1120

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
10:15	21.92	7.36	214	0.346	31.1	2.52	2.20	-	0.25		**N/A**
10:20	17.96	8.24	195	0.335	0.00	0.00	-				**N/A**
10:25	18.09	8.21	189	0.330	0.00	0.00	-	0.5	1.45		**N**
10:30	18.08	8.18	179	0.328	0.00	0.00	-	0.5	2.25		**N**
10:35	17.74	8.17	171	0.325	0.00	0.00	5.30	0.5	2.75		**N**
10:40	17.60	8.18	163	0.325	0.00	0.00	6.30	0.5	3.5		**N**
10:45	17.53	8.19	155	0.322	0.00	0.00	5.60	0.5	4.1		**N**
10:50	17.60	8.21	147	0.320	0.0	0.00	-	0.50	4.6		**N**
10:55	17.36	8.22	138	0.318	0.0	0.00	-	0.50	5.2		**N**
11:00	17.36	8.25	140	0.317	980.0	0.00	-	0.50	5.8		**N**
11:05	17.41	8.28	129	0.317	846.0	0.00	-		6.5		**N**
11:10	17.45	8.31	125	0.316	692.0	0.00	-		7		**N**
11:15	17.47	8.35	128	0.314	580.0	0.00	-		7.6		**N**
11:20	17.46	**8.38**	116	**0.312**	454.0	0.00	-		8.5		**N**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW08D	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW08D_090518
Project Number:	170046301	Well Depth:		Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	2.1		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/5/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:		Sample Time:	1625

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
15:25	18.90	8.68	28	0.145	86.9	0.27	-	-			N/A
15:30	15.91	8.75	19	0.151	62.50	0.00	-	-	4		N/A
15:35	16.07	8.75	10	0.149	64.40	0.00	-	-	6		N
15:40	15.81	8.76	-26	0.151	44.80	0.00	-	-	8		N
15:45	15.54	8.76	-32	0.152	43.70	0.00	-	-	10		N
15:50	15.90	8.76	-41	0.151	35.60	0.00	-	-	12		N
15:55	15.96	8.75	-48	0.151	37.10	0.00	-	-	13		N
16:00	17.78	8.72	-48	0.148	29.00	0.00	-	-	13.5		N
16:05	16.14	8.78	-36	0.154	32.50	0.00	-	-	15		N
16:10	15.55	8.78	-53	0.150	26.00	0.00	-	-	17		N
16:15	16.66	8.76	-53	0.150	31.30	0.00	-	-	18.5		N
16:20	17.18	8.77	-63	0.150	26.20	0.00	-	-	20.5		N
16:25	18.14	8.76	-61	0.150	24.60	0.00	-	-	22		N
											N
											N
											N
											N
											N
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											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
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Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	**41 Kensico Dr**	**Well No:**	LMW08S	**Water Quality Device Model:**	**Horiba U-52**	**Weather:**	80s clear	**Sample(s):**	LMW08S_090518
Project Number:	**170046301**	**Well Depth:**	15	**Pine Number:**		**Background PID (ppm):**	0		
Site Location:	**Mt Kisco, NY**	**Well Diameter:**	2-INCH	**Pump Make and Model:**	**Perri Pump**	**PID Beneath Inner Cap (ppm):**	4.7		
Sampling Personnel:	**L.McCartney**	**Well Screen Interval:**	2 15	**Pine Number:**		**Pump Intake Depth:**	14.00	**Sample Date:**	9/5/2018
				Tubing Diameter:	**3/8"ID**	**Depth to Water Before Purge:**	-	**Sample Time:**	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
15:51	20.17	7.60	-90	0.399	4.6	9.00	-	-	0	Clear	**N/A**
15:56	16.65	7.49	-83	0.385	0.00	6.45	-		2.25	Clear	**N/A**
16:01	16.01	7.38	-85	0.386	0.00	4.42	-	0.5	5	**Clear**	**N**
16:06	15.51	7.35	-83	0.387	0.00	3.12	-	0.5	7.5	**Clear**	**N**
16:11	15.39	7.37	-84	0.386	0.00	2.12	-	0.5	10	**Clear**	**N**
16:16	15.21	7.38	-87	0.389	0.00	1.26	-	0.5	12.5	Clear	**N**
16:21	15.23	7.41	-90	0.388	0.00	0.60	-	0.5	15	Clear	**N**
16:26	15.25	7.45	-94	0.389	0.0	0.00	-	0.50	17.5	**Clear**	**N**
16:31	15.26	7.47	-96	0.389	0.0	0.00	-	0.50	20	**Clear**	**N**
16:36	15.45	7.48	-99	0.384	0.0	0.00	-	0.50	22.5	**Clear**	**Y**
16:37											**N**
											N
											N
											N
											N
											N
											N
											N
											N
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Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
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Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW11	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW11_090518
Project Number:	170046301	Well Depth:		Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):			
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/5/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	3.15	Sample Time:	1205

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
11:05	19.47	6.52	184	0.560	0.0	10.48	3.15	-			N/A
11:10	16.66	7.46	179	0.550	535.00	3.80	3.50	-	2		N/A
11:15	15.85	7.58	177	0.539	>1000	0.00	3.50	-	4.5		N
11:20	15.67	7.58	175	0.544	>1000	0.00	3.35	-	7		N
11:25	15.43	7.57	173	0.431	>1000	0.00	3.50	-	10.5		N
11:30	15.43	7.56	172	0.324	>1000	0.00	3.50	-	12.5		N
11:35	15.44	7.56	171	0.265	>1000	0.00	3.50	-	14.5		N
11:40	15.33	7.59	168	0.242	>1000	0.00	3.50	-	16.5		N
11:45	15.66	7.60	166	0.237	>1000	0.00	3.50	-	18.5		N
11:50	15.46	7.60	165	0.235	>1000	0.00	3.50	-	20.5		N
11:55	15.46	7.61	164	0.234	>1000	0.00	3.50	-	22.5		N
12:00	15.44	7.61	164	0.234	>1000	0.00	3.50	-	24.5		N
12:05	15.26	7.61	163	0.233	>1000	0.00	3.50	-	26.5		N
											N
											N
											N
											N
											N
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Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW08S	Water Quality Device Model:	Horiba U-52	Weather:	90s Hazy	Sample(s):	LMW12D_090618
Project Number:	170046301	Well Depth:	22	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	20.3		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:	42.00	Sample Date:	9/6/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	-	Sample Time:	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
13:33	21.72	7.86	97	0.556	15.6	8.11	-	-	0	Clear	N/A
13:38	21.29	7.77	107	0.557	24.60	7.02	1.50	0.5	2.5	Clear	N/A
13:43	18.44	7.73	103	0.592	41.50	0.00		0.5	5	Clear	N
13:48	17.84	7.62	87	0.592	23.10	0.94		0.5	7.5	Clear	N
13:53	18.16	7.55	80	0.589	862.00	0.75	1.50	0.5	10	Light olive	N
13:58	18.04	7.53	60	0.589	743.00	0.00		0.5	12.5	Light olive	N
14:03	17.84	7.55	46	0.589	587.00	0.00	1.50	0.5	14	Light olive	N
14:08	17.71	7.61	30	0.588	472.0	0.00		0.50	16.5	Light olive	N
14:13	17.99	7.63	21	0.588	387.0	0.00		0.50	19	slight olive	N
14:18	18.00	7.63	18	0.589	354.0	0.00		0.50	21.5	slight olive	N
14:23	18.31	7.68	6	0.589	328.0	0.00	1.50	0.50	24	slight olive	N
14:28	18.03	7.69	4	0.588	313.0	0.00		0.50	26.5	slight olive	N
14:33	18.30	7.71	9	0.588	185.0	0.00	1.50	0.50	29	slight olive	N
14:38											N
											N
											N
											N
											N
											N
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											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW08S	Water Quality Device Model:	Horiba U-52	Weather:	90s Hazy	Sample(s):	LMW12S_090618
Project Number:	170046301	Well Depth:	22	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	161.7		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:	19.00	Sample Date:	9/6/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	-	Sample Time:	

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
9:33	20.06	7.71	203	0.420	9999.0	1.11	-	-	0	Brown, turbid	**N/A**
9:38	18.75	7.75	180	0.389	9999.00	0.00	-	0.5	2.5	Brown, turbid	**N/A**
9:43	18.80	7.73	173	0.386	9999.00	0.00	-	0.5	5	Brown, turbid	**N**
9:48	18.92	7.73	164	0.379	9999.00	0.00	-	0.5	7.5	Brown, turbid	**N**
9:53	19.35	7.77	153	0.367	9999.00	0.00	-	0.5	10	Brown, turbid	**N**
9:58	19.39	7.80	148	0.359	9999.00	0.00	-	0.48	12	Brown, turbid	**N**
10:03	19.17	7.83	141	0.353	9999.00	0.00	-	0.47	14	Brown, turbid	**N**
10:08	19.10	7.88	133	0.350	9999.0	0.00	-		16	Brown, turbid	**N**
10:13	19.02	7.93	129	0.336	9999.0	0.00	-		18.5	Brown, turbid	**N**
10:18	19.05	7.98	125	0.339	9999.0	0.00	-		21	Brown, turbid	**N**
10:23	18.73	8.02	123	0.336	9999.0	0.00	-		23.5	Brown, turbid	**Y**
10:28	18.00	8.07	120	0.333	9999.0	0.00	-		26	Brown, turbid	**N**
10:33										Brown, turbid	**N**
10:38											**N**
											N
											N
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											N
											N
											N
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Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW19D	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW19D_090718
Project Number:	170046301	Well Depth:		Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	76.1		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/7/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	3.55	Sample Time:	1020

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
9:20	20.02	7.77	74	0.465	61.7	1.81	-	-	1		N/A
9:25	17.92	8.02	75	0.493	164.0	0.00	-	-	2		N/A
9:30	17.35	7.97	71	0.496	104.0	0.00	-	-	5.5		N
9:35	17.42	7.97	71	0.496	51.1	0.00	-	-	7.5		N
9:40	17.17	7.95	69	0.499	40.0	0.00	-	-	10		N
9:45	17.10	7.96	67	0.500	37.5	0.00	-	-	12.5		N
9:50	16.94	7.96	47	0.502	36.6	0.00	-	-	14.5		N
9:55	16.86	7.96	55	0.503	30.2	0.00	-	-	16.5		N
10:00	16.75	7.97	59	0.504	23.8	0.00	-	-	18.5		N
10:05	16.68	7.96	60	0.504	9.2	0.00	-	-	20.5		N
10:10	16.67	7.97	60	0.504	2.2	0.00	-	-	22.5		N
10:15	16.56	7.97	60	0.505	5.4	0.00	-	-	24.5		N
10:20	16.52	7.96	60	0.505	0.0	0.00	-	-	26.5		N
											N
											N
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Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW19S	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW19S_090718
Project Number:	170046301	Well Depth:	11.4	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	50.4		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/7/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	5.2	Sample Time:	840

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
7:40	21.69	6.52	211	0.764	684.0	4.03	5.20	-	1		N/A
7:45	21.39	6.95	102	0.679	0.0	0.03	-	-	2		N/A
7:50	21.20	6.86	61	0.682	0.0	0.00	-	-	5		N
7:55	20.84	6.77	39	0.626	1000.0	0.00	-	-	7	of sediment in tul	N
8:00	20.56	6.77	45	0.539	1000.0	0.00	-	-	9		N
8:05	20.67	6.77	48	0.512	1000.0	0.00	-	-	11		N
8:10	20.35	6.75	57	0.497	1000.0	0.00	-	-	13		N
8:15	20.31	6.77	54	0.304	1000.0	0.00	-	-	15		N
8:20	20.26	6.76	54	0.476	1000.0	0.00	-	-	17		N
8:25	20.21	6.77	55	0.483	1000.0	0.00	-	-	19		N
8:30	20.16	6.78	57	0.478	1000.0	0.00	-	-	21		Y
8:35	20.15	6.78	59	0.313	1000.0	0.00	-	-	23		N
8:40	20.13	6.78	60	0.275	1000.0	0.00	-	-	25		N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW20D	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW20S_090618
Project Number:	170046301	Well Depth:	47.4	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	11		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/6/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	1.72	Sample Time:	1350

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:50	25.92	7.41	92	0.000	130.0	20.12	1.72	-	0.75		N/A
12:55	18.23	8.08	-144	0.495	0.0	0.00	4.38	-	3		N/A
13:00	18.10	8.08	-167	0.495	0.0	0.00	4.34	-	5		N
13:05	18.01	8.10	-171	0.488	541.0	0.00	4.23	-	7		N
13:10	17.54	8.12	-169	0.480	120.0	0.00	4.20	-	9		N
13:15	17.56	8.10	-178	0.488	201.0	0.00	4.20	-	11		N
13:20	17.32	8.10	-189	0.489	242.0	0.00	4.20	-	13		N
13:25	17.33	8.10	-195	0.488	185.0	0.00	4.20	-	15		N
13:30	17.08	8.09	-204	0.492	160.0	0.00	4.10	-	17		N
13:35	17.08	8.09	-212	0.493	144.0	0.00	4.10	-	19		N
13:40	17.17	8.09	-221	0.495	117.0	0.00	4.00	-	21		N
13:45	16.82	8.09	-233	0.496	127.0	0.00	4.20	-	23		N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Groundwater Sampling Logs
Remedial Investigation Report
41 Kensico Drive
Mount Kisco, NY

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Dr	Well No:	LMW20S	Water Quality Device Model:	Horiba U-52	Weather:	80s clear	Sample(s):	LMW20S_090718
Project Number:	170046301	Well Depth:	36.7	Pine Number:		Background PID (ppm):	0		
Site Location:	Mt Kisco, NY	Well Diameter:	2-INCH	Pump Make and Model:	Perri Pump	PID Beneath Inner Cap (ppm):	9.4		
Sampling Personnel:	L.McCartney	Well Screen Interval:		Pine Number:		Pump Intake Depth:		Sample Date:	9/7/2018
				Tubing Diameter:	3/8"ID	Depth to Water Before Purge:	2.55	Sample Time:	1510

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (L)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
14:10	21.50	8.38	171	0.366	274.0	3.42	-	-	0.75		N/A
14:15	19.75	8.54	150	0.354	99.6	0.00	-	-	2		N/A
14:20	19.15	8.55	137	0.355	66.0	0.00	-	-	4		N
14:25	18.99	8.55	127	0.354	49.0	0.00	-	-	6		N
14:30	18.65	8.55	122	0.355	49.4	0.00	-	-	8		N
14:35	18.88	8.56	114	0.354	43.0	0.00	-	-	10		N
14:40	18.98	8.56	109	0.354	40.1	0.00	-	-	12		N
14:45	18.98	8.57	102	0.354	35.1	0.00	-	-	14		N
14:50	18.91	8.56	97	0.353	32.3	0.00	-	-	16		N
14:55	18.88	8.56	93	0.351	30.7	0.00	-	-	18		N
15:00	18.66	8.55	89	0.351	35.6	0.00	-	-	20		N
15:05	18.56	8.55	86	0.350	27.4	0.00	-	-	22		N
15:10	18.57	8.55	82	0.351	34.6	0.00	-	-	24		N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Drive	Well No:	GWG01	Water Quality Device Model:	Horiba U52	Weather:	58° F; cloudy		
Project Number:	190046301	Well Depth:	12 ft	Pine Number:	19228	Background PID (ppm):	0.0	Sample(s):	GWG01_050919
Site Location:	Mount Kisco, New York	Well Diameter:	2-inch	Pump Make and Model:	Peristaltic	PID Beneath Inner Cap (ppm):	0		
Sampling Personnel:	L. McMahon	Well Screen Interval:	2	Pine Number:	44401	Pump Intake Depth:	9.00	Sample Date:	5/9/2019
			15	Tubing Diameter:	1/2"x3/8"	Depth to Water Before Purge:	3.66	Sample Time:	13:30

STABILIZATION = 3 successive readings within limits

TIME	TEMP ^{o}Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:45	12.77	5.20	180	0.532	0.0	0.96	-		0.00	Clear	**N/A**
12:50	11.31	6.34	29	0.473	0.0	0.0	-	0.11	0.53	Clear	**N/A**
12:55	10.96	6.71	-15	0.466	0.0	0.0	-	0.11	1.06	Clear	**N**
13:00	10.87	6.86	-41	0.472	0.0	0.0	-	0.11	1.59	Clear	**N**
13:05	10.79	6.92	-57	0.483	0.0	0.0	-	0.11	2.11	Clear	**N**
13:10	10.77	6.96	-73	0.495	0.0	0.0	-	0.11	2.64	Clear	**N**
13:15	10.77	7.01	-83	0.507	0.0	0.0	-	0.11	3.17	Clear	**N**
13:20	10.73	7.02	-86	0.508	0.0	0.0	-	0.11	3.70	Clear	**N**
13:25	10.70	7.04	-91	0.507	0.0	0.0	-	0.11	4.23	Clear	**Y**
											N
											N
											N
											N
											N
											N
											N
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											N
											N
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											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	41 Kensico Drive	**Well No:**	GWG02	**Water Quality Device Model:**	Horiba U52	**Weather:**	58° F; cloudy		
Project Number:	190046301	**Well Depth:**	12 ft	**Pine Number:**	19228	**Background PID (ppm):**	0.0	**Sample(s):**	GWG02_050919
Site Location:	Mount Kisco, New York	**Well Diameter:**	2-inch	**Pump Make and Model:**	Peristaltic	**PID Beneath Inner Cap (ppm):**	0		
Sampling	L. McMahon	**Well Screen**	2	**Pine Number:**	44401	**Pump Intake Depth:**	9.00	**Sample Date:**	5/9/2019
Personnel:		**Interval:**	15	**Tubing Diameter:**	1/2"x3/8"	**Depth to Water Before Purge:**	3.53	**Sample Time:**	14:16

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
13:56	11.76	7.90	-18	0.502	0.0	0.00	-		0	Clear	**N/A**
14:01	10.49	7.20	-53	0.500	0.0	0.00	-	0.11	0.53	Clear	**N/A**
14:06	10.36	7.20	-64	0.501	0.0	0.00	-	0.11	1.06	Clear	**N**
14:11	10.32	7.20	-71	0.502	0.0	0.00	-	0.11	1.59	Clear	**N**
14:16	10.31	7.19	-74	0.504	0.0	0.00	-	0.11	2.11	Clear	**Y**
											N
											N
											N
											N
											N
											N
											N
											N
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											N
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											N
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											N
											N
											N

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

Project Information		Well Information		Equipment Information			Sampling Conditions			Sampling Information	
Project Name:	41 Kensico Drive	**Well No:**	GWG03		**Water Quality Device Model:**	Horiba U52		**Weather:**	58° F; cloudy		
Project Number:	190046301	**Well Depth:**	12 ft		**Pine Number:**	19228		**Background PID (ppm):**	0.0	**Sample(s):**	GWG03_050919
Site Location:	Mount Kisco, New York	**Well Diameter:**	2-inch		**Pump Make and Model:**	Peristaltic		**PID Beneath Inner Cap (ppm):**	2.1		
Sampling	L. McMahon	**Well Screen**	2		**Pine Number:**	44401		**Pump Intake Depth:**	8 ft	**Sample Date:**	5/9/2019
Personnel:		**Interval:**	12		**Tubing Diameter:**	1/2"x3/8"		**Depth to Water Before Purge:**	3.8 ft	**Sample Time:**	16:04
STABILIZATION = 3 successive readings within limits											
TIME	**TEMP °Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
14:54	12:45	7.32	-30	0.485	12.8	0.86	-		0	Clear	**N/A**
14:59	11.46	7.56	-72	0.487	30.5	0.00	-	0.11	0.53	Clear	**N/A**
15:04	11.26	7.24	-60	0.508	14.1	0.00	-	0.09	0.98	Clear	**N**
15:09	11.72	7.11	-38	0.519	13.9	3.72	-	0.04	1.16	Clear	**N**
15:14	11.84	7.11	-20	0.519	15.7	4.42	-	0.04	1.35	Clear	**N**
15:19	11.87	7.14	-24	0.524	13.5	4.50	-	0.04	1.56	Clear	**N**
15:24	11.89	7.13	-7	0.537	11.0	5.04	-	0.05	1.80	Clear	**N**
15:29	11.91	7.14	-3	0.542	10.5	6.14	-	0.05	2.06	Clear	**N**
15:34	11.68	7.16	-7	0.540	26.7	5.76	-	0.10	2.54	Clear	**N**
15:39	11.60	7.13	-7	0.553	27.2	5.79	-	0.05	2.80	Clear	**N**
15:44	11.64	7.15	-6	0.552	12.2	5.88	-	0.05	3.06	Clear	**N**
15:49	11.66	7.16	-1	0.555	8.0	6.03	-	0.04	3.28	Clear	**N**
15:54	11.64	7.17	4	0.558	6.4	6.18	-	0.06	3.57	Clear	**N**
15:59	11.65	7.18	7	0.564	4.1	6.38	-	0.04	3.78	Clear	**N**
16:04	11.62	7.20	10	0.563	2.7	4.93	-	0.04	3.96	Clear	**N**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

LANGAN Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

APPENDIX F

SUB-SLAB SOIL VAPOR SAMPLING LOGS

SUB-SLAB SOIL VAPOR SAMPLING LOG SHEET

Sample Number: LSV22

PROJECT: 41 Kensico Drive	**PROJECT NO.:** 190046301
LOCATION: Mt. Kisco, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** ~~8/13/2018~~ 8/14/18 **DATE FINISHED:** ~~8/13/2018~~ 8/14/18
INSTALLATION FOREMAN: Sergio Magana	**SAMPLE DATE STARTED:** 8/14/2018 **DATE FINISHED:** 8/14/2018
INSTALLATION EQUIPMENT: Geoprobe® 6610 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Luke McCartney	**SAMPLER:** Kyle Twombly
POTENTIAL SAMPLE INTERFERENCES:	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 75-80°F Humidity: 74% Wind: SW@ ~~5~~-10 mph Precipitation: 0.2 inch Pressure: 29.9 in Hg
METHOD OF INSTALLATION AND PURGING:	
TUBING TYPE/DIAMETER: 1/4-Inch Teflon-lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None (Prefered)
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2-inch	**FILTER PACK MATERIAL (Sand or Glass Beads):** No. 2 Sand

PURGE VOLUME (L):	1L	
PURGE FLOW RATE (ML/MIN):	0.15 mL/min	
PID AFTER PURGE (PPM):	0.1 ppm	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	33.9%	8.8%
HELIUM TEST IN TUBE (PPM):	33.1%	7.6%
SAMPLE START TIME:	8/14/18 / 13:15	
SAMPLE STOP TIME:	8/14/18 / 15:15	
TOTAL SAMPLE TIME (MIN):	120	
REGULATOR FLOW RATE (L/MIN):	42.15	
VOLUME OF SAMPLE (LITERS):	6 L	
PID AFTER SAMPLE (PPM):	0.1	
SAMPLE MOISTURE CONTENT:	NA	
CAN SERIAL NUMBER:	Y66	
REGULATOR SERIAL NUMBER:	3350	
CAN START VACUUM PRESS. (" HG):	28.15	
CAN STOP VACUUM PRESS. (" HG):	4.28	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
SURFACE SURFACE		
Top of Seal		
Top of Pack		
Tube Depth		

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

APPENDIX G

DATA USABILITY SUMMARY REPORTS

Technical Memorandum

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Tyler Chow, Langan Project Manager

From: Emily Strake, Langan Senior Project Chemist

Date: September 24, 2018

Re: Data Usability Summary Report
For 41 Kensico Drive
Soil Samples Collected in August, 2018
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in 2018 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAC registration # 10854) and Phoenix Environmental Laboratories, Inc. (NYSDOH NELAC registration #11301) for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total organic carbon (TOC), biological oxygen demand (BOD), chemical oxygen demand (COD), pesticides, metals, mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), and percent moisture (%M) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs SW-846 Method 8270D and 8270D with SIM
- Pesticides by SW-846 Method 8081B
- PCBs by SW-846 Method 8082A
- Herbicides by SW-846 Method 8151A
- Total Metals by Method SW-846 6010C
- Mercury by SW-846 Method 7473
- Cyanide by SW-846 Method 9010
- Hexavalent Chromium by SW-846 Method 7196A
- TOC by SM5210B
- BOD by SM5220D
- COD by SM5220D
- Percent Moisture by SM2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
18H0436	18H0436-01	LB01_28-29	8/09/2018	VOCs, %S
18H0436	18H0436-02	LB01_33-34	8/09/2018	VOCs, %S
18H0436	18H0436-03	LB01_48-49	8/09/2018	VOCs, %S
18H0436	18H0436-04	LB01_53-54	8/09/2018	VOCs, %S
18H0436	18H0436-05	LB01_27-39	8/09/2018	TOC, BOD, COD, %S
18H0436	18H0436-06	LB01_48-60	8/09/2018	TOC, BOD, COD, %S
18H0440	18H0440-01	LB01_4-5	8/09/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0440	18H0440-02	LB01_29-30	8/09/2018	VOCs, SVOCs, %S
18H0440	18H0440-03	LB01_35-37	8/09/2018	VOCs, SVOCs, %S
18H0440	18H0440-04	LB01_48.5-49.5	8/09/2018	VOCs, SVOCs, %S
18H0440	18H0440-05	LB01_54-55	8/09/2018	VOCs, SVOCs, %S
18H0440	18H0440-06	SBEB03_080918	8/09/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI
18H0320	18H0320-01	LB22_11-12	8/07/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0320	18H0320-02	LB08_4-5	8/07/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0320	18H0320-03	LB08_15.5-16.5	8/07/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0320	18H0320-04	LB08_51-52	8/07/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0320	18H0320-05	SBEB01_080718	8/07/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI
18H0525	18H0525-01	LB09_6-7	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0525	18H0525-02	LB16_5-6	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0525	18H0525-04	LB17_22-24	8/10/2018	VOCs, SVOCs, %S
18H0525	18H0525-05	LB17_43-44	8/10/2018	VOCs, SVOCs, %S
18H0525	18H0525-06	LB17_49-50	8/10/2018	VOCs, SVOCs, %S
18H0525	18H0525-07	LB21_5-6	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0525	18H0525-08	LB21_18-19	8/10/2018	VOCs, SVOCs, %S
18H0525	18H0525-09	LB24_1-2	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0525	18H0525-10	LB26_6-7	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
18H0525	18H0525-11	LB24_13-14	8/10/2018	VOCs, SVOCs, %S
18H0525	18H0525-12	SBEB04_081018	8/10/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI
18H0372	18H0372-01	LB07_7-8	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0372	18H0372-02	LB07_18-19	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0372	18H0372-03	LB25_7-8	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0372	18H0372-04	LB08_69-70	8/8/2018	VOCs, SVOCs, %S
18H0372	18H0372-05	LB08_62-63	8/8/2018	VOCs, SVOCs, %S
18H0372	18H0372-06	SBEB02_080818	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI
18H0372	18H0372-07	LB25_15-16	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0372	18H0372-08	SBDUP01_080818	8/8/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-01	LB11_4.5-5.5	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-02	LB11_11-12	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-03	LB11_23-24	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-04	LB13_5-6	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-05	LB13_23-24	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-06	LB13_29-30	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-07	LB14_4-5	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-08	LB14_13-14	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-09	LB14_29-30	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-10	LB23_4-5	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-11	LB23_12-13	8/13/2018	VOCs, SVOCs, %S
18H0594	18H0594-12	SBDUP02_081318	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0594	18H0594-12	SBEB05_081318	8/13/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI
18H0655	18H0655-01	LB15_5-6	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-02	LB15_33-34	8/14/18	VOCs, SVOCs, %S
18H0655	18H0655-03	LB15_44-45	8/14/18	VOCs, SVOCs, %S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
18H0655	18H0655-04	LB15_53-54	8/14/18	VOCs, SVOCs, %S
18H0655	18H0655-05	LB12_2-3	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-06	LB12_19-20	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-07	LB12_29-30	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-08	LB12_42-43	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-09	LB19_5-6	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0655	18H0655-10	LB19_34.5-35.5	8/14/18	VOCs, SVOCs, %S
18H0655	18H0655-11	LB19_44-45	8/14/18	VOCs, SVOCs, %S
18H0655	18H0655-12	SBEB06_081418	8/14/18	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Metals, CN, CrVI
18H0697	18H0697-01	LB12_0.5-2	8/15/18	VOCs, SVOCs, PCBs, Pesticides, Metals, CN, CrVI, %S
18H0697	18H0697-02	SBEB07_081518	8/15/18	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Metals, CN, CrVI, %S
18H0937	18H0937-01	LB10_2-3	8/20/18	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Metals, CN, CrVI, %S
18H0937	18H0937-02	LB10_31-32	8/20/18	VOCs, SVOCs, %S
18H0937	18H0937-03	LB10_45-46	8/20/18	VOCs, SVOCs, %S
18H0937	18H0937-04	LB20_5-6	8/20/18	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Metals, CN, CrVI, %S
18H0937	18H0937-05	LB20_32.5-33.5	8/20/18	VOCs, SVOCs, %S
18H0937	18H0937-06	LB20_47-48	8/20/18	VOCs, SVOCs, %S
18H0937	18H0937-07	SBEB08_082018	8/20/18	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Metals, CN, CrVI
18H0937	18H0937-08	SBDUP03_082018	8/20/18	VOCs, SVOCs, %S

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34a, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LB01_27-39	SM5210B	BOD5	BIOLOGIC OXYGEN DEMAND, FIVE DAY	UJ
LB01_48-60	SM5210B	BOD5	BIOLOGIC OXYGEN DEMAND, FIVE DAY	UJ
LB01_4-5	SW6010B	7440-02-0	Nickel	J
LB01_4-5	SW6010B	7440-38-2	Arsenic	J
LB01_4-5	SW6010B	7440-41-7	Beryllium	J
LB01_4-5	SW6010B	7440-66-6	Zinc	J
LB01_4-5	SW6010B	7782-49-2	Selenium	UJ
LB01_4-5	SW9010	57-12-5	Cyanide	UJ
SBEB03_080918	SW6020A	7440-66-6	Zinc	J
SBEB03_080918	SW6020A	7782-49-2	Selenium	UJ
SBEB03_080918	SW8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
SBEB03_080918	SW8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SBEB03_080918	SW8082A	11104-28-2	PCB-1221 (Aroclor 1221)	UJ
SBEB03_080918	SW8082A	11141-16-5	PCB-1232 (Aroclor 1232)	UJ
SBEB03_080918	SW8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SBEB03_080918	SW8082A	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
SBEB03_080918	SW8082A	1336-36-3	Polychlorinated Biphenyl (PCBs)	UJ
SBEB03_080918	SW8082A	53469-21-9	PCB-1242 (Aroclor 1242)	UJ
SBEB03_080918	SW8270D	132-64-9	Dibenzofuran	UJ
SBEB03_080918	SW8270D	95-48-7	2-Methylphenol (O-Cresol)	UJ
SBEB03_080918	SW9010	57-12-5	Cyanide	R
LB08_15.5-16.5	SW6010B	7439-92-1	LEAD	J
LB08_15.5-16.5	SW6010B	7782-49-2	SELENIUM	UJ
LB08_15.5-16.5	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB08_15.5-16.5	SW8260C	67-64-1	ACETONE	U (0.0086)
LB08_4-5	SW6010B	7782-49-2	SELENIUM	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB08_4-5	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB08_4-5	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
LB08_4-5	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
LB08_4-5	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
LB08_4-5	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LB08_4-5	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
LB08_4-5	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
LB08_4-5	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
LB08_4-5	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
LB08_51-52	SW6010B	7439-92-1	LEAD	J
LB08_51-52	SW6010B	7782-49-2	SELENIUM	UJ
LB08_51-52	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB22_11-12	SW6010B	7782-49-2	SELENIUM	UJ
LB22_11-12	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB22_11-12	SW8260C	156-59-2	CIS-1,2-DICHLOROETHYLENE	J
LB22_11-12	SW8260C	75-01-4	VINYL CHLORIDE	J
SBEB01_080718	SW6020A	7440-66-6	ZINC	J
SBEB01_080718	SW6020A	7782-49-2	SELENIUM	UJ
SBEB01_080718	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
SBEB01_080718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
SBEB01_080718	SW8260C	67-64-1	ACETONE	J
SBEB01_080718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	UJ
SBEB01_080718	SW9010	57-12-5	CYANIDE	R
LB09_6-7	SW6010B	7440-38-2	ARSENIC	U (2.33)
LB09_6-7	SW9010	57-12-5	CYANIDE	UJ
LB16_5-6	SW6010B	7440-38-2	ARSENIC	U (4.6)
LB16_5-6	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
LB16_5-6	SW8260C	104-51-8	N-BUTYLBENZENE	UJ
LB16_5-6	SW8260C	105-05-5	1,4-DIETHYL BENZENE	UJ
LB16_5-6	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
LB16_5-6	SW8260C	108-86-1	BROMOBENZENE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB16_5-6	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
LB16_5-6	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
LB16_5-6	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ
LB16_5-6	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
LB16_5-6	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
LB16_5-6	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LB16_5-6	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
LB16_5-6	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
LB16_5-6	SW8260C	91-20-3	NAPHTHALENE	UJ
LB16_5-6	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
LB16_5-6	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
LB16_5-6	SW8260C	98-06-6	T-BUTYLBENZENE	UJ
LB16_5-6	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
LB16_5-6	SW8260C	CYMP	P-CYMENE (P-ISOPROPYLTOLUENE)	UJ
LB16_5-6	SW9010	57-12-5	CYANIDE	UJ
LB17_22-24	SW8260C	67-64-1	ACETONE	U (0.0092)
LB17_43-44	SW8260C	67-64-1	ACETONE	U (0.0089)
LB17_49-50	SW8260C	67-64-1	ACETONE	U (0.0099)
LB21_5-6	SW6010B	7440-38-2	ARSENIC	UJ
LB21_5-6	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
LB21_5-6	SW8081B	309-00-2	ALDRIN	UJ
LB21_5-6	SW8081B	319-84-6	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UJ
LB21_5-6	SW8081B	319-85-7	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UJ
LB21_5-6	SW8081B	319-86-8	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UJ
LB21_5-6	SW8081B	33213-65-9	BETA ENDOSULFAN	UJ
LB21_5-6	SW8081B	50-29-3	P,P'-DDT	J
LB21_5-6	SW8081B	5103-71-9	ALPHA-CHLORDANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB21_5-6	SW8081B	58-89-9	GAMMA BHC (LINDANE)	UJ
LB21_5-6	SW8081B	60-57-1	DIELDRIN	UJ
LB21_5-6	SW8081B	72-20-8	ENDRIN	UJ
LB21_5-6	SW8081B	72-54-8	P,P'-DDD	J
LB21_5-6	SW8081B	72-55-9	P,P'-DDE	J
LB21_5-6	SW8081B	76-44-8	HEPTACHLOR	UJ
LB21_5-6	SW8081B	959-98-8	ALPHA ENDOSULFAN	UJ
LB21_5-6	SW9010	57-12-5	CYANIDE	UJ
LB24_1-2	SW6010B	7440-38-2	ARSENIC	U (2.71)
LB24_1-2	SW9010	57-12-5	CYANIDE	UJ
LB26_6-7	SW6010B	7440-38-2	ARSENIC	UJ
LB26_6-7	SW9010	57-12-5	CYANIDE	UJ
SBEB04_081018	SW8260C	67-64-1	ACETONE	J
SBEB04_081018	SW8270D	108-95-2	PHENOL	UJ
SBEB04_081018	SW8270D	132-64-9	DIBENZOFURAN	UJ
SBEB04_081018	SW8270D	95-48-7	2-METHYLPHENOL (O-CRESOL)	UJ
LB07_7-8	SW8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
LB07_7-8	SW8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
LB07_7-8	SW8082A	11104-28-2	PCB-1221 (Aroclor 1221)	UJ
LB07_7-8	SW8082A	11141-16-5	PCB-1232 (Aroclor 1232)	UJ
LB07_7-8	SW8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
LB07_7-8	SW8082A	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
LB07_7-8	SW8082A	1336-36-3	Polychlorinated Biphenyl (PCBs)	UJ
LB07_7-8	SW8082A	53469-21-9	PCB-1242 (Aroclor 1242)	UJ
LB25_15-16	CALC	16065-83-1	Chromium Iii	J
LB25_15-16	SW6010B	7440-38-2	Arsenic	J
LB25_15-16	SW6010B	7440-47-3	Chromium, Total	J
LB25_15-16	SW6010B	7440-50-8	Copper	J
LB25_15-16	SW6010B	7440-66-6	Zinc	J
LB25_7-8	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
LB25_7-8	SW8081B	309-00-2	Aldrin	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB25_7-8	SW8081B	319-84-6	Alpha Bhc (Alpha Hexachlorocyclohexane)	UJ
LB25_7-8	SW8081B	319-85-7	Beta Bhc (Beta Hexachlorocyclohexane)	UJ
LB25_7-8	SW8081B	319-86-8	Delta BHC (Delta Hexachlorocyclohexane)	UJ
LB25_7-8	SW8081B	33213-65-9	Beta Endosulfan	UJ
LB25_7-8	SW8081B	50-29-3	P,P'-DDT	UJ
LB25_7-8	SW8081B	5103-71-9	cis-Chlordane	UJ
LB25_7-8	SW8081B	58-89-9	Gamma Bhc (Lindane)	UJ
LB25_7-8	SW8081B	60-57-1	Dieldrin	UJ
LB25_7-8	SW8081B	72-20-8	Endrin	UJ
LB25_7-8	SW8081B	72-54-8	P,P'-DDD	UJ
LB25_7-8	SW8081B	72-55-9	P,P'-DDE	UJ
LB25_7-8	SW8081B	76-44-8	Heptachlor	UJ
LB25_7-8	SW8081B	959-98-8	Alpha Endosulfan	UJ
SBDUP01_080818	CALC	16065-83-1	Chromium Iii	J
SBDUP01_080818	SW6010B	7440-38-2	Arsenic	J
SBDUP01_080818	SW6010B	7440-47-3	Chromium, Total	J
SBDUP01_080818	SW6010B	7440-50-8	Copper	J
SBDUP01_080818	SW6010B	7440-66-6	Zinc	J
SBEB02_080818	SW6020A	7782-49-2	Selenium	UJ
SBEB02_080818	SW9010	57-12-5	Cyanide	R
LB11_11-12	SW8260C	75-09-2	METHYLENE CHLORIDE	U (0.0091)
LB11_4.5-5.5	SW6010B	7439-92-1	LEAD	J
LB11_4.5-5.5	SW6010B	7440-22-4	SILVER	UJ
LB11_4.5-5.5	SW8260C	75-09-2	METHYLENE CHLORIDE	U (0.0087)
LB13_23-24	SW8260C	75-09-2	METHYLENE CHLORIDE	U (0.01)
LB13_5-6	SW6010B	7439-92-1	LEAD	J
LB13_5-6	SW6010B	7440-22-4	SILVER	UJ
LB13_5-6	SW6010B	7440-66-6	ZINC	J
LB14_4-5	SW6010B	7439-92-1	LEAD	J
LB14_4-5	SW6010B	7440-22-4	SILVER	UJ
LB14_4-5	SW8260C	75-09-2	METHYLENE CHLORIDE	U (0.0082)

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB23_4-5	SW6010B	7439-92-1	LEAD	J
LB23_4-5	SW6010B	7440-22-4	SILVER	UJ
LB23_4-5	SW6010B	7440-50-8	COPPER	J
SBDUP02_081318	SW6010B	7439-92-1	LEAD	J
SBDUP02_081318	SW6010B	7440-22-4	SILVER	UJ
SBDUP02_081318	SW6010B	7440-50-8	COPPER	J
SBDUP02_081318	SW8260C	75-09-2	METHYLENE CHLORIDE	U (0.0087)
SBEB05_081318	SW8270D	108-95-2	PHENOL	UJ
SBEB05_081318	SW8270D	132-64-9	DIBENZOFURAN	UJ
SBEB05_081318	SW8270D	95-48-7	2-METHYLPHENOL (O-CRESOL)	UJ
LB12_19-20	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB12_2-3	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB12_29-30	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB12_42-43	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB15_5-6	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
LB19_5-6	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
SBEB06_081418	SW6010B	7440-38-2	ARSENIC	UJ
SBEB06_081418	SW6010B	7782-49-2	SELENIUM	U (0.017)
SBEB06_081418	SW8270D	108-95-2	PHENOL	UJ
SBEB06_081418	SW8270D	132-64-9	DIBENZOFURAN	UJ
SBEB06_081418	SW8270D	95-48-7	2-METHYLPHENOL (O-CRESOL)	UJ
SBEB06_081418	SW8270DSIM	85-01-8	PHENANTHRENE	UJ
SBEB07_081518	SW6020A	7440-38-2	ARSENIC	UJ
SBEB07_081518	SW6020A	7440-41-7	BERYLLIUM	UJ
SBEB07_081518	SW6020A	7440-66-6	ZINC	U (6.35)
SBEB07_081518	SW6020A	7782-49-2	SELENIUM	UJ
SBEB07_081518	SW8260C	67-64-1	ACETONE	J
SBEB07_081518	SW8270D	108-95-2	PHENOL	UJ
SBEB07_081518	SW8270D	132-64-9	DIBENZOFURAN	UJ
SBEB07_081518	SW8270D	95-48-7	2-METHYLPHENOL (O-CRESOL)	UJ
LB10_2-3	SW6010B	7440-38-2	Arsenic	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB20_47-48	SW8260C	79-01-6	Trichloroethylene (TCE)	J
LB20_5-6	SW6010B	7440-38-2	Arsenic	J
SBDUP03_082018	SW8260C	100-41-4	Ethylbenzene	UJ
SBDUP03_082018	SW8260C	100-42-5	Styrene	UJ
SBDUP03_082018	SW8260C	10061-01-5	Cis-1,3-Dichloropropene	UJ
SBDUP03_082018	SW8260C	10061-02-6	Trans-1,3-Dichloropropene	UJ
SBDUP03_082018	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SBDUP03_082018	SW8260C	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	UJ
SBDUP03_082018	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SBDUP03_082018	SW8260C	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	UJ
SBDUP03_082018	SW8260C	108-87-2	Methylcyclohexane	UJ
SBDUP03_082018	SW8260C	108-88-3	Toluene	UJ
SBDUP03_082018	SW8260C	108-90-7	Chlorobenzene	UJ
SBDUP03_082018	SW8260C	110-82-7	Cyclohexane	UJ
SBDUP03_082018	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SBDUP03_082018	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SBDUP03_082018	SW8260C	124-48-1	Dibromochloromethane	UJ
SBDUP03_082018	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SBDUP03_082018	SW8260C	156-59-2	Cis-1,2-Dichloroethylene	UJ
SBDUP03_082018	SW8260C	156-60-5	Trans-1,2-Dichloroethene	UJ
SBDUP03_082018	SW8260C	1634-04-4	Tert-Butyl Methyl Ether	UJ
SBDUP03_082018	SW8260C	179601-23-1	m,p-Xylene	UJ
SBDUP03_082018	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SBDUP03_082018	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SBDUP03_082018	SW8260C	591-78-6	2-Hexanone	UJ
SBDUP03_082018	SW8260C	67-64-1	Acetone	J
SBDUP03_082018	SW8260C	67-66-3	Chloroform	UJ
SBDUP03_082018	SW8260C	71-43-2	Benzene	UJ
SBDUP03_082018	SW8260C	71-55-6	1,1,1-Trichloroethane (TCA)	UJ
SBDUP03_082018	SW8260C	74-83-9	Bromomethane	UJ
SBDUP03_082018	SW8260C	74-87-3	Chloromethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SBDUP03_082018	SW8260C	74-97-5	Bromochloromethane	UJ
SBDUP03_082018	SW8260C	75-00-3	Chloroethane	UJ
SBDUP03_082018	SW8260C	75-01-4	Vinyl Chloride	UJ
SBDUP03_082018	SW8260C	75-09-2	Methylene Chloride	UJ
SBDUP03_082018	SW8260C	75-15-0	Carbon Disulfide	UJ
SBDUP03_082018	SW8260C	75-25-2	Bromoform	UJ
SBDUP03_082018	SW8260C	75-27-4	Bromodichloromethane	UJ
SBDUP03_082018	SW8260C	75-34-3	1,1-Dichloroethane	UJ
SBDUP03_082018	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SBDUP03_082018	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SBDUP03_082018	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SBDUP03_082018	SW8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SBDUP03_082018	SW8260C	78-87-5	1,2-Dichloropropane	UJ
SBDUP03_082018	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SBDUP03_082018	SW8260C	79-00-5	1,1,2-Trichloroethane	UJ
SBDUP03_082018	SW8260C	79-01-6	Trichloroethylene (TCE)	UJ
SBDUP03_082018	SW8260C	79-20-9	Methyl Acetate	UJ
SBDUP03_082018	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SBDUP03_082018	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SBDUP03_082018	SW8260C	95-47-6	O-Xylene (1,2-Dimethylbenzene)	UJ
SBDUP03_082018	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SBDUP03_082018	SW8260C	96-12-8	1,2-Dibromo-3-Chloropropane	UJ
SBDUP03_082018	SW8260C	98-82-8	Isopropylbenzene (Cumene)	UJ
SBDUP03_082018	SW8270D	108-95-2	Phenol	UJ
SBDUP03_082018	SW8270D	118-74-1	Hexachlorobenzene	UJ
SBDUP03_082018	SW8270D	120-12-7	Anthracene	UJ
SBDUP03_082018	SW8270D	129-00-0	Pyrene	UJ
SBDUP03_082018	SW8270D	132-64-9	Dibenzofuran	UJ
SBDUP03_082018	SW8270D	191-24-2	Benzo(G,H,I)Perylene	UJ
SBDUP03_082018	SW8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	UJ
SBDUP03_082018	SW8270D	205-99-2	Benzo(B)Fluoranthene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SBDUP03_082018	SW8270D	206-44-0	Fluoranthene	UJ
SBDUP03_082018	SW8270D	207-08-9	Benzo(K)Fluoranthene	UJ
SBDUP03_082018	SW8270D	208-96-8	Acenaphthylene	UJ
SBDUP03_082018	SW8270D	218-01-9	Chrysene	UJ
SBDUP03_082018	SW8270D	50-32-8	Benzo(A)Pyrene	UJ
SBDUP03_082018	SW8270D	53-70-3	Dibenz(A,H)Anthracene	UJ
SBDUP03_082018	SW8270D	56-55-3	Benzo(A)Anthracene	UJ
SBDUP03_082018	SW8270D	83-32-9	Acenaphthene	UJ
SBDUP03_082018	SW8270D	85-01-8	Phenanthrene	UJ
SBDUP03_082018	SW8270D	86-73-7	Fluorene	UJ
SBDUP03_082018	SW8270D	87-86-5	Pentachlorophenol	UJ
SBDUP03_082018	SW8270D	91-20-3	Naphthalene	UJ
SBDUP03_082018	SW8270D	95-48-7	2-Methylphenol (O-Cresol)	UJ
SBDUP03_082018	SW8270D	MEPH3MEPH4	3- And 4- Methylphenol (Total)	UJ
SBEB08_082018	SW6020A	7440-66-6	Zinc	U (5.59)
SBEB08_082018	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. The following major deficiencies were identified.

Cyanide by SW-846 Method 9014/9010C:

Equipment blank samples SBEB03_080918, SBEB02_080818 and SBEB01_080718, were submitted to the laboratory unpreserved. The laboratory preserved the samples upon receipt; however, a pH adjustment is necessary to prevent loss of hydrogen cyanide. The associated sample results are rejected.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

LCS/LCSD BH80429 exhibited recoveries greater than the upper control limit for acetone at 151% and 167%. The associated sample result is qualified as "J". In addition, the LCS/LCSD RPD for 1,4-dioxane was greater than the control limit at 33%. The associated sample result was non-detect; on the basis of professional judgment, qualification is not necessary.

The continuing calibration analyzed on 8/9/18 at 10:12 displayed a %D greater than the control limit for 1,4-dioxane at 179% and a RRF less than the control limit for TCE at 0.0196. The associated field blank sample results are qualified as estimated.

Field blank sample SBEB01_080718 displayed a positive detection for acetone at 1.7 ug/L. Associated sample results less than the reporting limit are qualified as "U" at the RL.

LCS/LCSD BH80425 displayed recoveries greater than the upper control limit for vinyl chloride at 150% and 138%, and chloroethane at 145%. The associated positive detections are qualified as J".

Sample LB08_4-5 exhibited an internal standard area count less than the lower control limit at 40% for 1,2-dichlorobenzene-d4. Results for compounds quantitated by 1,2-dichlorobenzene-d4 are qualified as estimated.

Sample LB22_11-12 displayed a concentration for cis-1,2-dichloroethene that was greater than the range of the instrument calibration; the result is qualified as "J", for estimated.

LCS/LCSD BH80642 displayed a recovery greater than the upper control limit for acetone at 165%. The associated positive field blank sample result collected on August 10, 2018 is qualified as "J". The investigative soil sample results are qualified as "U" at the reporting limit.

Sample LB16_5-6 exhibited an internal standard area count less than the lower control limit at 49% for 1,2-dichlorobenzene-d4. Results for compounds quantitated by 1,2-dichlorobenzene-d4 are qualified as estimated.

Method blank sample BH80791 displayed positive detections for dichlorodifluoromethane at 0.0026 mg/kg and methylene chloride at 0.0057 mg/kg. The associated positive detections are qualified as "U" at the reporting limit.

LCS/LCSD BH81003 displayed recoveries greater than the upper control limit for chloroethane and vinyl chloride. In addition, the acetone RPD was greater than the control limit at 31.5%. The positive detection for acetone is qualified as "J".

LCS/LCSD BH81074 exhibited recoveries less than the lower control limit for Tetrachloroethylene at 78.4% and 77.5%. The associated equipment blank sample result is qualified as “UJ”.

Sample SBDUP03_082018 was analyzed 3 days outside of the holding time period. The associated soil sample results are qualified as estimated.

Sample LB20_47-48 exhibited a positive detection greater than the range of the instrument calibration for trichloroethene. The associated sample result is qualified as “J”.

SVOCs by SW-846 Method 8270D and 8270D SIM:

LCS BH80571 displayed recoveries less than the lower control limit for 2-methylphenol and dibenzofuran at 42.6% and 63.3%, respectively. The associated sample results are qualified as “UJ”.

LCS BH80718 displayed recoveries less than the lower control limit for 2-methylphenol, phenol, and dibenzofuran at 34.9%, 17.2%, and 59.4%, respectively. The associated sample results are qualified as “UJ”.

LCS BH80830 displayed recoveries less than the lower control limit for 2-methylphenol, phenol, and dibenzofuran at 27.5%, 42.9%, and 11%, respectively. The LCS/LCSD RPDs were also greater than the control limit. The associated sample results are qualified as “UJ”.

The continuing calibration analyzed on 8/8/18 at 07:29 exhibited a %D greater than the control limit with a negative bias for phenanthrene at 25.2%. The associated non-detect field blank sample result is qualified as “UJ”.

Sample SBDUP03_082018 was analyzed 3 days outside of the holding time period. The associated soil sample results are qualified as estimated.

Pesticides by SW-846 Method 8081B:

Sample LB21_5-6 displayed a surrogate recovery less than the lower control limit for TCMX at 28.1% on the primary chromatography column. The associated sample results are qualified as estimated.

Sample LB25_7-8 displayed recoveries less than the lower control limit for DCB on the primary and secondary chromatography columns at 29.1% and 21.5%, respectively. The associated sample results are qualified as “UJ”.

PCBs by SW-846 Method 8082A:

The equipment blank sample exhibited a retention time shift greater than the control limit for all four surrogates. The associated sample results are qualified as estimated.

LCS/LCSD BH80646 displayed recoveries greater than the upper control limit for Aroclor 1260 and Aroclor 1016. The associated sample results are qualified as estimated.

Sample LB07_7-8 exhibited surrogate recoveries less than the lower control limit for DCB on the primary and secondary chromatography columns at 25.5% and 22%, respectively. The associated sample results are qualified as estimated.

Metals by SW-846 Method 6010C and 6020A:

CRDL standard Y8H1032 displayed recoveries greater than the upper control limit for arsenic, beryllium, and nickel at 146%, 142, and 152%, respectively. The associated sample results are qualified as "J".

ICP interference check sample Y8H1032 displayed recoveries less than the lower control limit for selenium and zinc at 79.1% and 79%, respectively. The associated sample results are qualified as estimated.

LCS/LCSD BH80509 displayed a recovery less than the lower control limit for selenium at 75.1%. The associated field blank sample result is qualified as "UJ".

CRDL standard Y8H1339 displayed recoveries outside of control limits for selenium at 331% and zinc (no recovery). The associated field blank sample results are qualified as estimated.

ICP interference check sample Y8H1041 displayed recoveries less than the lower control limit for selenium at 75.8%. The associated sample results are qualified as estimated.

CRDL standard Y8H0922 displayed recoveries outside of control limits for lead at 149%, selenium at 69.6%, and zinc at 147%. The associated sample results near the reporting limit are qualified as estimated.

Preparation blank sample BH80590-BLK1 displayed a positive detection for arsenic at 1.34 mg/kg. The associated sample results are qualified as "U" at the sample concentration.

CRDL standard Y8H1410 exhibited a recovery less than the lower control limit for arsenic at 62.1% and a recovery greater than the upper control limit for zinc at 190%. The associated arsenic sample results are qualified as "UJ".

LCS BH80509 displayed a recovery less than the lower control limit for selenium at 75.1%. The associated field blank sample result is qualified as "UJ".

MS sample LB13_5-6 displayed a recovery less than the lower control limit for silver at 27.9%. The associated sample results are qualified as "UJ".

Laboratory duplicate sample LB13_5-6 displayed a RPD greater than the control limit for lead at 36.4%. The associated sample results are qualified as estimated.

ICP serial dilution sample LB13_5-6 displayed %Ds greater than the control limit for lead and zinc at 18.8% and 31.2%. The associated sample results are qualified as "J".

Preparation blank sample BH81039 displayed a positive detection for selenium at 0.04 mg/L. The associated field blank sample result is qualified as "U" at the sample concentration.

CRDL standard Y8H2238 exhibited a recovery less than the lower control limit for arsenic at 30.9%. The associated field blank sample result is qualified as "UJ".

LCS/LCSD BH81080 exhibited recoveries less than the lower control limit for arsenic, beryllium, and selenium at 77.2%, 61.1%, and 53.2%, respectively. The associated equipment blank sample results are qualified as "UJ".

Preparation blank sample Y8I0622 displayed a positive detection for zinc at 4.69 ug/L. The associated field blank sample result is qualified as "U" at the sample concentration.

Preparation blank sample Y8J0110 displayed a positive detection for zinc at 21.4 ug/L. The associated field blank sample result is qualified as "U" at the sample concentration.

CRDL standard Y8H2702 exhibited a recovery less than the lower control limit for arsenic at 55.8%. The associated soil sample results are qualified as "J".

Cyanide by SW-846 Method 9014/9010C:

MS sample LB01_4-5 exhibited a recovery less than the lower control limit at 59.6%. The associated sample result is qualified as "UJ".

MS sample LB08_51-52 exhibited a recovery less than the lower control limit at 69.1%. The associated sample results are qualified as "UJ".

MS sample LB24_1-2 exhibited a recovery less than the lower control limit at 67%. The associated sample results are qualified as "UJ".

CrVI by SW-846 Method 7196A:

Sample SBEB01_080718 was analyzed approximately 5 hours outside of the holding time period. The associated sample result is qualified as "UJ".

MS sample LB15_5-6 exhibited a recovery less than the lower control limit at 53.2%. The associated soil sample results are qualified as "UJ".

BOD by SM5210B:

BOD was analyzed approximately 6 hours past the 5day holding time period. The associated sample results are qualified as estimated.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

LCS/LCSD BH80615-BS1 displayed recoveries greater than the upper control limit for vinyl chloride at 137% and 143%, and chloroethane at 152%. The associated sample results were non-detect; qualification is not necessary.

The continuing calibration analyzed on 8/13/18 at 15:23 displayed %Ds greater than the control limit with positive biases for chloroethane, chloromethane, tetrachloroethene, and vinyl chloride. The associated sample results were non-detect; qualification is not necessary.

The continuing calibration analyzed on 8/14/18 at 09:53 displayed a %D greater than the control limit with a positive bias for chloroethane. The associated sample results were non-detect; qualification is not necessary.

Field blank sample SBEB02_080818 exhibited a positive detection for acetone at 1.53 ug/L. The associated soil sample results were orders of magnitude greater than the blank amount; qualification is not necessary.

LCS/LCSD BH80946 exhibited a RPD greater than the control limit for 1,4-dioxane at 41.7%. The associated equipment blank sample result was non-detect; qualification is not necessary.

Retention time differences for surrogate spikes were miscalculated by the laboratory on Form II for samples LB12_29-30 and LB19_34.5-35.5 because the calibration mean retention time was not populated. The retention time differences are acceptable.

LCS/LCSD BH81071 exhibited recoveries greater than the upper control limit for chloroethane and vinyl chloride. The associated sample results were non-detect; qualification is not necessary.

Method blank sample BH81071 exhibited a positive response for 1,2,3-trichlorobenzene. The associated sample results were non-detect; qualification is not necessary.

Equipment blank sample SBEB07_081518 exhibited a positive detection for acetone at 1.17 ug/L. The associated soil sample result was more than an order of magnitude greater than the blank amount; qualification is not necessary.

LCS/LCSD BH80946 displayed a %RPD greater than the control limit for 1,4-dioxane at 41.7%. The associated sample result was non-detect; qualification is not necessary.

The continuing calibration analyzed on 8/3/18 at 14:46 displayed %Ds greater than the control limit with positive biases for 1,1-DCE and 1,4-dioxane. The associated equipment blank sample result was non-detect; qualification is not necessary.

Equipment blank sample SBEB08_082018 exhibited a positive detection for acetone at 4.08 ug/L. The associated soil sample results were orders of magnitude greater than the blank amount; qualification is not necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM:

LCS/LCSD BH80571 displayed a recovery greater than the upper control limit for pentachlorophenol at 159%. The associated equipment blank sample result was non-detect; qualification is not necessary.

Sample SBEB03_080918 displayed a surrogate recovery less than the lower control limit for phenol-d5 at 10.5%. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Sample SBEB04_081018 displayed a surrogate recovery less than the lower control limit for phenol-d5 at 13.5%. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Sample SBEB02_080818 displayed a surrogate recovery less than the lower control limit for phenol-d5 at 10.7%. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Second source calibration verification Y8H0907 displayed a %D greater than the control limit with a positive bias for pentachlorophenol. The associated sample results were non-detect; qualification is not necessary.

Sample LB14_4-5 displayed a surrogate recovery greater than the upper control limit for 2,4,6-tribromophenol at 112%. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Sample SBEB06_081418 displayed a surrogate recovery less than the lower control limit for phenol-d5 at 13.5%. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Second-source calibration verification sample Y8H0907 displayed a %D greater than the control limit with a positive bias for pentachlorophenol. The associated sample result was non-detect; qualification is not required.

Samples LB10_2-3, LB10_31-32, LB20_5-6, LB20_32.5-33.5, and LB20_47-48 displayed surrogate recoveries greater than the upper control limit for 2,4,6-tribromophenol. The remaining two acid extractable surrogates recovered within control; on the basis of professional judgment, qualification is not necessary.

Pesticides by SW-846 Method 8081B:

LCS BH80691 displayed recoveries greater than the upper control limit for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-BHC, alpha-chlordane, beta-BHC, delta-BHC, endosulfan I, endosulfan sulfate, endrin, gamma-BHC, and heptachlor. The associated positive detections were previously qualified; no further action is necessary.

LCS BH80691 displayed recoveries greater than the upper control limit for alpha-BHC, beta-BHC, and delta-BHC. The associated sample results were non-detect; qualification is not necessary.

LCS/LCSD BH80463 displayed a recovery greater than the upper control limit for 4,4'-DDD at 145%. The associated sample results were non-detect; qualification is not necessary.

LCS/LCSD BH80692 displayed recoveries greater than the upper control limit for delta-BHC and endrin. The associated sample results were non-detect; qualification is not necessary.

LCS/LCSD BH80721 displayed recoveries greater than the upper control limit for alpha-BHC, beta-BHC, and delta-BHC. The associated sample results were non-detect; qualification is not necessary.

LCS/LCSD BH80834 displayed a recovery greater than the upper control limit for delta-BHC. The associated sample results were non-detect; qualification is not necessary.

LCS/LCSD BH80796 displayed recoveries greater than the upper control limit for alpha-BHC, delta-BHC, endosulfan I, and gamma-BHC. The associated sample results were non-detect; qualification is not necessary.

PCBs by SW-846 Method 8082A:

Samples LB26_6-7, LB09_6-7, LB16_5-6, LB21_5-6, LB24_1-2, and SBEB04_081018 displayed a retention time shift for the surrogate spikes TCMX and DCB. On the basis of professional judgment, qualification is not necessary.

LCS/LCSD BH80721 exhibited a recovery greater than the upper control limit for Aroclor 1260 on the primary chromatography column. The associated equipment blank sample result was non-detect; qualification is not required.

Sample SBEB02_080818 displayed a retention time shift for the surrogate spikes TCMX and DCB. On the basis of professional judgment, qualification is not necessary.

Samples SBEB05_081318, LB11_4.5-5.5, LB13_5-6, LB14_4-5, LB23_4-5 and SBDUP02_081318 displayed a retention time shift for the surrogate spikes TCMX and DCB. On the basis of professional judgment, qualification is not necessary.

Sample SBEB06_081418 and LB15_5-6 displayed a retention time shift for the surrogate spikes TCMX and DCB. On the basis of professional judgment, qualification is not necessary.

Sample SBEB07_081518 displayed a retention time shift for the surrogate spikes TCMX and DCB. On the basis of professional judgment, qualification is not necessary.

LCS/LCSD BH81010 exhibited a recovery greater than the upper control limit for Aroclor 1260 on the secondary chromatography column. The associated equipment blank sample result was non-detect; qualification is not required.

Metals by SW-846 Methods 6010C and 6020A:

Field blank sample SBEB03_080918 displayed a positive detection for zinc at 5.05 ug/L. The associated soil sample result was orders of magnitude greater than the blank amount; qualification is not required.

Field blank sample SBEB01_080718 displayed positive detections for chromium, copper, manganese, nickel, and zinc. The associated sample results were orders of magnitude greater than the blank amount; qualification is not required.

CRDL standard Y8H1348 exhibited recoveries greater than the upper control limit for lead, nickel, and zinc. The associated sample results were substantially above the reporting limit; on the basis of professional judgment, qualification is not necessary.

Preparation blank sample BH80673 displayed a positive detection for zinc at 2.39 ug/L. The associated field blank sample result was greater than 5X the blank amount; on the basis of professional judgment, qualification is not necessary. The field blank also exhibited a positive detection for zinc. The field blank detections for zinc and copper were orders of magnitude less than the associated investigative sample results; qualification is not necessary.

Field blank sample SBEB02_080818 exhibited positive detections for manganese, chromium, copper and zinc. The associated sample results were orders of magnitude greater than the blank amount; qualification is not required.

CRDL standard Y8H1303 exhibited recoveries greater than the upper control limit for arsenic, beryllium, and nickel. The associated sample results were substantially above the reporting limit; on the basis of professional judgment, qualification is not necessary.

Laboratory duplicate sample SBEB08_082018 displayed a RPD greater than the control limit for zinc at 26.1%. The associated sample result was previously qualified on the basis of preparation blank contamination; no further action is necessary.

Cyanide by SW-846 Method 9014/9010C:

Sample SBEB01_080718 displayed a MS recovery less than the lower control limit at 77.5%. The equipment blank should not be used to evaluate sample matrix effects and the results were not used to assess matrix interference.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 50%. The following analytes did not meet the precision criteria:

- SBDUP01_080818 and LB25_15-16: trivalent chromium, arsenic, total chromium, copper, zinc.
- SBDUP02_081318 and LB23_4-5: copper
- SBDUP03_082018 and LB10_2-3: none (the duplicate soil sample was not analyzed for metals, PCBs, pesticides, mercury or cyanide).

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Elizabeth Burgess, Langan Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: June 4, 2019

Re: Data Usability Summary Report
For 41 Kensico Drive
May 2019 Soil Samples
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in May 2019 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals including mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), trivalent chromium (CrIII), and total solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D
- PFAS by USEPA Method 537M
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6010D
- Mercury by SW-846 Method 7471B
- Cyanide by SW-846 Method 9012B
- Hexavalent Chromium by SW-846 Method 7196A
- Trivalent Chromium (calculated)
- Total Solids by Standard Method 2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
19E0157	19E0157-01	LB27_3.5-4.5	5/2/2019	VOCs, SVOCs, PFAS, %S
19E0157	19E0157-02	LB28_3-4	5/2/2019	VOCs, SVOCs, PFAS, %S
19E0157	19E0157-03	SBDUP05_3.5-4.5	5/2/2019	VOCs, SVOCs, PFAS, %S
19E0157	19E0157-04	SBEB10_050219	5/2/2019	VOCs, SVOCs, PFAS
19E0189	19E0189-01	SS1_0-2in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-02	SS1_10-12in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-03	SS2_0-2in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-04	SS2_10-12in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-05	SS3_0-2in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-06	SS3_10-12in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-07	SS4_0-2in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-08	SS4_10-12in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-09	SS5_0-2in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-10	SS5_10-12in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-11	SS6_0-2in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-12	SS6_10-12in	5/3/2019	VOCs, SVOCs, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-13	SS7_0-2in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
19E0189	19E0189-14	SS7_10-12in	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-15	LB18_5-6	5/3/2019	VOCs, SVOCs, %S
19E0189	19E0189-20	SBDUP04_050319	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN, %S
19E0189	19E0189-21	SBEB09_050319	5/3/2019	VOCs, SVOCs, PFAS, pesticides, PCBs, metals, Hg, CrIII, CrVI, CN
19E0244	19E0244-01	LB23_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-02	LB23_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-03	LB23_6-8	5/6/2019	PFAS, Lead (total/TCLP)
19E0244	19E0244-04	LB23_8-10	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-05	LB23_N1_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-06	LB23_N1_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-07	LB23_N1_4-6	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-08	LB23_N1_6-8	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-09	LB23_N2_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-10	LB23_N2_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-11	LB23_N2_4-6	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-13	LB23_E1_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-14	LB23_E1_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-15	LB23_E1_4-6	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-16	LB23_E1_6-8	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-17	LB23_S1_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-18	LB23_S1_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-19	LB23_S1_4-6	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-20	LB23_S1_6-8	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-21	LB23_S2_0-2	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-22	LB23_S2_2-4	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-23	LB23_S2_4-6	5/6/2019	Lead (total/TCLP)
19E0244	19E0244-25	SBEB11_050619	5/6/2019	PFAS, Lead (total/TCLP)
19E0244	19E0244-26	SBDUP06_050619	5/6/2019	Lead (total/TCLP)

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-37A, "Polychlorinated Biphenyl (PCB) Aroclor Data Validation" (June 2015, Revision 0), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), the USEPA Contract Laboratory Program "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for PFOA and PFOS in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, standard isotope recoveries, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LB27_3.5-4.5	8270D	51-28-5	2,4-DINITROPHENOL	UJ
LB27_3.5-4.5	8270D	1912-24-9	ATRAZINE	UJ
LB27_3.5-4.5	8270D	100-52-7	BENZALDEHYDE	UJ
LB27_3.5-4.5	8270D	92-87-5	BENZIDINE	UJ
LB27_3.5-4.5	8270D	65-85-0	BENZOIC ACID	UJ
LB27_3.5-4.5	8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
LB27_3.5-4.5	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LB27_3.5-4.5	8260C	75-01-4	VINYL CHLORIDE	UJ
LB27_3.5-4.5	8270D	56-55-3	BENZO(A)ANTHRACENE	J
LB27_3.5-4.5	8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LB27_3.5-4.5	8260C	107-02-8	ACROLEIN	UJ
LB27_3.5-4.5	8260C	74-83-9	BROMOMETHANE	UJ
LB27_3.5-4.5	8270D	206-44-0	FLUORANTHENE	J
LB27_3.5-4.5	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LB27_3.5-4.5	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LB27_3.5-4.5	8260C	75-00-3	CHLOROETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB27_3.5-4.5	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LB27_3.5-4.5	8270D	85-01-8	PHENANTHRENE	J
LB27_3.5-4.5	8260C	127-18-4	Tetrachloroethylene	UJ
LB27_3.5-4.5	8270D	110-86-1	PYRIDINE	UJ
LB27_3.5-4.5	8270D	129-00-0	PYRENE	J
LB28_3-4	8270D	51-28-5	2,4-DINITROPHENOL	UJ
LB28_3-4	8270D	1912-24-9	ATRAZINE	UJ
LB28_3-4	8270D	100-52-7	BENZALDEHYDE	UJ
LB28_3-4	8270D	92-87-5	BENZIDINE	UJ
LB28_3-4	8270D	65-85-0	BENZOIC ACID	UJ
LB28_3-4	8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
LB28_3-4	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LB28_3-4	8260C	591-78-6	2-HEXANONE	UJ
LB28_3-4	8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LB28_3-4	8260C	67-64-1	ACETONE	J
LB28_3-4	8260C	107-02-8	ACROLEIN	UJ
LB28_3-4	8260C	75-01-4	VINYL CHLORIDE	UJ
LB28_3-4	8260C	75-00-3	CHLOROETHANE	UJ
LB28_3-4	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LB28_3-4	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LB28_3-4	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LB28_3-4	8270D	110-86-1	PYRIDINE	UJ
SBDUP05_3.5-4.5	8270D	51-28-5	2,4-DINITROPHENOL	UJ
SBDUP05_3.5-4.5	8270D	1912-24-9	ATRAZINE	UJ
SBDUP05_3.5-4.5	8270D	100-52-7	BENZALDEHYDE	UJ
SBDUP05_3.5-4.5	8270D	92-87-5	BENZIDINE	UJ
SBDUP05_3.5-4.5	8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
SBDUP05_3.5-4.5	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
SBDUP05_3.5-4.5	8270D	56-55-3	BENZO(A)ANTHRACENE	J
SBDUP05_3.5-4.5	8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
SBDUP05_3.5-4.5	8260C	107-02-8	ACROLEIN	UJ
SBDUP05_3.5-4.5	8260C	74-83-9	BROMOMETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SBDUP05_3.5-4.5	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
SBDUP05_3.5-4.5	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SBDUP05_3.5-4.5	8260C	75-00-3	CHLOROETHANE	UJ
SBDUP05_3.5-4.5	8260C	75-01-4	VINYL CHLORIDE	UJ
SBDUP05_3.5-4.5	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
SBDUP05_3.5-4.5	8270D	206-44-0	FLUORANTHENE	J
SBDUP05_3.5-4.5	8270D	85-01-8	PHENANTHRENE	J
SBDUP05_3.5-4.5	8270D	86-30-6	N-NITROSODIPHENYLAMINE	UJ
SBDUP05_3.5-4.5	8270D	87-86-5	PENTACHLOROPHENOL	UJ
SBDUP05_3.5-4.5	8260C	127-18-4	Tetrachloroethylene	UJ
SBDUP05_3.5-4.5	8270D	110-86-1	PYRIDINE	UJ
SBDUP05_3.5-4.5	8270D	129-00-0	PYRENE	J
SBEB10_050219	8270D	51-28-5	2,4-DINITROPHENOL	UJ
SBEB10_050219	8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
SBEB10_050219	8270D	100-52-7	BENZALDEHYDE	UJ
SBEB10_050219	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
SBEB10_050219	8260C	591-78-6	2-HEXANONE	UJ
SBEB10_050219	8260C	67-64-1	ACETONE	J
SBEB10_050219	8260C	107-02-8	ACROLEIN	UJ
SBEB10_050219	8260C	74-83-9	BROMOMETHANE	UJ
SBEB10_050219	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SBEB10_050219	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
SBEB10_050219	8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
SBEB10_050219	8260C	127-18-4	Tetrachloroethylene	UJ
SBEB10_050219	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
SBEB10_050219	8270D	99-09-2	3-NITROANILINE	UJ
SBEB10_050219	8270DSIM	87-68-3	HEXACHLOROBUTADIENE	UJ
SS1_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS1_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS1_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS1_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS1_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SS1_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS1_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS1_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS1_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS1_0-2IN	8260C	67-64-1	Acetone	J
SS1_0-2IN	8260C	107-02-8	Acrolein	UJ
SS1_0-2IN	6010B	7440-36-0	Antimony	UJ
SS1_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS1_0-2IN	8270D	92-87-5	Benzidine	UJ
SS1_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS1_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS1_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS1_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS1_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS1_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS1_0-2IN	6010B	7440-50-8	Copper	J
SS1_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS1_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS1_0-2IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS1_0-2IN	6010B	7439-92-1	Lead	J
SS1_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS1_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS1_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS1_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS1_0-2IN	E537	1763-23-1	Perfluorooctanesulfonic acid	J
SS1_0-2IN	6010B	7440-22-4	Silver	UJ
SS1_0-2IN	6010B	7440-23-5	Sodium	J
SS1_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS1_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS1_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS1_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS1_0-2IN	6010B	7440-62-2	Vanadium	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS1_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS1_0-2IN	6010B	7440-66-6	Zinc	J
SS1_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS1_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS1_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS1_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS1_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS1_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS1_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS1_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS1_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS1_10-12IN	8260C	67-64-1	Acetone	J
SS1_10-12IN	8260C	107-02-8	Acrolein	UJ
SS1_10-12IN	6010B	7440-36-0	Antimony	UJ
SS1_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS1_10-12IN	8270D	92-87-5	Benzidine	UJ
SS1_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS1_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS1_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS1_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS1_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS1_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS1_10-12IN	6010B	7440-50-8	Copper	J
SS1_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS1_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS1_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	UJ
SS1_10-12IN	6010B	7439-92-1	Lead	J
SS1_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS1_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS1_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS1_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS1_10-12IN	6010B	7440-22-4	Silver	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS1_10-12IN	6010B	7440-23-5	Sodium	J
SS1_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS1_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS1_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS1_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS1_10-12IN	6010B	7440-62-2	Vanadium	J
SS1_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS1_10-12IN	6010B	7440-66-6	Zinc	J
SS2_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS2_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS2_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS2_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS2_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS2_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS2_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS2_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS2_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS2_0-2IN	8260C	67-64-1	Acetone	J
SS2_0-2IN	8260C	107-02-8	Acrolein	UJ
SS2_0-2IN	6010B	7440-36-0	Antimony	UJ
SS2_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS2_0-2IN	8270D	92-87-5	Benzidine	UJ
SS2_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS2_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS2_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS2_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS2_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS2_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS2_0-2IN	6010B	7440-50-8	Copper	J
SS2_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS2_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS2_0-2IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS2_0-2IN	6010B	7439-92-1	Lead	J
SS2_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS2_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS2_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS2_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS2_0-2IN	6010B	7440-22-4	Silver	UJ
SS2_0-2IN	6010B	7440-23-5	Sodium	J
SS2_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS2_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS2_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS2_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS2_0-2IN	6010B	7440-62-2	Vanadium	J
SS2_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS2_0-2IN	6010B	7440-66-6	Zinc	J
SS2_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS2_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS2_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS2_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS2_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS2_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS2_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS2_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS2_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS2_10-12IN	8260C	67-64-1	Acetone	J
SS2_10-12IN	8260C	107-02-8	Acrolein	UJ
SS2_10-12IN	6010B	7440-36-0	Antimony	UJ
SS2_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS2_10-12IN	8270D	92-87-5	Benzidine	UJ
SS2_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS2_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS2_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS2_10-12IN	8260C	75-00-3	Chloroethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS2_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS2_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS2_10-12IN	6010B	7440-50-8	Copper	J
SS2_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS2_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS2_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS2_10-12IN	6010B	7439-92-1	Lead	J
SS2_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS2_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS2_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS2_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS2_10-12IN	6010B	7440-22-4	Silver	UJ
SS2_10-12IN	6010B	7440-23-5	Sodium	J
SS2_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS2_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS2_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS2_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS2_10-12IN	6010B	7440-62-2	Vanadium	J
SS2_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS2_10-12IN	6010B	7440-66-6	Zinc	J
SS3_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS3_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS3_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS3_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS3_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS3_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS3_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS3_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS3_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS3_0-2IN	8260C	67-64-1	Acetone	J
SS3_0-2IN	8260C	107-02-8	Acrolein	UJ
SS3_0-2IN	6010B	7440-36-0	Antimony	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS3_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS3_0-2IN	8270D	92-87-5	Benzidine	UJ
SS3_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS3_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS3_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS3_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS3_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS3_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS3_0-2IN	6010B	7440-50-8	Copper	J
SS3_0-2IN	8081B	58-89-9	Gamma BHC	UJ
SS3_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS3_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS3_0-2IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS3_0-2IN	6010B	7439-92-1	Lead	J
SS3_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS3_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS3_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS3_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS3_0-2IN	E537	1763-23-1	Perfluorooctanesulfonic acid	J
SS3_0-2IN	6010B	7440-22-4	Silver	UJ
SS3_0-2IN	6010B	7440-23-5	Sodium	J
SS3_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS3_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS3_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS3_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS3_0-2IN	6010B	7440-62-2	Vanadium	J
SS3_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS3_0-2IN	6010B	7440-66-6	Zinc	J
SS3_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS3_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS3_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS3_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS3_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS3_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS3_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS3_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS3_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS3_10-12IN	8260C	67-64-1	Acetone	J
SS3_10-12IN	8260C	107-02-8	Acrolein	UJ
SS3_10-12IN	6010B	7440-36-0	Antimony	UJ
SS3_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS3_10-12IN	8270D	92-87-5	Benzidine	UJ
SS3_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS3_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS3_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS3_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS3_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS3_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS3_10-12IN	6010B	7440-50-8	Copper	J
SS3_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS3_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS3_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS3_10-12IN	6010B	7439-92-1	Lead	J
SS3_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS3_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS3_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS3_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS3_10-12IN	6010B	7440-22-4	Silver	UJ
SS3_10-12IN	6010B	7440-23-5	Sodium	J
SS3_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS3_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS3_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS3_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS3_10-12IN	6010B	7440-62-2	Vanadium	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS3_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS3_10-12IN	6010B	7440-66-6	Zinc	J
SS4_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS4_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS4_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS4_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS4_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS4_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS4_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS4_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS4_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS4_0-2IN	8260C	67-64-1	Acetone	UJ
SS4_0-2IN	8260C	107-02-8	Acrolein	UJ
SS4_0-2IN	6010B	7440-36-0	Antimony	UJ
SS4_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS4_0-2IN	8270D	92-87-5	Benzidine	UJ
SS4_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS4_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS4_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS4_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS4_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS4_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS4_0-2IN	6010B	7440-50-8	Copper	J
SS4_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS4_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS4_0-2IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS4_0-2IN	6010B	7439-92-1	Lead	J
SS4_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS4_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS4_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS4_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS4_0-2IN	6010B	7440-22-4	Silver	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS4_0-2IN	6010B	7440-23-5	Sodium	J
SS4_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS4_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS4_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS4_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS4_0-2IN	6010B	7440-62-2	Vanadium	J
SS4_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS4_0-2IN	6010B	7440-66-6	Zinc	J
SS4_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS4_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS4_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS4_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS4_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS4_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS4_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS4_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS4_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS4_10-12IN	8260C	67-64-1	Acetone	J
SS4_10-12IN	8260C	107-02-8	Acrolein	UJ
SS4_10-12IN	6010B	7440-36-0	Antimony	UJ
SS4_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS4_10-12IN	8270D	92-87-5	Benzidine	UJ
SS4_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS4_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS4_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS4_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS4_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS4_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS4_10-12IN	6010B	7440-50-8	Copper	J
SS4_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS4_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS4_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS4_10-12IN	6010B	7439-92-1	Lead	J
SS4_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS4_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS4_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS4_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS4_10-12IN	6010B	7440-22-4	Silver	UJ
SS4_10-12IN	6010B	7440-23-5	Sodium	J
SS4_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS4_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS4_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS4_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS4_10-12IN	6010B	7440-62-2	Vanadium	J
SS4_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS4_10-12IN	6010B	7440-66-6	Zinc	J
SS5_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS5_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS5_0-2IN	8270D	95-94-3	1,2,4,5-Tetrachlorobenzene	UJ
SS5_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS5_0-2IN	8270D	88-06-2	2,4,6-Trichlorophenol	UJ
SS5_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS5_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS5_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS5_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS5_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS5_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS5_0-2IN	8260C	67-64-1	Acetone	UJ
SS5_0-2IN	8260C	107-02-8	Acrolein	UJ
SS5_0-2IN	6010B	7440-36-0	Antimony	UJ
SS5_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS5_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS5_0-2IN	8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
SS5_0-2IN	8270D	111-44-4	Bis(2-Chloroethyl) Ether	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS5_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS5_0-2IN	8260C	75-25-2	Bromoform	UJ
SS5_0-2IN	6010B	7440-70-2	Calcium	J
SS5_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS5_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS5_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS5_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS5_0-2IN	6010B	7440-50-8	Copper	J
SS5_0-2IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS5_0-2IN	8081B	58-89-9	Gamma BHC	UJ
SS5_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS5_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS5_0-2IN	6010B	7439-92-1	Lead	J
SS5_0-2IN	6010B	7439-95-4	Magnesium	J
SS5_0-2IN	8260C	79-20-9	Methyl Acetate	UJ
SS5_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS5_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS5_0-2IN	8270D	621-64-7	N-Nitrosodi-N-Propylamine	UJ
SS5_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS5_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS5_0-2IN	E537	1763-23-1	Perfluorooctanesulfonic acid	J
SS5_0-2IN	6010B	7440-22-4	Silver	UJ
SS5_0-2IN	6010B	7440-23-5	Sodium	J
SS5_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS5_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS5_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS5_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS5_0-2IN	6010B	7440-62-2	Vanadium	J
SS5_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS5_0-2IN	6010B	7440-66-6	Zinc	J
SS5_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS5_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS5_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS5_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS5_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS5_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS5_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS5_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS5_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS5_10-12IN	8260C	67-64-1	Acetone	J
SS5_10-12IN	8260C	107-02-8	Acrolein	UJ
SS5_10-12IN	6010B	7440-36-0	Antimony	UJ
SS5_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS5_10-12IN	8270D	92-87-5	Benzidine	UJ
SS5_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS5_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS5_10-12IN	8260C	75-25-2	Bromoform	UJ
SS5_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS5_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS5_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS5_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS5_10-12IN	6010B	7440-50-8	Copper	J
SS5_10-12IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS5_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS5_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS5_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS5_10-12IN	6010B	7439-92-1	Lead	J
SS5_10-12IN	8260C	79-20-9	Methyl Acetate	UJ
SS5_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS5_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS5_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS5_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS5_10-12IN	E537	1763-23-1	Perfluorooctanesulfonic acid	J
SS5_10-12IN	6010B	7440-22-4	Silver	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS5_10-12IN	6010B	7440-23-5	Sodium	J
SS5_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS5_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS5_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS5_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS5_10-12IN	6010B	7440-62-2	Vanadium	J
SS5_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS5_10-12IN	6010B	7440-66-6	Zinc	J
SS6_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS6_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS6_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS6_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS6_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS6_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS6_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS6_0-2IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS6_0-2IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS6_0-2IN	8260C	67-64-1	Acetone	J
SS6_0-2IN	8260C	107-02-8	Acrolein	UJ
SS6_0-2IN	6010B	7440-36-0	Antimony	UJ
SS6_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS6_0-2IN	8270D	92-87-5	Benzidine	UJ
SS6_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS6_0-2IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS6_0-2IN	8260C	75-25-2	Bromoform	UJ
SS6_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS6_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS6_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS6_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS6_0-2IN	6010B	7440-50-8	Copper	J
SS6_0-2IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS6_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS6_0-2IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS6_0-2IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	J
SS6_0-2IN	6010B	7439-92-1	Lead	J
SS6_0-2IN	8260C	79-20-9	Methyl Acetate	UJ
SS6_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS6_0-2IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS6_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS6_0-2IN	8270D	87-86-5	Pentachlorophenol	UJ
SS6_0-2IN	6010B	7440-22-4	Silver	UJ
SS6_0-2IN	6010B	7440-23-5	Sodium	J
SS6_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS6_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS6_0-2IN	8260C	79-01-6	Trichloroethylene	UJ
SS6_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS6_0-2IN	6010B	7440-62-2	Vanadium	J
SS6_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS6_0-2IN	6010B	7440-66-6	Zinc	J
SS6_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS6_10-12IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS6_10-12IN	8260C	123-91-1	1,4-Dioxane	UJ
SS6_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS6_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS6_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS6_10-12IN	8260C	591-78-6	2-Hexanone	UJ
SS6_10-12IN	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SS6_10-12IN	8270D	101-55-3	4-Bromophenyl Phenyl Ether	UJ
SS6_10-12IN	8260C	67-64-1	Acetone	J
SS6_10-12IN	8260C	107-02-8	Acrolein	UJ
SS6_10-12IN	6010B	7440-36-0	Antimony	UJ
SS6_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS6_10-12IN	8270D	92-87-5	Benzidine	UJ
SS6_10-12IN	6010B	7440-41-7	Beryllium	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS6_10-12IN	8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
SS6_10-12IN	8260C	75-25-2	Bromoform	UJ
SS6_10-12IN	8260C	108-90-7	Chlorobenzene	UJ
SS6_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS6_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS6_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS6_10-12IN	6010B	7440-50-8	Copper	J
SS6_10-12IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS6_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS6_10-12IN	8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SS6_10-12IN	8270D	193-39-5	Indeno(1,2,3-C,D)Pyrene	UJ
SS6_10-12IN	6010B	7439-92-1	Lead	J
SS6_10-12IN	8260C	79-20-9	Methyl Acetate	UJ
SS6_10-12IN	8260C	104-51-8	N-Butylbenzene	UJ
SS6_10-12IN	8270D	62-75-9	N-Nitrosodimethylamine	UJ
SS6_10-12IN	8081B	72-55-9	P,P'-DDE	UJ
SS6_10-12IN	8270D	87-86-5	Pentachlorophenol	UJ
SS6_10-12IN	6010B	7440-22-4	Silver	UJ
SS6_10-12IN	6010B	7440-23-5	Sodium	J
SS6_10-12IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS6_10-12IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS6_10-12IN	8260C	79-01-6	Trichloroethylene	UJ
SS6_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS6_10-12IN	6010B	7440-62-2	Vanadium	J
SS6_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS6_10-12IN	6010B	7440-66-6	Zinc	J
SS7_0-2IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS7_0-2IN	8260C	75-35-4	1,1-Dichloroethene	UJ
SS7_0-2IN	8260C	123-91-1	1,4-Dioxane	UJ
SS7_0-2IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS7_0-2IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS7_0-2IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS7_0-2IN	8270D	91-58-7	2-Chloronaphthalene	UJ
SS7_0-2IN	8260C	591-78-6	2-Hexanone	UJ
SS7_0-2IN	8260C	67-64-1	Acetone	UJ
SS7_0-2IN	8260C	107-02-8	Acrolein	UJ
SS7_0-2IN	6010B	7440-36-0	Antimony	UJ
SS7_0-2IN	8270D	100-52-7	Benzaldehyde	UJ
SS7_0-2IN	8270D	85-68-7	Benzyl Butyl Phthalate	UJ
SS7_0-2IN	6010B	7440-41-7	Beryllium	UJ
SS7_0-2IN	8270D	111-44-4	Bis(2-Chloroethyl) Ether	UJ
SS7_0-2IN	8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	J
SS7_0-2IN	8260C	75-25-2	Bromoform	UJ
SS7_0-2IN	8270D	86-74-8	Carbazole	UJ
SS7_0-2IN	8260C	108-90-7	Chlorobenzene	UJ
SS7_0-2IN	8260C	75-00-3	Chloroethane	UJ
SS7_0-2IN	8260C	74-87-3	Chloromethane	UJ
SS7_0-2IN	6010B	7440-47-3	Chromium, Total	J
SS7_0-2IN	6010B	7440-50-8	Copper	J
SS7_0-2IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS7_0-2IN	8270D	117-84-0	Di-N-Octylphthalate	UJ
SS7_0-2IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS7_0-2IN	6010B	7439-92-1	Lead	J
SS7_0-2IN	8260C	79-20-9	Methyl Acetate	UJ
SS7_0-2IN	8260C	104-51-8	N-Butylbenzene	UJ
SS7_0-2IN	8270D	98-95-3	Nitrobenzene	UJ
SS7_0-2IN	8081B	72-55-9	P,P'-DDE	UJ
SS7_0-2IN	E537	1763-23-1	Perfluorooctanesulfonic acid	J
SS7_0-2IN	8270D	108-95-2	Phenol	UJ
SS7_0-2IN	6010B	7440-22-4	Silver	UJ
SS7_0-2IN	6010B	7440-23-5	Sodium	J
SS7_0-2IN	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SS7_0-2IN	8260C	127-18-4	Tetrachloroethylene	UJ
SS7_0-2IN	8260C	79-01-6	Trichloroethylene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS7_0-2IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS7_0-2IN	6010B	7440-62-2	Vanadium	J
SS7_0-2IN	8260C	75-01-4	Vinyl Chloride	UJ
SS7_0-2IN	6010B	7440-66-6	Zinc	J
SS7_10-12IN	8260C	630-20-6	1,1,1,2-Tetrachloroethane	UJ
SS7_10-12IN	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SS7_10-12IN	8270D	51-28-5	2,4-Dinitrophenol	UJ
SS7_10-12IN	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SS7_10-12IN	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SS7_10-12IN	8270D	91-58-7	2-Chloronaphthalene	UJ
SS7_10-12IN	8260C	67-64-1	Acetone	J
SS7_10-12IN	6010B	7440-36-0	Antimony	UJ
SS7_10-12IN	8270D	100-52-7	Benzaldehyde	UJ
SS7_10-12IN	8270D	85-68-7	Benzyl Butyl Phthalate	UJ
SS7_10-12IN	6010B	7440-41-7	Beryllium	UJ
SS7_10-12IN	8270D	111-44-4	Bis(2-Chloroethyl) Ether	UJ
SS7_10-12IN	8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
SS7_10-12IN	8260C	75-25-2	Bromoform	UJ
SS7_10-12IN	8260C	74-83-9	Bromomethane	UJ
SS7_10-12IN	8270D	86-74-8	Carbazole	UJ
SS7_10-12IN	8260C	56-23-5	Carbon Tetrachloride	UJ
SS7_10-12IN	8260C	75-00-3	Chloroethane	UJ
SS7_10-12IN	8260C	74-87-3	Chloromethane	UJ
SS7_10-12IN	6010B	7440-47-3	Chromium, Total	J
SS7_10-12IN	6010B	7440-50-8	Copper	J
SS7_10-12IN	8260C	124-48-1	Dibromochloromethane	UJ
SS7_10-12IN	8260C	75-71-8	Dichlorodifluoromethane	UJ
SS7_10-12IN	8270D	117-84-0	Di-N-Octylphthalate	UJ
SS7_10-12IN	8270D	87-68-3	Hexachlorobutadiene	UJ
SS7_10-12IN	6010B	7439-92-1	Lead	J
SS7_10-12IN	8270D	98-95-3	Nitrobenzene	UJ
SS7_10-12IN	8081B	72-55-9	P,P'-DDE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SS7_10-12IN	8270D	108-95-2	Phenol	UJ
SS7_10-12IN	6010B	7440-22-4	Silver	UJ
SS7_10-12IN	6010B	7440-23-5	Sodium	J
SS7_10-12IN	8260C	75-69-4	Trichlorofluoromethane	UJ
SS7_10-12IN	6010B	7440-62-2	Vanadium	J
SS7_10-12IN	8260C	75-01-4	Vinyl Chloride	UJ
SS7_10-12IN	6010B	7440-66-6	Zinc	J
LB18_5-6	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
LB18_5-6	8260C	75-35-4	1,1-Dichloroethene	UJ
LB18_5-6	8260C	123-91-1	1,4-Dioxane	UJ
LB18_5-6	8270D	51-28-5	2,4-Dinitrophenol	UJ
LB18_5-6	8270D	121-14-2	2,4-Dinitrotoluene	UJ
LB18_5-6	8270D	606-20-2	2,6-Dinitrotoluene	UJ
LB18_5-6	8270D	91-58-7	2-Chloronaphthalene	UJ
LB18_5-6	8260C	591-78-6	2-Hexanone	UJ
LB18_5-6	8260C	67-64-1	Acetone	J
LB18_5-6	8260C	107-02-8	Acrolein	UJ
LB18_5-6	8270D	100-52-7	Benzaldehyde	UJ
LB18_5-6	8270D	85-68-7	Benzyl Butyl Phthalate	UJ
LB18_5-6	8270D	111-44-4	Bis(2-Chloroethyl) Ether	UJ
LB18_5-6	8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
LB18_5-6	8260C	75-25-2	Bromoform	UJ
LB18_5-6	8270D	86-74-8	Carbazole	UJ
LB18_5-6	8260C	108-90-7	Chlorobenzene	UJ
LB18_5-6	8260C	75-00-3	Chloroethane	UJ
LB18_5-6	8260C	74-87-3	Chloromethane	UJ
LB18_5-6	8260C	75-71-8	Dichlorodifluoromethane	UJ
LB18_5-6	8270D	117-84-0	Di-N-Octylphthalate	UJ
LB18_5-6	8270D	87-68-3	Hexachlorobutadiene	UJ
LB18_5-6	8260C	79-20-9	Methyl Acetate	J
LB18_5-6	8260C	104-51-8	N-Butylbenzene	UJ
LB18_5-6	8270D	98-95-3	Nitrobenzene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LB18_5-6	8270D	108-95-2	Phenol	UJ
LB18_5-6	8260C	75-65-0	Tert-Butyl Alcohol	UJ
LB18_5-6	8260C	127-18-4	Tetrachloroethylene	UJ
LB18_5-6	8260C	79-01-6	Trichloroethylene	UJ
LB18_5-6	8260C	75-69-4	Trichlorofluoromethane	UJ
LB18_5-6	8260C	75-01-4	Vinyl Chloride	UJ
SBDUP04_050319	8260C	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	UJ
SBDUP04_050319	8260C	75-35-4	1,1-Dichloroethene	UJ
SBDUP04_050319	8260C	123-91-1	1,4-Dioxane	UJ
SBDUP04_050319	8270D	51-28-5	2,4-Dinitrophenol	UJ
SBDUP04_050319	8270D	121-14-2	2,4-Dinitrotoluene	UJ
SBDUP04_050319	8270D	606-20-2	2,6-Dinitrotoluene	UJ
SBDUP04_050319	8270D	91-58-7	2-Chloronaphthalene	UJ
SBDUP04_050319	8260C	591-78-6	2-Hexanone	UJ
SBDUP04_050319	8260C	67-64-1	Acetone	J
SBDUP04_050319	8260C	107-02-8	Acrolein	UJ
SBDUP04_050319	6010B	7440-36-0	Antimony	UJ
SBDUP04_050319	8270D	100-52-7	Benzaldehyde	UJ
SBDUP04_050319	8270D	85-68-7	Benzyl Butyl Phthalate	UJ
SBDUP04_050319	6010B	7440-41-7	Beryllium	UJ
SBDUP04_050319	8270D	111-44-4	Bis(2-Chloroethyl) Ether	UJ
SBDUP04_050319	8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
SBDUP04_050319	8260C	75-25-2	Bromoform	UJ
SBDUP04_050319	8270D	86-74-8	Carbazole	UJ
SBDUP04_050319	8260C	108-90-7	Chlorobenzene	UJ
SBDUP04_050319	8260C	75-00-3	Chloroethane	UJ
SBDUP04_050319	8260C	74-87-3	Chloromethane	UJ
SBDUP04_050319	6010B	7440-47-3	Chromium, Total	J
SBDUP04_050319	6010B	7440-50-8	Copper	J
SBDUP04_050319	8260C	75-71-8	Dichlorodifluoromethane	UJ
SBDUP04_050319	8270D	117-84-0	Di-N-Octylphthalate	UJ
SBDUP04_050319	8270D	87-68-3	Hexachlorobutadiene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SBDUP04_050319	6010B	7439-92-1	Lead	J
SBDUP04_050319	8260C	79-20-9	Methyl Acetate	UJ
SBDUP04_050319	8260C	104-51-8	N-Butylbenzene	UJ
SBDUP04_050319	8270D	98-95-3	Nitrobenzene	UJ
SBDUP04_050319	8081B	72-55-9	P,P'-DDE	UJ
SBDUP04_050319	8270D	108-95-2	Phenol	UJ
SBDUP04_050319	6010B	7440-22-4	Silver	UJ
SBDUP04_050319	6010B	7440-23-5	Sodium	J
SBDUP04_050319	8260C	75-65-0	Tert-Butyl Alcohol	UJ
SBDUP04_050319	8260C	127-18-4	Tetrachloroethylene	UJ
SBDUP04_050319	8260C	79-01-6	Trichloroethylene	UJ
SBDUP04_050319	8260C	75-69-4	Trichlorofluoromethane	UJ
SBDUP04_050319	6010B	7440-62-2	Vanadium	J
SBDUP04_050319	8260C	75-01-4	Vinyl Chloride	UJ
SBDUP04_050319	6010B	7440-66-6	Zinc	J
SBEB09_050319	8260C	123-91-1	1,4-Dioxane	UJ
SBEB09_050319	8270D	51-28-5	2,4-Dinitrophenol	UJ
SBEB09_050319	8260C	591-78-6	2-Hexanone	UJ
SBEB09_050319	8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SBEB09_050319	8260C	67-64-1	Acetone	UJ
SBEB09_050319	8260C	107-02-8	Acrolein	UJ
SBEB09_050319	8270DSIM	1912-24-9	Atrazine	UJ
SBEB09_050319	8270D	100-52-7	Benzaldehyde	UJ
SBEB09_050319	8260C	74-83-9	Bromomethane	UJ
SBEB09_050319	8260C	74-87-3	Chloromethane	UJ
SBEB09_050319	8260C	75-71-8	Dichlorodifluoromethane	UJ
SBEB09_050319	8270D	117-84-0	Di-N-Octylphthalate	UJ
SBEB09_050319	8260C	78-93-3	2-Butanone	UJ
SBEB09_050319	8081B	72-55-9	P,P'-DDE	UJ
SBEB09_050319	6010B	7440-09-7	Potassium	U (0.119)
SBEB09_050319	8260C	127-18-4	Tetrachloroethylene	UJ
LB23_8-10	6010B	7439-92-1	Lead, TCLP	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LB23_N1_0-2	6010B	7439-92-1	Lead, TCLP	J
LB23_N1_2-4	6010B	7439-92-1	Lead, TCLP	J
LB23_N2_0-2	6010B	7439-92-1	Lead, TCLP	UJ
LB23_N2_2-4	6010B	7439-92-1	Lead, TCLP	J
LB23_N2_4-6	6010B	7439-92-1	Lead, TCLP	J
LB23_E1_0-2	6010B	7439-92-1	Lead, TCLP	J
LB23_E1_2-4	6010B	7439-92-1	Lead, TCLP	J
LB23_S1_0-2	6010B	7439-92-1	Lead, TCLP	J
LB23_S1_2-4	6010B	7439-92-1	Lead, TCLP	J
LB23_S1_6-8	6010B	7439-92-1	Lead	J
LB23_S2_0-2	6010B	7439-92-1	Lead, TCLP	J
LB23_S2_2-4	6010B	7439-92-1	Lead, TCLP	J
LB23_S2_4-6	6010B	7439-92-1	Lead, TCLP	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

<u>19E0157:</u>

The laboratory control sample and duplicate (LCS/LCSD) for batch BE90297 exhibited percent recoveries below the lower control limit (LCL) for tetrachloroethylene (69.9%, 65.2%). The associated results in sample SBEB10_050219 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch BE90412 exhibited percent recoveries below the LCL for tetrachloroethylene (75.9%, 77.7%). The associated results in sample LB27_3.5-4.5 and SBDUP05_3.5-4.5 are qualified as "UJ" based on potential low bias.

The initial calibration (ICAL) for instrument MS VOA 2 exhibited a relative standard deviation (RSD) above the control limit for 1,4-dioxane (33.7%). The associated results in sample LB27_3.5-4.5, LB28_3-4, and SBDUP05_3.5-4.5 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) analyzed on 4/22/2019 at 21:51 exhibited percent differences (%Ds) above the control limit for acrolein (-49.7%), dichlorodifluoromethane (51.6%), and vinyl chloride (31.1%). The associated results in sample LB27_3.5-4.5, LB28_3-4, and SBDUP05_3.5-4.5 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/1/2019 at 21:11 exhibited %Ds above the control limit for 1,4-dioxane (30.1%), acrolein (-49.8%), and dichlorodifluoromethane (36.5%). The associated results in sample SBEB10_050219 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 5/6/2019 at 9:46 exhibited %Ds above the control limit for 2-butanone (38.2%), 2-hexanone (45.6%), acetone (42.7%), and bromomethane (-28.6%). The associated results in sample SBEB10_050219 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/7/2019 at 22:57 exhibited %Ds above the control limit for bromomethane (26.1%), chloroethane (24.6%), and trichlorofluoromethane (21.8%). The associated results in sample LB27_3.5-4.5 and SBDUP05_3.5-4.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/8/2019 at 10:06 exhibited %Ds above the control limit for 2-hexanone (22.8%), and acetone (53.6%), chloroethane (21.8%), trichlorofluoromethane (22.9%). The associated results in sample LB28_3-4 are qualified as "J" or "UJ" based on potential indeterminate bias.

<u>19E0189:</u>

The LCS for batch BE90476 exhibited a percent recovery below the LCL for bromoform (71.8%). The associated results in sample LB18_5-6, SBDUP04_050319, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, and SS7_0-2IN are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch BE90476 exhibited a relative percent difference (RPD) above the control limit for acrolein (55.9%), chloroethane (61.8%), and dichlorodifluoromethane (63.4%). The associated results in sample LB18_5-6, SBDUP04_050319, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, and SS7_0-2IN are qualified as "UJ" based on potential indeterminate bias.

The LCS/LCSD for batch BE90592 exhibited percent recoveries below the LCL for tetrachloroethylene (68.3%, 68.7%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential low bias.

The ICAL for instrument QVOA4 exhibited response factors (RFs) below the control limit for chlorobenzene (0.459), tetrachloroethene (0.199), and trichloroethene (0.175). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, SS7_0-2IN, LB18_5-6, and SBDUP04_050319, are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/1/2019 at 21:11 exhibited %Ds above the control limit for 1,4-dioxane (30.1%), acrolein (-49.8%), and dichlorodifluoromethane (36.5%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 4/8/2019 at 18:47 exhibited %Ds above the control limit for 1,4-dioxane (-79.8%) and tert-butyl alcohol (-79.3%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, SS7_0-2IN, LB18_5-6, and SBDUP04_050319, are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/8/2019 at 18:43 exhibited %Ds above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (258%), bromomethane (240%), chloroethane (232%), chloromethane (204%), dichlorodifluoromethane (424%), trichlorofluoromethane (258%), and vinyl chloride (296%). The associated results in sample SS7_10-12IN are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/9/2019 at 10:53 exhibited %Ds above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (134%), 1,1-dichloroethene (21.7%), 2-hexanone (22.6%), acetone (37.7%), chloromethane (69%), methyl acetate (20.3%), n-butylbenzene (24.3%), trichlorofluoromethane (52.2%), and vinyl chloride (38.2%). The associated results in sample LB18_5-6, SBDUP04_050319, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, and SS7_0-2IN are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/9/2019 at 22:45 exhibited %Ds above the control limit for 2-butanone (45.6%), 2-hexanone (33.8%), acetone (48%), bromomethane (-61.8%), and chloromethane (-27.3%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/8/2019 at 13:41 exhibited %Ds above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (146%), 1,1-dichloroethene (22.9%), 2-hexanone (25.5%), acetone (41.6%), acrolein (237%), chloroethane (41%), chloromethane (50.4%), n-butylbenzene (26.7%), trichlorofluoromethane (60.2%), and vinyl chloride (48.7%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, and SS4_10-12IN are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 7:44 exhibited %Ds above the control limit for 1,1,1,2-tetrachloroethane (21.3%), acetone (55.9%), bromoform (32.9%), carbon tetrachloride (27.4%), and dibromochloromethane (22.6%). The associated results in sample SS7_10-12IN are qualified as "J" or "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D:

<u>19E0157:</u>

The field duplicate and parent sample (SBDUP05_3.5-4.5 and LB27_3.5-4.5) exhibited absolute differences above the RL for benzo(a)anthracene (0.0993 mg/kg), fluoranthene (0.187 mg/kg), phenanthrene (0.151 mg/kg), and pyrene (0.152 mg/kg). The associated results are qualified as "J" based on potential indeterminate bias.

The ICAL for instrument BNA #7 exhibited a RSD above the control limit for pyridine (28.3%). The associated results in sample LB27_3.5-4.5, LB28_3-4, and SBDUP05_3.5-4.5 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/4/2019 at 16:14 exhibited %Ds above the control limit for 2,4-dinitrophenol (65.8%) and 4,6-dinitro-2-methylphenol (44.2%). The associated results in sample SBEB10_050219 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/8/2019 at 15:38 exhibited %Ds above the control limit for 2,4-dinitrophenol (37.5%), atrazine (-41.7%), benzaldehyde (-29.1%), benzidine (-65.8%), benzoic acid (26.2%), benzyl butyl phthalate (23.2%), bis(2-ethylhexyl) phthalate (25%), and di-n-octyl phthalate (52.9%). The associated results in sample LB27_3.5-4.5 and LB28_3-4 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 8:29 exhibited %Ds above the control limit for 3-nitroaniline (25.5%), benzaldehyde (-43.5%), di-n-octyl phthalate (43%), and hexachlorocyclopentadiene (25.1%). The associated results in sample SBEB10_050219 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/9/2019 at 8:32 exhibited %Ds above the control limit for 2,4-dinitrophenol (28%), atrazine (-41.3%), benzaldehyde (-27.6%), benzidine (-53.4%), benzyl butyl phthalate (24.7%), bis(2-ethylhexyl) phthalate (26.9%), di-n-octyl phthalate (56.1%), n-nitrosodimethylamine (23.3%), and pentachlorophenol (-28.4%). The associated results in sample SBDUP05_3.5-4.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 8:01 exhibited a %D above the control limit for hexachlorobutadiene (52.6%). The associated results in sample SBEB10_050219 are qualified as "UJ" based on potential indeterminate bias.

<u>19E0189:</u>

The ICV analyzed on 5/4/2019 at 15:49 exhibited %Ds above the control limit for 2,4-dinitrophenol (50.8%) and 2,6-dinitrotoluene (34.7%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, and SS6_10-12IN are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/4/2019 at 16:14 exhibited %Ds above the control limit for 2,4-dinitrophenol (65.8%) and 4,6-dinitro-2-methylphenol (44.2%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/4/2019 at 18:34 exhibited a %D above the control limit for 2,4-dinitrophenol (62.3%). The associated results in sample SS7_0-2IN, SS7_10-12IN, LB18_5-6, and SBDUP04_050319 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 9:35 exhibited %Ds above the control limit for 1,2,4,5-tetrachlorobenzene (21.9%), 2,4,6-trichlorophenol (23.7%), 2,4-dinitrotoluene (28.3%), 4,6-dinitro-2-methylphenol (65%), 4-bromophenyl phenyl ether (25.3%), benzaldehyde (-31.4%), bis(2-chloroethoxy)methane (-24.5%), bis(2-chloroethyl)ether (-27%), bis(2-chloroisopropyl)ether (-55.4%), hexachlorobutadiene (33%), hexachlorocyclopentadiene (35.9%), n-nitrosodimethylamine (-29.8%), n-nitroso-di-n-propylamine (-25.2%), and pentachlorophenol (57.9%). The associated results in sample SS5_0-2IN are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 14:54 exhibited %Ds above the control limit for benzaldehyde (-27%) and di-n-octyl phthalate (38.9%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 14:40 exhibited %Ds above the control limit for 2,4-dinitrotoluene (61.9%), 4,6-dinitro-2-methylphenol (82.7%), 4-bromophenyl phenyl ether (32.8%), benzaldehyde (-26.8%), benzidine (-50.5%), bis(2-chloroisopropyl)ether (-46.7%), hexachlorobutadiene (60.4%), hexachlorocyclopentadiene (55.3%), indeno(1,2,3-cd)pyrene (31.7%), n-nitrosodimethylamine (-25.6%), and pentachlorophenol (66.1%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_10-12IN, SS6_0-2IN, and SS6_10-12IN are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 14:36 exhibited %Ds above the control limit for 2,4-dinitrotoluene (36.5%), 2,6-dinitrotoluene (38.5%), 2-chloronaphthalene (27.1%), benzaldehyde (-24.8%), benzyl butyl phthalate (31.2%), bis(2-chloroethyl)ether (37.7%), bis(2-ethylhexyl)phthalate (33.2%), carbazole (21.8%), di-n-octyl phthalate (53.6%), hexachlorobutadiene (29.1%), nitrobenzene (25.8%), and phenol (22.8%). The associated results in sample SS7_0-2IN, SS7_10-12IN, LB18_5-6, and SBDUP04_050319 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 17:09 exhibited a %D above the control limit for atrazine (46%). The associated results in sample SBEB09_050319 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M:

19E0189:

The LCS for batch BE90415 exhibited a percent recovery above the upper control limit (UCL) for perfluorooctanesulfonic acid (131%). The associated results in sample SS1_0-2IN, SS3_0-2IN, SS5_0-2IN, SS5_10-12IN, and SS7_0-2IN are qualified as "J" based on potential high bias.

Pesticides by SW-846 Method 8081B:

19E0189:

The ICAL for instrument GC Dual E exhibited a RSD above the control limit for 4,4'-DDE (20.2%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, SS7_0-2IN, SS7_10-12IN, SBDUP04_050319, and SBEB09_050319 from the primary gas chromatography (GC) column are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/14/2019 at 10:40 exhibited a %D above the control limit for gamma-BHC (21.7%). The associated results in sample SS3_0-2IN and SS5_0-2IN from the primary GC column are qualified as "UJ" based on potential indeterminate bias.

Metals by SW-846 Method 6010D:

19E0189:

The laboratory duplicate and parent sample (SS5_0-2IN) exhibited a RPD above the control limit for magnesium (40.8%) and calcium (46.7%). The associated results are qualified as "J" based on potential indeterminate bias.

The MS for batch BE90359 exhibited percent recoveries below the LCL for lead (53.8%), silver (19.4%), antimony (47.7%), beryllium (73.9%), chromium (74.2%), copper (53.1%), vanadium (71.9%), and zinc (54.4%). The associated results in sample SBDUP04_050319, SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, SS7_0-2IN, and SS7_10-12IN are qualified as "J" or "UJ" based on potential low bias.

The CCV analyzed on Y9E3022-CCVD exhibited a percent recovery above the UCL for sodium (111%). The associated results in sample SS1_0-2IN, SS1_10-12IN, SS2_0-2IN, SS2_10-12IN, SS3_0-2IN, SS3_10-12IN, SS4_0-2IN, SS4_10-12IN, SS5_0-2IN, SS5_10-12IN, SS6_0-2IN, SS6_10-12IN, SS7_0-2IN, and SS7_10-12IN are qualified as "J" based on potential high bias.

The CCV analyzed on Y9E3022-CCVE exhibited a percent recovery above the UCL for sodium (114%). The associated results in sample SBDUP04_050319 are qualified as "J" based on potential high bias.

The continuing calibration blank (CCB) (Y9E0830-CCBC) exhibited a detection of potassium (0.15 ug/mL). The associated results in sample SBEB09_050319 are qualified as "U" at the sample concentration based on potential blank contamination.

19E0244:

The laboratory duplicate and parent sample (LB23_S1_6-8) exhibited a RPD above the control limit for lead (37%). The associated results are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on Y9F0308-CCVC exhibited a percent recovery below the LCL for lead (TCLP) (77.3%). The associated results in sample LB23_8-10, LB23_N1_0-2, LB23_N1_2-4, LB23_N2_0-2, LB23_N2_2-4, LB23_N2_4-6, LB23_E1_0-2, LB23_E1_2-4, LB23_S1_0-2, LB23_S1_2-4, LB23_S2_0-2, LB23_S2_2-4, and LB23_S2_4-6 are qualified as "J" or "UJ" based on potential low bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

<u>19E0157:</u>

The method blank (MB) for batch BE90297 exhibited a detection of methylene chloride (1.67 ug/L). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch BE90412 exhibited percent recoveries above the UCL for vinyl chloride (140%, 138%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch BE90412 exhibited a RPD above the control limit for trans-1,3-dichloropropene (40.3%) and 1,2,3-trichlorobenzene (48%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MSD for batch BE90412 exhibited a percent recovery below the LCL for acrolein (13.8%). Organic results are not qualified on the basis of MSDs alone. No qualification is necessary.

The LCS/LCSD for batch BE90464 exhibited percent recoveries above the UCL for vinyl chloride (144%, 139%). The associated results are non-detections. No qualification is necessary.

The field blank (FB) (SBEB10_050219) exhibited a detection of acetone (1.79 ug/L). The associated results are non-detections. No qualification is necessary.

The ICV analyzed on 4/22/2019 at 21:51 exhibited a %D above the control limit for 1,4-dioxane (60.7%). The associated results were previously qualified. No further action is necessary.

The ICV analyzed on 5/1/2019 at 21:11 exhibited a %D above the control limit for tetrachloroethylene (-32.9%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/6/2019 at 9:46 exhibited a %D above the control limit for tetrachloroethylene (-24%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/7/2019 at 22:57 exhibited %Ds above the control limit for 1,4-dioxane (63.1%) and acrolein (-51.4%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/8/2019 at 10:06 exhibited %Ds above the control limit for 1,4-dioxane (47%), acrolein (-46.9%), dichlorodifluoromethane (-21.3%). The associated results were previously qualified. No further action is necessary.

<u>19E0189:</u>

The LCS for batch BE90476 exhibited percent recoveries above the UCL for chloromethane (148%), vinyl chloride (153%), trichlorofluoromethane (151%), and 1,1,2-trichloro-1,2,2-trifluoroethane (151%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch BE90476 exhibited percent recoveries below the LCL for methylcyclohexane (51.1%, 53.4%), cyclohexane (58%, 64.1%), 1,2-dibromo-3-chloropropane (33.6%, 30.4%), 1,2-dibromoethane (39.8%), and bromoform (26.5%, 17.5%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS/MSD for batch BE90476 exhibited percent recoveries above the UCL for chloromethane (262%, 287%), vinyl chloride (265%, 327%), trichlorofluoromethane (267%, 340%), dichlorodifluoromethane (205%, 251%), and 1,1,2-trichloro-1,2,2-trifluoroethane (267%, 341%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS/MSD for batch BE90476 exhibited a RPD above the control limit for styrene (72.3%), cis-1,3-dichloropropene (93.9%), trans-1,3-dichloropropene (69%), acrylonitrile (95.9%), 4-methyl-2-pentanone (121%), 1,2,4-trichlorobenzene (52.9%), 2-hexanone (157%), bromomethane (57.9%), chloroethane (110%), 2-butanone (108%), 1,2,3-trichlorobenzene (55.4%), and hexachlorobutadiene (67.8%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The LCS for batch BE90639 exhibited percent recoveries above the UCL for chloromethane (136%), vinyl chloride (134%), trichlorofluoromethane (147%), and 1,1,2-trichloro-1,2,2-trifluoroethane (147%). The associated results are non-detections. No qualification is necessary.

The ICV analyzed on 5/1/2019 at 21:11 exhibited a %D above the control limit for tetrachloroethene (-32.9%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/9/2019 at 10:53 exhibited %Ds above the control limit for 1,4-dioxane (-65.2%), acrolein (109%), chloroethane (65.1%), dichlorodifluoromethane (-23.3%), and tert-butyl alcohol (-74.5%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/9/2019 at 22:45 exhibited %Ds above the control limit for 1,4-dioxane (41.6%), acrolein (21.6%), and dichlorodifluoromethane (-24.9%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/8/2019 at 13:41 exhibited %Ds above the control limit for 1,4-dioxane (-66.5%) and tert-butyl alcohol (-74.7%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D:

19E0157:

The LCS for batch BE90460 exhibited a percent recovery above the UCL for di-n-octylphthalate (146%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch BE90460 exhibited a RPD above the control limit for anthracene (30.2%), pyrene (41.8%), benzo(g,h,i)perylene (48.1%), indeno(1,2,3-c,d)pyrene (47.6%), benzo(b)fluoranthene (50%), fluoranthene (39.6%), benzo(k)fluoranthene (50.5%), chrysene (46.9%), benzo(a)pyrene (51.3%), dibenz(a,h)anthracene (38.8%), benzo(a)anthracene (48.8%), hexachlorocyclopentadiene (30.4%), and acenaphthene (31.9%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MSD for batch BE90460 exhibited a percent recovery below the LCL for phenanthrene (31.9%). Organic results are not qualified on the basis of MSDs alone. No qualification is necessary.

The LCS/LCSD for batch BE90532 exhibited percent recoveries above the UCL for 2,3,4,6-tetrachlorophenol (172%, 168%). The associated results are non-detections. No qualification is necessary.

The ICV analyzed on 4/29/2019 at 15:38 exhibited a %D above the control limit for pyridine (-43.2%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/10/2019 at 8:29 exhibited %Ds above the control limit for 2,4-dinitrophenol (65.6%) and 4,6-dinitro-2-methylphenol (44.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/9/2019 at 8:32 exhibited a %D above the control limit for pyridine (-27%). The associated results were previously qualified. No further action is necessary.

<u>19E0189:</u>

The LCS/LCSD for batch BE90532 exhibited percent recoveries above the UCL for 2,3,4,6-tetrachlorophenol (172%, 168%). The associated results are non-detections. No qualification is necessary.

The LCS for batch BE90594 exhibited a percent recovery above the UCL for 2,3,4,6-tetrachlorophenol (131%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch BE90594 exhibited percent recoveries above the UCL for 2,3,4,6-tetrachlorophenol (136%, 136%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The LCS for batch BE90618 exhibited a percent recovery above the UCL for 2,3,4,6-tetrachlorophenol (134%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 5/10/2019 at 9:35 exhibited a %D above the control limit for 2,4-dinitrophenol (81.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/10/2019 at 14:54 exhibited %Ds above the control limit for 2,4-dinitrophenol (56.3%) and 4,6-dinitro-2-methylphenol (44.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/10/2019 at 14:40 exhibited %Ds above the control limit for 2,4-dinitrophenol (110%) and 2,6-dinitrotoluene (67%). The associated results were previously qualified. No further action is necessary.

PFAS by USEPA Method 537M:

<u>19E0157:</u>

The LCS for batch BE90321 exhibited a percent recovery above the UCL for perfluorooctanesulfonic acid (132%). The associated results are non-detections. No qualification is necessary.

19E0244:

The LCS for batch BE90415 exhibited a percent recovery above the UCL for perfluorooctanesulfonic acid (131%). The associated results are non-detections. No qualification is necessary.

Metals by SW-846 Method 6010D:

19E0189:

The MB for batch BE90359 exhibited a detection of potassium (7.2 mg/kg). The associated results are greater than ten times the contamination. No qualification is necessary.

The MS/MSD for batch BE90359 exhibited percent recoveries below the LCL for aluminum (-914%), iron (-3350%), magnesium (-1800%), manganese (-3.48%), potassium (-236%), and calcium (-2270%). The associated results in the parent sample are greater than four times the spiked amount. No qualification is necessary.

The MB for batch BE90367 exhibited a detection of aluminum (0.126 mg/L). The associated results are non-detections. No qualification is necessary.

The FB (SBEB09_050319) exhibited a detection of potassium (0.119 mg/L). The associated results are non-detections. No qualification is necessary.

The field duplicate and parent sample (SBDUP04_050319 and SS1_10-12IN) exhibited a RPD above the control limit for lead (138%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on Y9E0830-CCVC exhibited percent recoveries above the UCL for aluminum (112%) and sodium (112%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on Y9E0830-CCVC exhibited a percent recovery above the UCL for potassium (114%). The associated results were previously qualified. No further action is necessary.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 50% for soil. The following field duplicate and parent sample pairs were compared to the precision criteria:

- SBDUP04_050319 and SS1_10-12in
- SBDUP05_3.5-4.5 and LB27_3.5-4.5
- SBDUP06_050619 and LB23_0-2

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Tyler Chow, Langan Project Manager

From: Emily Strake, Langan Senior Project Chemist

Date: October 16, 2018

Re: Data Usability Summary Report
For 41 Kensico Drive
Groundwater Samples Collected in September, 2018
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in 2018 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAC registration # 10854) and Con-Test Analytical Laboratory. (NYSDOH NELAC registration #10899) for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, total organic carbon (TOC), biological oxygen demand (BOD), chemical oxygen demand (COD), pesticides, polychlorinated biphenyls (PCBs), metals, mercury (Hg), cyanide (CN), and polyfluoroalkyl substances (PFAS) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs SW-846 Method 8270D and 8270D with SIM
- Pesticides by SW-846 Method 8081B
- PCBs by SW-846 Method 8082A
- Metals by Method SW-846 6010D
- Metals by Method SW-846 6020B
- Mercury by SW-846 Method 7473
- Cyanide by SW-846 Method SM 4500 CN C/E
- PFAS by SOP 434-PFAAS

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
18I0168	18I0168-01	MW-1_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0168	18I0168-02	LMW01D_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0168	18I0168-03	MW-2_090518	9/5/2018	VOCs, SVOCs
18I0168	18I0168-04	LMW08S_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0168	18I0168-05	LMW08D_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0168	18I0168-06	GWDUP01_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0168	18I0168-07	GWFB01_090518	9/5/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0168	18I0168-08	GWTB01_090518	9/5/2018	VOCs
18I0253	18I0253-01	MW-3_090618	9/6/2018	VOCs, SVOCs
18I0253	18I0253-02	MW-4_090618	9/6/2018	VOCs, SVOCs
18I0253	18I0253-03	LMW12S_090618	9/6/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0253	18I0253-04	LMW12D_090618	9/6/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0253	18I0253-05	LMW15_090618	9/6/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0253	18I0253-06	LMW20S_090618	9/6/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0253	18I0253-07	LMW20D_090618	9/6/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0253	18I0253-08	GWTB02_090618	9/6/2018	VOCs
18I0296	18I0296-01	MW-5_090718	9/7/2018	VOCs, SVOCs
18I0296	18I0296-02	MW-6_090718	9/7/2018	VOCs, SVOCs
18I0296	18I0296-03	LMW11_090718	9/7/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0296	18I0296-04	LMW19S_090718	9/7/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN
18I0296	18I0296-05	LMW19D_090718	9/7/2018	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg
18I0296	18I0296-06	GWTB03_090718	9/7/2018	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34a, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-1_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
MW-1_090518	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
MW-1_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
MW-1_090518	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
MW-1_090518	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
MW-1_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-1_090518	SW8260C	67-64-1	ACETONE	UJ
MW-1_090518	SW8260C	107-02-8	ACROLEIN	UJ
MW-1_090518	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
MW-1_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-1_090518	SW8260C	108-90-7	CHLOROBENZENE	UJ
MW-1_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
MW-1_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-1_090518	SW8260C	74-95-3	DIBROMOMETHANE	UJ
MW-1_090518	SW8260C	179601-23-1	M,P-XYLENES	UJ
MW-1_090518	SW8260C	108-87-2	METHYLCYCLOHEXANE	UJ
MW-1_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
MW-1_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
MW-1_090518	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
MW-1_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW-1_090518	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
MW-1_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
MW-1_090518	SW8260C	75-01-4	VINYL CHLORIDE	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
MW-1_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	J
MW-1_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
MW-1_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
MW-1_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
MW-1_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
MW-1_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
MW-1_090518	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-1_090518	SW6010B	7439-89-6	IRON (TOTAL)	J
MW-1_090518	SW6010B	7439-92-1	LEAD (TOTAL)	U (0.00635)
MW-1_090518	SW8081B	53494-70-5	ENDRIN KETONE	UJ
MW-1_090518	SW8081B	5566-34-7	gamma-Chlordane	UJ
MW-1_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
MW-1_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
MW-1_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
MW-1_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
MW-1_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
MW-1_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	J
MW-1_090518	SW6010B	7440-66-6	ZINC (TOTAL)	J
MW-1_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
MW-1_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	J
MW-1_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
MW-1_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-1_090518	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
MW-1_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-1_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-1_090518	SW8270D	110-86-1	PYRIDINE	UJ
MW-1_090518	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
LMW01D_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW01D_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
LMW01D_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
LMW01D_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
LMW01D_090518	SW6010B	7439-92-1	LEAD (TOTAL)	U (0.00530)

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW01D_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
LMW01D_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW01D_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW01D_090518	SW8260C	67-64-1	ACETONE	UJ
LMW01D_090518	SW8260C	107-02-8	ACROLEIN	UJ
LMW01D_090518	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
LMW01D_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW01D_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW01D_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW01D_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW01D_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW01D_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW01D_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW01D_090518	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW01D_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW01D_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW01D_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW01D_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
LMW01D_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW01D_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW01D_090518	SW6010B	7440-66-6	ZINC (TOTAL)	J
LMW01D_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LMW01D_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW01D_090518	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW01D_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
LMW01D_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
LMW01D_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW01D_090518	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW01D_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW01D_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW01D_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW01D_090518	SW8270D	110-86-1	PYRIDINE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW01D_090518	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
MW-2_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
MW-2_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
MW-2_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-2_090518	SW8260C	67-64-1	ACETONE	UJ
MW-2_090518	SW8260C	107-02-8	ACROLEIN	UJ
MW-2_090518	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
MW-2_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-2_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
MW-2_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-2_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
MW-2_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
MW-2_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
MW-2_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
MW-2_090518	SW8260C	75-01-4	VINYL CHLORIDE	J
MW-2_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
MW-2_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
MW-2_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-2_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-2_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-2_090518	SW8270D	110-86-1	PYRIDINE	UJ
LMW08S_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW08S_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
LMW08S_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
LMW08S_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
LMW08S_090518	SW6010B	7439-92-1	LEAD (TOTAL)	U (0.00577)
LMW08S_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW08S_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW08S_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW08S_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
LMW08S_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW08S_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW08S_090518	SW6010B	7440-66-6	ZINC (TOTAL)	UJ
LMW08S_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
LMW08S_090518	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW08S_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW08S_090518	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
LMW08S_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW08S_090518	SW8260C	107-02-8	ACROLEIN	UJ
LMW08S_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW08S_090518	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW08S_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW08S_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW08S_090518	SW8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
LMW08S_090518	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LMW08S_090518	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW08S_090518	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW08S_090518	SW8260C	108-87-2	METHYLCYCLOHEXANE	UJ
LMW08S_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW08S_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW08S_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
LMW08S_090518	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW08S_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW08S_090518	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW08S_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
LMW08S_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
LMW08S_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW08S_090518	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW08S_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW08S_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW08S_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW08S_090518	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW08S_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW08S_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW08S_090518	SW8270D	110-86-1	PYRIDINE	UJ
LMW08D_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW08D_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
LMW08D_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
LMW08D_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
LMW08D_090518	SW6010B	7439-92-1	LEAD (TOTAL)	U (0.00938)
LMW08D_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW08D_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW08D_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW08D_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
LMW08D_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW08D_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW08D_090518	SW6010B	7440-66-6	ZINC (TOTAL)	J
LMW08D_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
LMW08D_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
LMW08D_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW08D_090518	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW08D_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW08D_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
LMW08D_090518	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
LMW08D_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
LMW08D_090518	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
LMW08D_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW08D_090518	SW8260C	107-02-8	ACROLEIN	UJ
LMW08D_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW08D_090518	SW8260C	75-15-0	CARBON DISULFIDE	J
LMW08D_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW08D_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW08D_090518	SW8260C	156-59-2	CIS-1,2-DICHLOROETHYLENE	J
LMW08D_090518	SW8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
LMW08D_090518	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW08D_090518	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW08D_090518	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW08D_090518	SW8260C	108-87-2	METHYLCYCLOHEXANE	UJ
LMW08D_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW08D_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW08D_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
LMW08D_090518	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	UJ
LMW08D_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW08D_090518	SW8260C	75-01-4	VINYL CHLORIDE	UJ
LMW08D_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW08D_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW08D_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW08D_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW08D_090518	SW8270D	110-86-1	PYRIDINE	UJ
GWDUP01_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	J
GWDUP01_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
GWDUP01_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
GWDUP01_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
GWDUP01_090518	SW6010B	7439-92-1	LEAD (TOTAL)	U (0.00656)
GWDUP01_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
GWDUP01_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
GWDUP01_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
GWDUP01_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
GWDUP01_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
GWDUP01_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	J
GWDUP01_090518	SW6010B	7440-66-6	ZINC (TOTAL)	UJ
GWDUP01_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
GWDUP01_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
GWDUP01_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
GWDUP01_090518	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
GWDUP01_090518	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
GWDUP01_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
GWDUP01_090518	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
GWDUP01_090518	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
GWDUP01_090518	SW8270D	91-58-7	2-CHLORONAPHTHALENE	UJ
GWDUP01_090518	SW8270D	91-57-6	2-METHYLNAPHTHALENE	UJ
GWDUP01_090518	SW8270D	88-74-4	2-NITROANILINE	UJ
GWDUP01_090518	SW8270D	91-94-1	3,3'-DICHLOROBENZIDINE	UJ
GWDUP01_090518	SW8270D	99-09-2	3-NITROANILINE	UJ
GWDUP01_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
GWDUP01_090518	SW8270D	101-55-3	4-BROMOPHENYL PHENYL ETHER	UJ
GWDUP01_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
GWDUP01_090518	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
GWDUP01_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
GWDUP01_090518	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
GWDUP01_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWDUP01_090518	SW8260C	107-02-8	ACROLEIN	UJ
GWDUP01_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
GWDUP01_090518	SW8260C	75-15-0	CARBON DISULFIDE	UJ
GWDUP01_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
GWDUP01_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
GWDUP01_090518	SW8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
GWDUP01_090518	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
GWDUP01_090518	SW8260C	79-20-9	METHYL ACETATE	UJ
GWDUP01_090518	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
GWDUP01_090518	SW8260C	108-87-2	METHYLCYCLOHEXANE	UJ
GWDUP01_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
GWDUP01_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWDUP01_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
GWDUP01_090518	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
GWDUP01_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWDUP01_090518	SW8260C	75-01-4	VINYL CHLORIDE	J
GWDUP01_090518	SW8270D	106-47-8	4-CHLOROANILINE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
GWDUP01_090518	SW8270D	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	UJ
GWDUP01_090518	SW8270D	100-01-6	4-NITROANILINE	UJ
GWDUP01_090518	SW8270D	98-86-2	ACETOPHENONE	UJ
GWDUP01_090518	SW8270D	100-52-7	BENZALDEHYDE	UJ
GWDUP01_090518	SW8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
GWDUP01_090518	SW8270D	92-52-4	BIPHENYL (DIPHENYL)	UJ
GWDUP01_090518	SW8270D	111-91-1	BIS(2-CHLOROETHOXY) METHANE	UJ
GWDUP01_090518	SW8270D	111-44-4	BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UJ
GWDUP01_090518	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL) ETHER	UJ
GWDUP01_090518	SW8270D	105-60-2	CAPROLACTAM	UJ
GWDUP01_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
GWDUP01_090518	SW8270D	86-74-8	CARBAZOLE	UJ
GWDUP01_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
GWDUP01_090518	SW8270D	132-64-9	DIBENZOFURAN	UJ
GWDUP01_090518	SW8270D	84-66-2	DIETHYL PHTHALATE	UJ
GWDUP01_090518	SW8270D	84-74-2	DI-N-BUTYL PHTHALATE	UJ
GWDUP01_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
GWDUP01_090518	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
GWDUP01_090518	SW8270D	78-59-1	ISOPHORONE	UJ
GWDUP01_090518	SW8270D	621-64-7	N-NITROSODI-N-PROPYLAMINE	UJ
GWDUP01_090518	SW8270D	86-30-6	N-NITROSODIPHENYLAMINE	UJ
GWDUP01_090518	SW8270D	2312-35-8	PROPARGITE	UJ
GWDUP01_090518	SW8270D	110-86-1	PYRIDINE	UJ
GWDUP01_090518	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
GWFB01_090518	SW6010B	7440-39-3	BARIUM (TOTAL)	UJ
GWFB01_090518	SW6010B	7440-70-2	CALCIUM (TOTAL)	R
GWFB01_090518	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
GWFB01_090518	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
GWFB01_090518	SW6010B	7439-92-1	LEAD (TOTAL)	J
GWFB01_090518	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	UJ
GWFB01_090518	SW6010B	7439-96-5	MANGANESE (TOTAL)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
GWFB01_090518	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
GWFB01_090518	SW6010B	7440-09-7	POTASSIUM (TOTAL)	UJ
GWFB01_090518	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
GWFB01_090518	SW6010B	7440-23-5	SODIUM (TOTAL)	UJ
GWFB01_090518	SW6010B	7440-66-6	ZINC (TOTAL)	UJ
GWFB01_090518	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
GWFB01_090518	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
GWFB01_090518	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
GWFB01_090518	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
GWFB01_090518	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
GWFB01_090518	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
GWFB01_090518	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
GWFB01_090518	SW8270D	100-52-7	BENZALDEHYDE	UJ
GWFB01_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
GWFB01_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
GWFB01_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWFB01_090518	SW8260C	67-64-1	ACETONE	UJ
GWFB01_090518	SW8260C	107-02-8	ACROLEIN	UJ
GWFB01_090518	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
GWFB01_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
GWFB01_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
GWFB01_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
GWFB01_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
GWFB01_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWFB01_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
GWFB01_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWFB01_090518	SW8260C	75-01-4	VINYL CHLORIDE	UJ
GWFB01_090518	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
GWFB01_090518	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
GWFB01_090518	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
GWTB01_090518	SW8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
GWTB01_090518	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
GWTB01_090518	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWTB01_090518	SW8260C	67-64-1	ACETONE	UJ
GWTB01_090518	SW8260C	107-02-8	ACROLEIN	UJ
GWTB01_090518	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
GWTB01_090518	SW8260C	74-83-9	BROMOMETHANE	UJ
GWTB01_090518	SW8260C	75-00-3	CHLOROETHANE	UJ
GWTB01_090518	SW8260C	74-87-3	CHLOROMETHANE	UJ
GWTB01_090518	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
GWTB01_090518	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWTB01_090518	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
GWTB01_090518	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWTB01_090518	SW8260C	75-01-4	VINYL CHLORIDE	UJ
MW-1_090518	SOP 434-PFAAS	2058-94-8	Perfluoroundecanoic Acid (PFUnA)	UJ
MW-1_090519	SOP 434-PFAAS	2706-90-3	Perfluoropentanoic Acid (PFPeA)	UJ
MW-1_090520	SOP 434-PFAAS	307-24-4	Perfluorohexanoic acid (PFHxA)	J
MW-1_090521	SOP 434-PFAAS	307-55-1	Perfluorododecanoic acid (PFDoA)	UJ
MW-1_090522	SOP 434-PFAAS	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	UJ
MW-1_090523	SOP 434-PFAAS	375-92-8	Perfluoroheptane Sulfonate (PFHPS)	UJ
MW-1_090524	SOP 434-PFAAS	375-95-1	Perfluorononanoic acid (PFNA)	UJ
MW-1_090525	SOP 434-PFAAS	376-06-7	Perfluorotetradecanoic acid (PFTA)	UJ
MW-1_090526	SOP 434-PFAAS	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	UJ
MW-1_090527	SOP 434-PFAAS	754-91-6	Perfluorooctane Sulfonamide (FOSA)	UJ
LMW08S_090518	SOP 434-PFAAS	754-91-6	Perfluorooctane Sulfonamide (FOSA)	UJ
GWDUP01_090518	SOP 434-PFAAS	754-91-6	Perfluorooctane Sulfonamide (FOSA)	UJ
GWFB01_090518	SOP 434-PFAAS	754-91-6	Perfluorooctane Sulfonamide (FOSA)	UJ
GWTB02_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
GWTB02_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
GWTB02_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
GWTB02_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
GWTB02_090618	SW8260C	67-64-1	ACETONE	UJ
GWTB02_090618	SW8260C	107-02-8	ACROLEIN	UJ
GWTB02_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
GWTB02_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
GWTB02_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
GWTB02_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
GWTB02_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
GWTB02_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
GWTB02_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
GWTB02_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
GWTB02_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWTB02_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
GWTB02_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
GWTB02_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	UJ
GWTB02_090618	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	UJ
GWTB02_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWTB02_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW12D_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LMW12D_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW12D_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW12D_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW12D_090618	SW8260C	67-64-1	ACETONE	UJ
LMW12D_090618	SW8260C	107-02-8	ACROLEIN	UJ
LMW12D_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW12D_090618	SW6010B	7439-92-1	LEAD (TOTAL)	UJ
LMW12D_090618	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW12D_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW12D_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW12D_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW12D_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW12D_090618	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW12D_090618	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW12D_090618	SW6010B	9/7/7440	POTASSIUM (TOTAL)	J
LMW12D_090618	SW6010B	9/7/7440	POTASSIUM (DISSOLVED)	J
LMW12D_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW12D_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	J
LMW12D_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW12D_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW12D_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
LMW12D_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW12D_090618	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW12D_090618	SW6020	7440-36-0	ANTIMONY (TOTAL)	UJ
LMW12D_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW12D_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW12D_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW12D_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW12D_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW12D_090618	SW6020	7440-41-7	BERYLLIUM (TOTAL)	UJ
LMW12D_090618	SW6020	7440-41-7	BERYLLIUM (DISSOLVED)	UJ
LMW12D_090618	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW12D_090618	SW6020	7440-28-0	THALLIUM (DISSOLVED)	J
LMW12D_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW12D_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW12D_090618	SW8270D	110-86-1	PYRIDINE	UJ
LMW12D_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW12D_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW12S_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LMW12S_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW12S_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW12S_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW12S_090618	SW8260C	67-64-1	ACETONE	UJ
LMW12S_090618	SW8260C	107-02-8	ACROLEIN	UJ
LMW12S_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW12S_090618	SW6010B	7439-92-1	LEAD (TOTAL)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW12S_090618	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW12S_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW12S_090618	SW8260C	75-15-0	CARBON DISULFIDE	J
LMW12S_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW12S_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW12S_090618	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW12S_090618	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW12S_090618	SW6010B	9/7/7440	POTASSIUM (TOTAL)	J
LMW12S_090618	SW6010B	9/7/7440	POTASSIUM (DISSOLVED)	J
LMW12S_090618	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW12S_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW12S_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW12S_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	J
LMW12S_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW12S_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
LMW12S_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW12S_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW12S_090618	SW6020	7440-36-0	ANTIMONY (TOTAL)	UJ
LMW12S_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW12S_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW12S_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW12S_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW12S_090618	SW6020	7440-41-7	BERYLLIUM (TOTAL)	UJ
LMW12S_090618	SW6020	7440-41-7	BERYLLIUM (DISSOLVED)	UJ
LMW12S_090618	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW12S_090618	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW12S_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW12S_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW12S_090618	SW8270D	110-86-1	PYRIDINE	UJ
LMW12S_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW12S_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW15_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW15_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW15_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW15_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW15_090618	SW8260C	67-64-1	ACETONE	UJ
LMW15_090618	SW8260C	107-02-8	ACROLEIN	UJ
LMW15_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW15_090618	SW6010B	7439-92-1	LEAD (TOTAL)	J
LMW15_090618	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW15_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW15_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW15_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW15_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW15_090618	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW15_090618	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW15_090618	SW6010B	9/7/7440	POTASSIUM (TOTAL)	J
LMW15_090618	SW6010B	9/7/7440	POTASSIUM (DISSOLVED)	J
LMW15_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW15_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW15_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW15_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW15_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
LMW15_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW15_090618	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW15_090618	SW6020	7440-36-0	ANTIMONY (TOTAL)	UJ
LMW15_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW15_090618	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
LMW15_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW15_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW15_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW15_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW15_090618	SW6020	7440-41-7	BERYLLIUM (TOTAL)	UJ
LMW15_090618	SW6020	7440-41-7	BERYLLIUM (DISSOLVED)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW15_090618	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW15_090618	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW15_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW15_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW15_090618	SW8270D	110-86-1	PYRIDINE	UJ
LMW15_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW15_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW20D_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LMW20D_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW20D_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW20D_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW20D_090618	SW8260C	67-64-1	ACETONE	UJ
LMW20D_090618	SW8260C	107-02-8	ACROLEIN	UJ
LMW20D_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW20D_090618	SW6010B	7439-92-1	LEAD (TOTAL)	UJ
LMW20D_090618	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW20D_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW20D_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW20D_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW20D_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW20D_090618	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW20D_090618	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW20D_090618	SW6010B	9/7/7440	POTASSIUM (TOTAL)	J
LMW20D_090618	SW6010B	9/7/7440	POTASSIUM (DISSOLVED)	J
LMW20D_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW20D_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW20D_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW20D_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW20D_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
LMW20D_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW20D_090618	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW20D_090618	SW6020	7440-36-0	ANTIMONY (TOTAL)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW20D_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW20D_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW20D_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW20D_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW20D_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW20D_090618	SW6020	7440-41-7	BERYLLIUM (TOTAL)	UJ
LMW20D_090618	SW6020	7440-41-7	BERYLLIUM (DISSOLVED)	UJ
LMW20D_090618	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW20D_090618	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW20D_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW20D_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW20D_090618	SW8270D	110-86-1	PYRIDINE	UJ
LMW20D_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LMW20D_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW20S_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LMW20S_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
LMW20S_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW20S_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW20S_090618	SW8260C	67-64-1	ACETONE	UJ
LMW20S_090618	SW8260C	107-02-8	ACROLEIN	UJ
LMW20S_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW20S_090618	SW6010B	7439-92-1	LEAD (TOTAL)	UJ
LMW20S_090618	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW20S_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW20S_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW20S_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW20S_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW20S_090618	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW20S_090618	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW20S_090618	SW6010B	9/7/7440	POTASSIUM (TOTAL)	J
LMW20S_090618	SW6010B	9/7/7440	POTASSIUM (DISSOLVED)	J
LMW20S_090618	SW8260C	79-20-9	METHYL ACETATE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW20S_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
LMW20S_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
LMW20S_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW20S_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
LMW20S_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW20S_090618	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW20S_090618	SW6020	7440-36-0	ANTIMONY (TOTAL)	UJ
LMW20S_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
LMW20S_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW20S_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW20S_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
LMW20S_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW20S_090618	SW6020	7440-41-7	BERYLLIUM (TOTAL)	UJ
LMW20S_090618	SW6020	7440-41-7	BERYLLIUM (DISSOLVED)	UJ
LMW20S_090618	SW6020	7440-28-0	THALLIUM (TOTAL)	UJ
LMW20S_090618	SW6020	7440-28-0	THALLIUM (DISSOLVED)	UJ
LMW20S_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW20S_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW20S_090618	SW8270D	110-86-1	PYRIDINE	UJ
LMW20S_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LMW20S_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-3_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
MW-3_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
MW-3_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
MW-3_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-3_090618	SW8260C	67-64-1	ACETONE	UJ
MW-3_090618	SW8260C	107-02-8	ACROLEIN	UJ
MW-3_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-3_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-3_090618	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-3_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
MW-3_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
MW-3_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
MW-3_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
MW-3_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
MW-3_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
MW-3_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
MW-3_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
MW-3_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	UJ
MW-3_090618	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
MW-3_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
MW-3_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
MW-3_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-3_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-3_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-3_090618	SW8270D	110-86-1	PYRIDINE	UJ
MW-3_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
MW-3_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-4_090618	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
MW-4_090618	SW8260C	75-34-3	1,1-DICHLOROETHANE	J
MW-4_090618	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
MW-4_090618	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-4_090618	SW8260C	67-64-1	ACETONE	UJ
MW-4_090618	SW8260C	107-02-8	ACROLEIN	UJ
MW-4_090618	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-4_090618	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-4_090618	SW8260C	75-15-0	CARBON DISULFIDE	J
MW-4_090618	SW8260C	75-00-3	CHLOROETHANE	UJ
MW-4_090618	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-4_090618	SW8260C	79-20-9	METHYL ACETATE	UJ
MW-4_090618	SW8260C	78-93-3	METHYL ETHYL KETONE (2-BUTANONE)	UJ
MW-4_090618	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
MW-4_090618	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
MW-4_090618	SW8260C	1634-04-4	TERT-BUTYL METHYL ETHER	UJ
MW-4_090618	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
MW-4_090618	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
MW-4_090618	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
MW-4_090618	SW8260C	75-01-4	VINYL CHLORIDE	J
MW-4_090618	SW8260C	XYLENES	XYLENES, TOTAL	UJ
MW-4_090618	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-4_090618	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-4_090618	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-4_090618	SW8270D	110-86-1	PYRIDINE	UJ
MW-4_090618	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
MW-4_090618	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW12S_090618	SOP 434-PFAAS	754-91-6	Perfluorooctane Sulfonamide (FOSA)	UJ
MW-5_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
MW-5_090718	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
MW-5_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-5_090718	SW8260C	67-64-1	ACETONE	UJ
MW-5_090718	SW8260C	107-02-8	ACROLEIN	UJ
MW-5_090718	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-5_090718	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-5_090718	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-5_090718	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
MW-5_090718	SW8260C	75-00-3	CHLOROETHANE	UJ
MW-5_090718	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-5_090718	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
MW-5_090718	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
MW-5_090718	SW8260C	79-20-9	METHYL ACETATE	UJ
MW-5_090718	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
MW-5_090718	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
MW-5_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW-5_090718	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
MW-5_090718	SW8260C	75-01-4	VINYL CHLORIDE	J

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MW-5_090718	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-5_090718	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
MW-5_090718	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
MW-5_090718	SW8270D	88-74-4	2-NITROANILINE	UJ
MW-5_090718	SW8270D	99-09-2	3-NITROANILINE	UJ
MW-5_090718	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-5_090718	SW8270D	100-01-6	4-NITROANILINE	UJ
MW-5_090718	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-5_090718	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
MW-5_090718	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
MW-5_090718	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-5_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
MW-6_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
MW-6_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
MW-6_090718	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
MW-6_090718	SW8260C	75-25-2	BROMOFORM	UJ
MW-6_090718	SW8260C	108-90-7	CHLOROBENZENE	UJ
MW-6_090718	SW8260C	CYMP	P-CYMENE (P-ISOPROPYLTOLUENE)	UJ
MW-6_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
MW-6_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
MW-6_090718	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
MW-6_090718	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
MW-6_090718	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
MW-6_090718	SW8270D	88-74-4	2-NITROANILINE	UJ
MW-6_090718	SW8270D	99-09-2	3-NITROANILINE	UJ
MW-6_090718	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
MW-6_090718	SW8270D	100-01-6	4-NITROANILINE	UJ
MW-6_090718	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
MW-6_090718	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
MW-6_090718	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
MW-6_090718	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW11_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW11_090718	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW11_090718	SW6010B	7429-90-5	ALUMINUM (TOTAL)	J
LMW11_090718	SW6010B	7429-90-5	ALUMINUM (DISSOLVED)	UJ
LMW11_090718	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW11_090718	SW6010B	7440-39-3	BARIUM (DISSOLVED)	J
LMW11_090718	SW6010B	7440-70-2	CALCIUM (TOTAL)	J
LMW11_090718	SW6010B	7440-70-2	CALCIUM (DISSOLVED)	J
LMW11_090718	SW6010B	7440-47-3	CHROMIUM (TOTAL)	J
LMW11_090718	SW6010B	7440-47-3	CHROMIUM (DISSOLVED)	UJ
LMW11_090718	SW6010B	7440-48-4	COBALT (TOTAL)	J
LMW11_090718	SW6010B	7440-48-4	COBALT (DISSOLVED)	UJ
LMW11_090718	SW6010B	7440-50-8	COPPER (TOTAL)	J
LMW11_090718	SW6010B	7440-50-8	COPPER (DISSOLVED)	UJ
LMW11_090718	SW6010B	7439-89-6	IRON (TOTAL)	J
LMW11_090718	SW6010B	7439-89-6	IRON (DISSOLVED)	J
LMW11_090718	SW6010B	7439-92-1	LEAD (TOTAL)	J
LMW11_090718	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW11_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW11_090718	SW8260C	67-64-1	ACETONE	UJ
LMW11_090718	SW8260C	107-02-8	ACROLEIN	UJ
LMW11_090718	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW11_090718	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW11_090718	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW11_090718	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
LMW11_090718	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW11_090718	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW11_090718	SW6010B	7439-95-4	MAGNESIUM (DISSOLVED)	J
LMW11_090718	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW11_090718	SW6010B	7439-96-5	MANGANESE (DISSOLVED)	J
LMW11_090718	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW11_090718	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW11_090718	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LMW11_090718	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW11_090718	SW6010B	7440-22-4	SILVER (TOTAL)	UJ
LMW11_090718	SW6010B	7440-22-4	SILVER (DISSOLVED)	UJ
LMW11_090718	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW11_090718	SW6010B	7440-62-2	VANADIUM (TOTAL)	J
LMW11_090718	SW6010B	7440-62-2	VANADIUM (DISSOLVED)	UJ
LMW11_090718	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW11_090718	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LMW11_090718	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
LMW11_090718	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW11_090718	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
LMW11_090718	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW11_090718	SW6010B	7440-66-6	ZINC (TOTAL)	J
LMW11_090718	SW6010B	7440-66-6	ZINC (DISSOLVED)	UJ
LMW11_090718	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
LMW11_090718	SW6020	7782-49-2	SELENIUM (DISSOLVED)	J
LMW11_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW11_090718	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW11_090718	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW11_090718	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW11_090718	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
LMW11_090718	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
LMW11_090718	SW8270D	88-74-4	2-NITROANILINE	UJ
LMW11_090718	SW8270D	99-09-2	3-NITROANILINE	UJ
LMW11_090718	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW11_090718	SW8270D	100-01-6	4-NITROANILINE	UJ
LMW11_090718	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW11_090718	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	UJ
LMW11_090718	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW11_090718	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW11_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
LMW19S_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW19S_090718	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW19S_090718	SW6010B	7429-90-5	ALUMINUM (TOTAL)	J
LMW19S_090718	SW6010B	7429-90-5	ALUMINUM (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW19S_090718	SW6010B	7440-39-3	BARIUM (DISSOLVED)	J
LMW19S_090718	SW6010B	7440-70-2	CALCIUM (TOTAL)	J
LMW19S_090718	SW6010B	7440-70-2	CALCIUM (DISSOLVED)	J
LMW19S_090718	SW6010B	7440-47-3	CHROMIUM (TOTAL)	J
LMW19S_090718	SW6010B	7440-47-3	CHROMIUM (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7440-48-4	COBALT (TOTAL)	J
LMW19S_090718	SW6010B	7440-48-4	COBALT (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7440-50-8	COPPER (TOTAL)	J
LMW19S_090718	SW6010B	7440-50-8	COPPER (DISSOLVED)	J
LMW19S_090718	SW6010B	7439-89-6	IRON (TOTAL)	J
LMW19S_090718	SW6010B	7439-89-6	IRON (DISSOLVED)	J
LMW19S_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW19S_090718	SW8260C	67-64-1	ACETONE	UJ
LMW19S_090718	SW8260C	107-02-8	ACROLEIN	UJ
LMW19S_090718	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW19S_090718	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW19S_090718	SW8260C	75-15-0	CARBON DISULFIDE	UJ
LMW19S_090718	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
LMW19S_090718	SW8260C	75-00-3	CHLOROETHANE	J
LMW19S_090718	SW6010B	7439-92-1	LEAD (TOTAL)	J
LMW19S_090718	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW19S_090718	SW6010B	7439-95-4	MAGNESIUM (DISSOLVED)	J
LMW19S_090718	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW19S_090718	SW6010B	7439-96-5	MANGANESE (DISSOLVED)	J
LMW19S_090718	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW19S_090718	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW19S_090718	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW19S_090718	SW6010B	7440-22-4	SILVER (TOTAL)	UJ
LMW19S_090718	SW6010B	7440-22-4	SILVER (DISSOLVED)	UJ
LMW19S_090718	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW19S_090718	SW6010B	7440-62-2	VANADIUM (TOTAL)	J
LMW19S_090718	SW6010B	7440-62-2	VANADIUM (DISSOLVED)	UJ
LMW19S_090718	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW19S_090718	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LMW19S_090718	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
LMW19S_090718	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW19S_090718	SW8260C	75-09-2	METHYLENE CHLORIDE	U (2.02)
LMW19S_090718	SW8260C	103-65-1	N-PROPYLBENZENE	J
LMW19S_090718	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW19S_090718	SW6010B	7440-66-6	ZINC (TOTAL)	J
LMW19S_090718	SW6010B	7440-66-6	ZINC (DISSOLVED)	UJ
LMW19S_090718	SW6020	7782-49-2	SELENIUM (TOTAL)	J
LMW19S_090718	SW6020	7782-49-2	SELENIUM (DISSOLVED)	J
LMW19S_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW19S_090718	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW19S_090718	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW19S_090718	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW19S_090718	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
LMW19S_090718	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
LMW19S_090718	SW8270D	88-74-4	2-NITROANILINE	UJ
LMW19S_090718	SW8270D	99-09-2	3-NITROANILINE	UJ
LMW19S_090718	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW19S_090718	SW8270D	100-01-6	4-NITROANILINE	UJ
LMW19S_090718	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW19S_090718	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW19S_090718	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW19S_090718	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
LMW19S_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
LMW19D_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
LMW19D_090718	SW8260C	75-35-4	1,1-DICHLOROETHENE	J
LMW19D_090718	SW6010B	7429-90-5	ALUMINUM (TOTAL)	J
LMW19D_090718	SW6010B	7429-90-5	ALUMINUM (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7440-39-3	BARIUM (TOTAL)	J
LMW19D_090718	SW6010B	7440-39-3	BARIUM (DISSOLVED)	J
LMW19D_090718	SW6010B	7440-70-2	CALCIUM (TOTAL)	J
LMW19D_090718	SW6010B	7440-70-2	CALCIUM (DISSOLVED)	J
LMW19D_090718	SW6010B	7440-47-3	CHROMIUM (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-47-3	CHROMIUM (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7440-48-4	COBALT (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-48-4	COBALT (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7440-50-8	COPPER (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-50-8	COPPER (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7439-89-6	IRON (TOTAL)	J
LMW19D_090718	SW6010B	7439-89-6	IRON (DISSOLVED)	J
LMW19D_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
LMW19D_090718	SW8260C	67-64-1	ACETONE	UJ
LMW19D_090718	SW8260C	107-02-8	ACROLEIN	UJ
LMW19D_090718	SW8260C	107-13-1	ACRYLONITRILE	UJ
LMW19D_090718	SW8260C	74-83-9	BROMOMETHANE	UJ
LMW19D_090718	SW8260C	75-15-0	CARBON DISULFIDE	J
LMW19D_090718	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
LMW19D_090718	SW8260C	75-00-3	CHLOROETHANE	UJ
LMW19D_090718	SW6010B	7439-92-1	LEAD (TOTAL)	UJ
LMW19D_090718	SW6010B	7439-92-1	LEAD (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7439-95-4	MAGNESIUM (TOTAL)	J
LMW19D_090718	SW6010B	7439-95-4	MAGNESIUM (DISSOLVED)	J
LMW19D_090718	SW6010B	7439-96-5	MANGANESE (TOTAL)	J
LMW19D_090718	SW6010B	7439-96-5	MANGANESE (DISSOLVED)	J
LMW19D_090718	SW6010B	7440-02-0	NICKEL (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-02-0	NICKEL (DISSOLVED)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
LMW19D_090718	SW6010B	7440-09-7	POTASSIUM (TOTAL)	J
LMW19D_090718	SW6010B	7440-09-7	POTASSIUM (DISSOLVED)	J
LMW19D_090718	SW6010B	7440-22-4	SILVER (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-22-4	SILVER (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7440-23-5	SODIUM (TOTAL)	J
LMW19D_090718	SW6010B	7440-23-5	SODIUM (DISSOLVED)	J
LMW19D_090718	SW8260C	74-87-3	CHLOROMETHANE	UJ
LMW19D_090718	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
LMW19D_090718	SW8260C	98-82-8	ISOPROPYLBENZENE (CUMENE)	UJ
LMW19D_090718	SW8260C	79-20-9	METHYL ACETATE	UJ
LMW19D_090718	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
LMW19D_090718	SW8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
LMW19D_090718	SW6010B	7440-62-2	VANADIUM (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-62-2	VANADIUM (DISSOLVED)	UJ
LMW19D_090718	SW6010B	7440-66-6	ZINC (TOTAL)	UJ
LMW19D_090718	SW6010B	7440-66-6	ZINC (DISSOLVED)	UJ
LMW19D_090718	SW6020	7782-49-2	SELENIUM (TOTAL)	UJ
LMW19D_090718	SW6020	7782-49-2	SELENIUM (DISSOLVED)	UJ
LMW19D_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
LMW19D_090718	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
LMW19D_090718	SW8260C	75-01-4	VINYL CHLORIDE	J
LMW19D_090718	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
LMW19D_090718	SW8270D	121-14-2	2,4-DINITROTOLUENE	UJ
LMW19D_090718	SW8270D	606-20-2	2,6-DINITROTOLUENE	UJ
LMW19D_090718	SW8270D	88-74-4	2-NITROANILINE	UJ
LMW19D_090718	SW8270D	99-09-2	3-NITROANILINE	UJ
LMW19D_090718	SW8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
LMW19D_090718	SW8270D	100-01-6	4-NITROANILINE	UJ
LMW19D_090718	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
LMW19D_090718	SW8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
LMW19D_090718	SW8270DSIM	62-75-9	N-NITROSODIMETHYLAMINE	UJ
LMW19D_090718	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LMW19D_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	J
GWTB03_090718	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
GWTB03_090718	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWTB03_090718	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
GWTB03_090718	SW8260C	75-25-2	BROMOFORM	UJ
GWTB03_090718	SW8260C	108-90-7	CHLOROBENZENE	UJ
GWTB03_090718	SW8260C	CYMP	P-CYMENE (P-ISOPROPYLTOLUENE)	UJ
GWTB03_090718	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
GWTB03_090718	SW8260C	79-01-6	TRICHLOROETHYLENE (TCE)	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. The following major deficiencies were identified.

18I0168:

Metals by Method 6010D

The MS for batch BI80442 (MW-1_090518) exhibited a %R below the LCL for calcium (total) (5.88%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are rejected based on significant variance.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

18I0168:

VOCs by Method 8260C

The LCS for batch BI80403 exhibited a %R below the LCL for tetrachloroethylene (74.6, 73.0%). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, GWFB01_090518, and GWTB01_090518 are qualified as "J" and "UJ" based on potential low bias.

The laboratory control sample and duplicate (LCS/LCSD) for batch BI80403 exhibited a relative percent difference (RPD) above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (40.3%), 1,1-dichloroethylene (36.3%), 1,4-dioxane (53.7%), acrolein (66.9%), and bromomethane (31.4%). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, GWFB01_090518, and GWTB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The LCS for batch BI80452 exhibited a %R below the LCL for 1,1-dichloroethane (74.3%), 1,2-dichloropropane (74.1%), cis-1,2-dichloroethylene (75.6%), cis-1,3-dichloropropylene (79.7%), tetrachloroethylene (76.0, 72.1%), and trans-1,2-dichloroethylene (71.7%). The associated results in samples LMW08S_090518, LMW08D_090518, and GWDUP01_090518 are qualified as "J" and "UJ" based on potential low bias.

The LCS/LCSD for batch BI80452 exhibited a RPD above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (40.3%), 2-butanone (38%), bromomethane (35.5%), chloroethane (39.2%), chloromethane (48.8%), dichlorodifluoromethane (49.5%), trichlorofluoromethane (44.4%), and vinyl chloride (47.2%). The associated results in samples LMW08S_090518, LMW08D_090518, and GWDUP01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The LCS for batch BI80482 exhibited a %R below the LCL for trichloroethylene (76.7%). The associated results in samples MW-1_090518 RE1, LMW01D_090518 RE1, MW-2_090518 RE1, LMW08S_090518 RE1, and GWDUP01_090518 RE1 are qualified as "J" and "UJ" based on potential low bias.

The MS for batch BI80403 (MW-1_090518) exhibited a %R below the LCL for 1,1-dichloroethylene (38.5%), 1,2-dichloropropane (71.7%), 1,3-dichlorobenzene (71.1%), chlorobenzene (79.6%), 1,4-dioxane (5.96%), cis-1,2-dichloroethylene (7.3, -258%), dibromomethane (75.7%), methyl tert-butyl ether (58.6, 70.1%), methylcyclohexane (64.4, 67.6%), p- & m- xylenes (66.6%), tetrachloroethylene (55.5, 59.3%), and trans-1,2-dichloroethylene (45.4, 59.0%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential low bias.

The matrix spike and duplicate (MS/MSD) for batch BI80403 exhibited a RPD above the control limit for 1,1-dichloroethane (38.6%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The field duplicate (GWDUP01_090518) and parent sample (MW-1_090518) exhibited a RPD above the control limit for trichloroethylene (52.1%). The associated results are qualified as "J" and "UJ" based on potential indeterminate bias.

The field duplicate (GWDUP01_090518) and parent sample (MW-1_090518) exhibited an absolute difference greater than the reporting limit for tetrachloroethylene. The associated results are qualified as "J" and "UJ" based on potential indeterminate bias.

The initial calibration (ICAL) for batch YI80001 on instrument MSVOA7 exhibited a relative standard deviation (RSD) above the control limit for 1,4-dioxane (28.60), acrolein (22.30), and tert-butyl alcohol (30.20). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, GWFB01_090518, and GWTB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) for batch Y8I1208 on instrument MSVOA7 exhibited a percent difference (%D) above the control limit for 1,4-dioxane (-57.9%), acetone (25.8%), bromochloromethane (22.4%), bromomethane (-58.9%), chloroethane (56.4%), chloromethane (22.4%), methylene chloride (27%), tert-butyl alcohol (416%), tetrachloroethylene (31.9%), trichlorofluoromethane (50.7%), and vinyl chloride (51.3%). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, GWFB01_090518, and GWTB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1211 on instrument MSVOA7 exhibited a %D above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (-29.6%), 1,1-dichloroethylene (-28.1%), acrolein (-45.8%), bromomethane (-42.3%), carbon disulfide (-26.8%), chloroethane (35.7%), chloromethane (34.9%), methyl acetate (20.7%), methylcyclohexane (-20.7%), methylene chloride (25.4%), tert-butyl alcohol (425%), tetrachloroethylene (40.3%), trichlorofluoromethane (22.6%), and vinyl chloride (34.4%). The associated results in samples LMW08S_090518, LMW08D_090518, and GWDUP01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

SVOCs by Method 8270D and 8270D with SIM

The surrogates nitrobenzene-d5 and 2-fluorobiphenyl in sample GWDUP01_090518 exhibited a percent recovery (%R) below the LCL for nitrobenzene-d5 (40.5%). The associated base/neutral extractable results in sample GWDUP01_090518 are qualified as "J" and "UJ" based on potential low bias.

The CCV for batch Y8I1123 on instrument BNA #3 exhibited a %D above the control limit for 2,4-dinitrophenol (104%), 2,6-dinitrotoluene (21.8%), 4,6-dinitro-2-methylphenol (80.1%), di-n-octyl phthalate (27.8%), and pyridine (-32.5%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1210 on instrument BNA #3 exhibited a %D above the control limit for 2,4-dinitrophenol (121%), 4,6-dinitro-2-methylphenol (92.1%), di-n-octyl phthalate (27.7%), and pyridine (-32.8%). The associated results in samples LMW01D_090518, MW-2_090518, LMW08S_090518, and LMW08D_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1317 on instrument BNA #3 exhibited a %D above the control limit for 2,4-dinitrophenol (94.5%), 2,6-dinitrotoluene (23%), 4,6-dinitro-2-methylphenol (86.4%), benzaldehyde (-31.3%), and di-n-octyl phthalate (32.3%). The associated results in samples GWDUP01_090518 and are qualified as "J" and "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) for batch YI80012 on instrument BNA #5 exhibited a %D above the control limit for bis(2-ethylhexyl)phthalate (-35%) and n-nitrosodimethylamine (-48%). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1213 on instrument BNA #5 exhibited a %D above the control limit for pentachlorophenol (62%). The associated results in samples MW-1_090518, LMW01D_090518, and LMW08S_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

Pesticides by Method 8081B

The MS/MSD for batch BI80157 (MW-1_090518) exhibited a RPD above the control limit for endrin ketone (37.8%) and gamma-chlordane (25.8%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6010D

The field blank (FB) GWFB01_090518 exhibited a detection of lead (total) (7.81 ug/L) and iron (dissolved) (80.9 ug/L). The associated results in samples MW-1_090518, LMW01D_090518, MW-2_090518, LMW08S_090518, LMW08D_090518, and GWDUP01_090518 are qualified as "U" based on potential blank contamination.

The LCS for batch BI80442 exhibited a %R above the upper control limit (UCL) for calcium (total) (136%), potassium (total) (228%), and sodium (total) (161%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" based on potential high bias.

The LCS for batch BI80461 exhibited a %R above the upper control limit (UCL) for potassium (dissolved) (216%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" based on potential high bias.

The MS for batch BI80442 exhibited a %R below the LCL for magnesium (total) (54.6%) and sodium (total) (63.9%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential low bias.

The MS for batch BI80442 (MW-1_090518) exhibited a %R above the upper control limit (UCL) for potassium (174%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" based on potential high bias.

The field duplicate GWDUP01_090518 and parent sample MW-1_090518 exhibited an absolute difference greater than the reporting limit for zinc (total). The associated results are qualified as "J" and "UJ" based on potential indeterminate bias.

The lab duplicate and parent sample MW-1_090518 exhibited a RPD above the control limit for iron (total) (24.2%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1224 on instrument WinLabICP exhibited a %R above the control limit for barium (total) (113%), chromium (total) (112%), cobalt (total) (113%), lead (total) (114%), magnesium (total) (113%), manganese (total) (111%), sodium (total) (111%), and zinc (total) (116%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The contract required detection limits (CRDL) standard for batch Y8I1224 on instrument WinLabICP exhibited a %R above the control limit for lead (total) (192%) and nickel (total) (137%). The associated results in samples MW-1_090518, LMW01D_090518,

LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The serial dilution for batch Y8I1224 exhibited a %D above the control limit for lead (total) (363%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6020B

The field duplicate GWDUP01_090518 and parent sample MW-1_090518 exhibited an absolute difference greater than the reporting limit for selenium (dissolved). The associated results are qualified as "J" and "UJ" based on potential indeterminate bias.

The lab duplicate and parent sample MW-1_090518 exhibited a RPD above the control limit for selenium (dissolved) (53.9%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1233 on instrument WinLabICP exhibited a %R above the control limit for selenium (total) (89.1%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1233 on instrument WinLabICP exhibited a %D above the control limit for thallium (total) (112%). The associated results in samples LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The contract required detection limits (CRDL) standard for batch Y8I1233 on instrument WinLabICP exhibited a %R below the control limit for selenium (total) (56.7%). The associated results in samples MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1242 on instrument WinLabICP exhibited a %D above the control limit for thallium (dissolved) (112%). The associated results in samples LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I1242 on instrument WinLabICP exhibited a %R below the control limit for selenium (dissolved) (56.7%). The associated results in samples MW-

1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "J" and "UJ" based on potential indeterminate bias.

PFAS by SOP 434-PFAAS

The LCS for batch BI80652 exhibited a %R below the LCL for perfluorooctanesulfonamide (FOSA) (25.1%). The associated results in samples MW-1_090518, LMW08S_090518, GWDUP01_090518, and GWFB01_090518 are qualified as "UJ" based on potential low bias.

The MS for batch B212652 (MW-1_090518) exhibited a %R below the LCL for perfluorohexanoic acid (PFHxA) (33.8%), perfluoropentanoic acid (PFPeA) (41.5%), perfluoroundecanoic acid (PFUnA) (42.7%), perfluorododecanoic acid (PFDoA) (36.8%), perfluorotridecanoic acid (PFTriA) (28.8%), and perfluorotetradecanoic acid (PFTA) (24%). The associated results in sample MW-1_090518 are qualified as "J" and "UJ" based on potential low bias.

The MS/MSD for batch B212652 (MW-1_090518) exhibited a RPD above the control limit for perfluoroheptanesulfonic acid (PFHPS) (38.6%), perfluorohexanesulfonic acid (PFHxS) (85.3%), and perfluorononanoic acid (PFNA) (38.4%). The associated results in sample MW-1_090518 are qualified as "UJ" based on potential indeterminate bias.

18I0253:

VOCs by Method 8260C

The LCS for batch BI80334 exhibited a %R below the LCL for 1,1-dichloroethylene (66.5%) and tetrachloroethylene (81.3, 78.7%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" or "UJ" based on potential low bias.

The LCS for batch BI80334 exhibited a %R above the upper control limit (UCL) for vinyl chloride (161, 161%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" based on potential high bias.

The LCS/LCSD for batch BI80334 exhibited a RPD above the control limit for 1,1-dichloroethane (46.5%), 2-butanone (32%), acetone (56.6%), acrolein (46.6%), acrylonitrile (84.9%), carbon disulfide (53.6%), methyl acetate (74.6%), methyl tert-butyl ether (48%), methylene chloride (58.4%), tert-butyl alcohol (65.6%), and trans-1,2-dichloroethylene (47.7%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618,

LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The LCS for batch BI80482 exhibited a %R below the LCL for trichloroethylene (76.7%). The associated results in sample LMW15_090618 RE2 are qualified as "UJ" based on potential low bias.

The ICAL for batch YI80001 on instrument MSVOA7 exhibited a RSD above the control limit for 1,4-dioxane (28.60), acrolein (22.30), and tert-butyl alcohol (30.20). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The ICV for batch YI80001 on instrument MSVOA7 exhibited a %D above the control limit for acrolein (-67.3%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1116 on instrument MSVOA7 exhibited a %D above the control limit for 1,1,2,2-tetrachloroethane (-23.3%), 1,4-dioxane (-90.7%), acetone (36.2%), acrolein (-44.8%), bromomethane (-71.9%), chloroethane (38.1%), chloromethane (-23%), trichloroethylene (46.3%), trichlorofluoromethane (45.8%), and vinyl chloride (30.1%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

SVOCs by Method 8270D and 8270D with SIM

The CCV for batch Y8I1210 on instrument BNA #3 exhibited a %D above the control limit for 2,4-dinitrophenol (121%), 4,6-dinitro-2-methylphenol (92.1%), di-n-octyl phthalate (27.7%), and pyridine (-32.8%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The ICV for batch YI80012 on instrument BNA #5 exhibited a %D above the control limit for bis(2-ethylhexyl)phthalate (-35%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1307 on instrument BNA #5 exhibited a %D above the control limit for pentachlorophenol (125%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6010D

The LCS for batch BI80541 exhibited a %R above the upper control limit (UCL) for potassium (total) (223%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" based on potential high bias.

The LCS for batch BI80588 exhibited a %R above the upper control limit (UCL) for potassium (dissolved) (214%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" based on potential high bias.

The CRDL standard for batch Y8I1332 on instrument WinLabICP exhibited a %R above the control limit for lead (total) (137%) and nickel (total) (60.5%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1342 on instrument WinLabICP exhibited a %R above the control limit for sodium (dissolved) (113%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I1342 on instrument WinLabICP exhibited a %R above the control limit for lead (dissolved) (137%) and nickel (dissolved) (60.5%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6020B

The CCV for batch Y8I1340 on instrument WinLabICP exhibited a %R above the control limit for beryllium (dissolved) (113%) and thallium (dissolved) (117%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I2508 on instrument WinLabICP exhibited a %R above the control limit for beryllium (total) (113%) and thallium (total) (117%). The associated results in samples

LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I1340 on instrument WinLabICP exhibited a %R above the control limit for antimony (dissolved) (137%). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are qualified as "J" and "UJ" based on potential indeterminate bias.

PFAS by SOP 434-PFAAS

The LCS for batch B212652 exhibited a %R below the LCL for perfluorooctanesulfonamide (FOSA) (25.1%). The associated results in sample LMW12S_090618 are qualified as "UJ" based on potential low bias.

18I0296:

VOCs by Method 8260C

The method blank (MB) for batch BI80566 exhibited a detection of methylene chloride (2.1 ug/L). The associated results in samples MW-5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "U" based on potential blank contamination.

The LCS/LCSD for batch BI80566 exhibited a RPD above the control limit for 1,1,2,2-tetrachloroethane (23%), 1,4-dioxane (59%), acrolein (34.7%), bromomethane (47.4%), chloroethane (27.9%), chloromethane (38.9%), dichlorodifluoromethane (28%), isopropylbenzene (28.8%), trichlorofluoromethane (23.8%), and vinyl chloride (32.7%). The associated results in samples MW-5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The LCS for batch BI80566 exhibited a %R below the LCL for 1,4-dioxane (5.01, 9.21%) and n-propylbenzene (71.9%). The associated results in samples MW-5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential low bias.

The ICAL for batch YI80016 on instrument MSVOA7 exhibited a RSD above the control limit for 1,4-dioxane (28.60), acrolein (22.30), and tert-butyl alcohol (30.20). The associated results in samples MW-5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) for batch YI80016 on instrument MSVOA7 exhibited a %D above the control limit for acrolein (-67.3%). The associated results in samples MW-

5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) for batch Y8I1403 on instrument MSVOA7 exhibited a %D above the control limit for 1,1-dichloroethylene (-23.6%), 1,4-dioxane (-53.1%), acetone (-37.1%), acrolein (-33.2%), acrylonitrile (-33.3%), carbon disulfide (-28.3%), carbon tetrachloride (20.3%), chloroethane (63.9%), chloromethane (48.5%), methyl acetate (-24.7%), tert-butyl alcohol (256%), trichlorofluoromethane (67.1%), and vinyl chloride (54.6%). The associated results in samples MW-5_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The ICAL for batch YI80016 on instrument VOA No. 8 exhibited a response factor (RF) below the control limit for 1,1,2,2-tetrachloroethane (0.2220), bromodichloromethane (0.1950), chlorobenzene (0.4720), and trichloroethylene (0.1950). The associated results in samples MW-6_090718, GWTB03_090718, MW-5_090718 RE1, LMW11_090718 RE1, LMW19S_090718 RE1, and LMW19D_090718 RE1 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1703 on instrument VOA No. 8 exhibited a response factor (RF) below the control limit for 1,1,2,2-tetrachloroethane (0.2430) and bromoform (0.0710). The associated results in samples MW-6_090718, GWTB03_090718, MW-5_090718 RE1, and LMW11_090718 RE1 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1703 on instrument VOA No. 8 exhibited a %D above the control limit for 1,4-dioxane (32%) and p-isopropyltoluene (20.2%). The associated results in samples MW-6_090718, GWTB03_090718, MW-5_090718 RE1, and LMW11_090718 RE1 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1713 on instrument VOA No. 8 exhibited a response factor (RF) below the control limit for trichloroethylene (0.1940). The associated results in samples LMW19S_090718 RE1 and LMW19D_090718 RE1 are qualified as "J" and "UJ" based on potential indeterminate bias.

SVOCs by Method 8270D and 8270D with SIM

The CCV for batch Y8I1304 on instrument BNA #3 exhibited a %D above the control limit for 2,4-dinitrophenol (104%), 2,4-dinitrotoluene (22.1%), 2,6-dinitrotoluene (25.3%), 2-nitroaniline (21.4%), 3-nitroaniline (22%), 4,6-dinitro-2-methylphenol (87.6%), 4-nitroaniline (27.2%), and di-n-octyl phthalate (23.6%). The associated results in samples MW-5_090718, MW-6_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The ICV for batch YI80012 on instrument BNA #5 exhibited a %D above the control limit for bis(2-ethylhexyl)phthalate (-35%) and n-nitrosodimethylamine (-48%). The associated results in samples MW-5_090718, MW-6_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1213 on instrument BNA #5 exhibited a %D above the control limit for pentachlorophenol (62%). The associated results in samples MW-5_090718, MW-6_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6010D

The LCS for batch BI80660 exhibited a %R above the upper control limit (UCL) for potassium (dissolved) (228%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" based on potential high bias.

The MS for batch BI80625 exhibited a %R above the upper control limit (UCL) for potassium (total) (216%) and sodium (total) (137%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" based on potential high bias.

The lab duplicate and parent sample LMW19D_090718 exhibited a RPD above the control limit for aluminum (total) (34.3%), iron (total) (23.1%), and copper (dissolved) (26%). The associated results in sample LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The serial dilution for batch Y8I1429 on instrument WinLabICP exhibited a %R above the control limit for barium (total) (19.4%), iron (total) (20.6%), and manganese (total) (19%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1429 on instrument WinLabICP exhibited a %R above the control limit for aluminum (total) (88.6%), barium (total) (89.2%), calcium (total) (86.1%), chromium (total) (88.8%), cobalt (total) (88.6%), copper (total) (85.5%), iron (total) (85%), lead (total) (88.3%), magnesium (total) (86.1%), manganese (total) (88.9%), nickel (total) (87.5%), potassium (total) (88.9%), silver (total) (87.3%), vanadium (total) (87.9%), and zinc (total) (88.9%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I1429 on instrument WinLabICP exhibited a %R) above the control limit for lead (total) (45.5%) and nickel (total) (31.3%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The serial dilution for batch Y8I1430 on instrument WinLabICP exhibited a %R above the control limit for barium (dissolved) (39.6%), calcium (dissolved) (11.6%), iron (dissolved) (571%), magnesium (dissolved) (13.9%), manganese (dissolved) (38.1%), potassium (dissolved) (18.8%), and sodium (dissolved) (20.3%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CCV for batch Y8I1430 on instrument WinLabICP exhibited a %R above the control limit for aluminum (dissolved) (88.6%), barium (dissolved) (89.2%), calcium (dissolved) (86.1%), chromium (dissolved) (88.8%), cobalt (dissolved) (88.6%), copper (dissolved) (85.5%), iron (dissolved) (85%), lead (dissolved) (88.3%), magnesium (dissolved) (86.1%), manganese (dissolved) (88.9%), nickel (dissolved) (87.5%), potassium (dissolved) (88.9%), silver (dissolved) (87.3%), vanadium (dissolved) (87.9%), and zinc (dissolved) (88.9%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I1430 on instrument WinLabICP exhibited a %R above the control limit for lead (dissolved) (45.5%) and nickel (dissolved) (31.3%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

Metals by Method 6020B

The CCV for batch Y8I2711 on instrument WinLabICP exhibited a %R above the control limit for selenium (total) (85.2%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I2711 on instrument WinLabICP exhibited a %R above the control limit for selenium (total) (140%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

The CRDL standard for batch Y8I2710 on instrument WinLabICP exhibited a %R above the control limit for selenium (dissolved) (140%). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are qualified as "J" and "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

18I0168:

VOCs by Method 8260C

The LCS for batch BI80403 exhibited a %R above the upper control limit (UCL) for chloroethane (160, 151%), trichlorofluoromethane (148%), and vinyl chloride (172, 158%). The associated results in sample MW-1_090518, LMW01D_090518, MW-2_090518, GWFB01_090518, and GWTB01_090518 are non-detect; no qualifier is necessary.

The MS for sample MW-1_090518 exhibited a %R below the LCL for cis-1,2-dichloroethylene (7.3, -258%) and trichloroethylene (-1060, -1670%). The sample concentration was >4X the spiked amount; no qualification is necessary.

The MS for sample MW-1_090518 RE1 exhibited a %R below the LCL for cis-1,2-dichloroethylene (NR) and trichloroethylene (NR). The sample concentration was >4X the spiked amount; no qualification is necessary.

SVOCs by Method 8270D and 8270D with SIM

The LCS for batch BI80341 exhibited a %R above the upper control limit (UCL) for 2,3,4,6-tetrachlorophenol (164%) and pentachlorophenol (231%). The associated results in sample MW-1_090518, LMW01D_090518, MW-2_090518, LMW08S_090518, and LMW08D_090518 are non-detect; no qualifier is necessary.

The LCS for batch BI80341 exhibited a %R above the upper control limit (UCL) for 2,3,4,6-tetrachlorophenol (202, 177%) and pentachlorophenol (185%). The associated results in sample GWDUP01_090518, and GWFB01_090518 are non-detect; no qualifier is necessary.

The surrogate nitrobenzene-d5 in sample LMW01D_090518 exhibited a %R below the LCL for nitrobenzene-d5 (46%). The other two base/neutral extractable surrogates are within acceptance limits; no qualifier is necessary.

The surrogate 2-Fluorophenol in sample GWDUP01_090518 exhibited a %R below the LCL for 2-fluorophenol (17.6%). The other two acid extractable surrogates are within acceptance limits; no qualifier is necessary.

The MS for sample MW-1_090518 exhibited a %R above the upper control limit (UCL) for 2-butanone (737, 666%), chloroethane (150%), and 2,3,4,6-tetrachlorophenol (172, 147%). The associated results are non-detect; no qualifier is necessary.

Metals by Method 6010D

The method blank (MB) for batch BI80422 exhibited a detection of potassium (total) (86.1 ug/L). The associated results in sample MW-1_090518, LMW01D_090518, LMW08S_090518, LMW08D_090518, GWDUP01_090518, and GWFB01_090518 are >10X the blank concentration or non-detect; no qualification is necessary.

<u>18I0253:</u>

VOCs by Method 8260C

The LCS for batch BI80334 exhibited a %R above the upper control limit (UCL) for chloroethane (154, 156%) and trichlorofluoromethane (148, 160%). The associated results in samples MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, LMW20D_090618, and GWTB02_090618 are non-detect; no qualifier is necessary.

SVOCs by Method 8270D and 8270D with SIM

The LCS for batch BI80408 exhibited a %R above the upper control limit (UCL) for 2,3,4,6-tetrachlorophenol (183, 166%) and pentachlorophenol (203%). The associated results in sample MW-3_090618, MW-4_090618, LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are non-detect; no qualifier is necessary.

The surrogate terphenyl-d14 in sample LMW20S_090618 exhibited a %R above the upper control limit (UCL) for terphenyl-d14 (113%). The other two base/neutral extractable surrogates are within acceptance limits; no qualifier is necessary.

Metals by Method 6010D

The method blank (MB) for batch BI80588 exhibited a detection of potassium (dissolved) (58.6 ug/L). The associated results in samples LMW12S_090618, LMW12D_090618, LMW15_090618, LMW20S_090618, and LMW20D_090618 are >10X the blank concentration; no qualification is necessary.

<u>18I0296:</u>

SVOCs by Method 8270D and 8270D with SIM

The LCS for batch BI80408 exhibited a %R above the upper control limit (UCL) for 2,3,4,6-tetrachlorophenol (183, 166%) and pentachlorophenol (203%). The associated results in samples MW-5_090718, MW-6_090718, LMW11_090718, LMW19S_090718, and LMW19D_090718 are non-detect; no qualifier is necessary.

Metals by Method 6010D

The method blank (MB) for batch BI80625 exhibited a detection of calcium (total) (52.4 ug/L), iron (total) (46.5 ug/L), and potassium (total) (146 ug/L). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are >10X the blank concentration; no qualification is necessary.

The method blank (MB) for batch BI80660 exhibited a detection of iron (dissolved) (28.1 ug/L) and potassium (dissolved) (91.9 ug/L). The associated results in samples LMW11_090718, LMW19S_090718, and LMW19D_090718 are >10X the blank concentration; no qualification is necessary.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30%. The following analytes did not meet the precision criteria:

- GWDUP01_090518 and MW-1_090518: tetrachloroethylene, trichloroethylene, zinc (total), and selenium (dissolved).

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

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Senior Project Chemist

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To: Elizabeth Burgess, Langan Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: June 4, 2019

Re: Data Usability Summary Report
For 41 Kensico Drive
May 2019 Groundwater Samples
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in May 2019 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and 1,4-Dioxane by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- 1,4-Dioxane by SW-846 Method 8270D SIM

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
19E0476	19E0476-01	GWG01_050919	5/9/2019	VOCs, SVOCs, 1,4-Dioxane
19E0476	19E0476-02	GWG02_050919	5/9/2019	VOCs, SVOCs, 1,4-Dioxane
19E0476	19E0476-03	GWG03_050919	5/9/2019	VOCs, SVOCs, 1,4-Dioxane
19E0476	19E0476-04	TB_050919	5/9/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, trip blank sample results, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
GWG01_050919	8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
GWG01_050919	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
GWG01_050919	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
GWG01_050919	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
GWG01_050919	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWG01_050919	8270D	51-28-5	2,4-DINITROPHENOL	UJ
GWG01_050919	8270D	91-57-6	2-METHYLNAPHTHALENE	UJ
GWG01_050919	8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
GWG01_050919	8270D	101-55-3	4-BROMOPHENYL PHENYL ETHER	UJ
GWG01_050919	8270D	59-50-7	4-CHLORO-3-METHYLPHENOL	UJ
GWG01_050919	8270D	106-47-8	4-CHLOROANILINE	UJ
GWG01_050919	8270DSIM	1912-24-9	ATRAZINE	UJ
GWG01_050919	8270D	100-52-7	BENZALDEHYDE	UJ
GWG01_050919	8270D	111-91-1	BIS(2-CHLOROETHOXY) METHANE	UJ
GWG01_050919	8270DSIM	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	U (0.677)
GWG01_050919	8260C	74-83-9	BROMOMETHANE	UJ
GWG01_050919	8260C	56-23-5	CARBON TETRACHLORIDE	UJ
GWG01_050919	8260C	75-00-3	CHLOROETHANE	UJ
GWG01_050919	8260C	74-87-3	CHLOROMETHANE	UJ
GWG01_050919	8260C	110-82-7	CYCLOHEXANE	UJ
GWG01_050919	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
GWG01_050919	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
GWG01_050919	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
GWG01_050919	8260C	108-87-2	METHYLCYCLOHEXANE	UJ
GWG01_050919	8270D	110-86-1	PYRIDINE	UJ
GWG01_050919	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWG01_050919	8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
GWG01_050919	8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
GWG01_050919	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWG01_050919	8260C	75-01-4	VINYL CHLORIDE	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
GWG02_050919	8260C	108-67-8	1,3,5-TRIMETHYLBENZENE (MESITYLENE)	UJ
GWG02_050919	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWG02_050919	8270D	51-28-5	2,4-DINITROPHENOL	UJ
GWG02_050919	8260C	591-78-6	2-HEXANONE	UJ
GWG02_050919	8270D	91-57-6	2-METHYLNAPHTHALENE	UJ
GWG02_050919	8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
GWG02_050919	8270D	101-55-3	4-BROMOPHENYL PHENYL ETHER	UJ
GWG02_050919	8270D	59-50-7	4-CHLORO-3-METHYLPHENOL	UJ
GWG02_050919	8270D	106-47-8	4-CHLOROANILINE	UJ
GWG02_050919	8260C	67-64-1	ACETONE	UJ
GWG02_050919	8270DSIM	1912-24-9	ATRAZINE	UJ
GWG02_050919	8270D	100-52-7	BENZALDEHYDE	UJ
GWG02_050919	8270D	111-91-1	BIS(2-CHLOROETHOXY) METHANE	UJ
GWG02_050919	8260C	74-83-9	BROMOMETHANE	UJ
GWG02_050919	8260C	75-00-3	CHLOROETHANE	UJ
GWG02_050919	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
GWG02_050919	8260C	79-20-9	METHYL ACETATE	UJ
GWG02_050919	8260C	108-10-1	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UJ
GWG02_050919	8270D	110-86-1	PYRIDINE	UJ
GWG02_050919	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWG03_050919	8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
GWG03_050919	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
GWG03_050919	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
GWG03_050919	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
GWG03_050919	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
GWG03_050919	8270D	51-28-5	2,4-DINITROPHENOL	UJ
GWG03_050919	8270D	91-57-6	2-METHYLNAPHTHALENE	UJ
GWG03_050919	8270D	534-52-1	4,6-DINITRO-2-METHYLPHENOL	UJ
GWG03_050919	8270D	101-55-3	4-BROMOPHENYL PHENYL ETHER	UJ
GWG03_050919	8270D	59-50-7	4-CHLORO-3-METHYLPHENOL	UJ
GWG03_050919	8270D	106-47-8	4-CHLOROANILINE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
GWG03_050919	8270DSIM	1912-24-9	ATRAZINE	UJ
GWG03_050919	8270D	100-52-7	BENZALDEHYDE	UJ
GWG03_050919	8270D	111-91-1	BIS(2-CHLOROETHOXY) METHANE	UJ
GWG03_050919	8260C	74-83-9	BROMOMETHANE	UJ
GWG03_050919	8260C	56-23-5	CARBON TETRACHLORIDE	UJ
GWG03_050919	8260C	75-00-3	CHLOROETHANE	UJ
GWG03_050919	8260C	74-87-3	CHLOROMETHANE	UJ
GWG03_050919	8260C	110-82-7	CYCLOHEXANE	UJ
GWG03_050919	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
GWG03_050919	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
GWG03_050919	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
GWG03_050919	8260C	108-87-2	METHYLCYCLOHEXANE	UJ
GWG03_050919	8270D	110-86-1	PYRIDINE	UJ
GWG03_050919	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
GWG03_050919	8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
GWG03_050919	8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
GWG03_050919	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWG03_050919	8260C	75-01-4	VINYL CHLORIDE	J
TB_050919	8260C	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	UJ
TB_050919	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
TB_050919	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
TB_050919	8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
TB_050919	8260C	67-64-1	ACETONE	UJ
TB_050919	8260C	107-02-8	ACROLEIN	UJ
TB_050919	8260C	74-83-9	BROMOMETHANE	UJ
TB_050919	8260C	75-00-3	CHLOROETHANE	UJ
TB_050919	8260C	74-87-3	CHLOROMETHANE	UJ
TB_050919	8260C	110-82-7	CYCLOHEXANE	UJ
TB_050919	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
TB_050919	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
TB_050919	8260C	108-87-2	METHYLCYCLOHEXANE	UJ
TB_050919	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
TB_050919	8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
TB_050919	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
TB_050919	8260C	75-01-4	VINYL CHLORIDE	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The laboratory control sample and duplicate (LCS/LCSD) for batch BE90742 exhibited percent recoveries below the lower control limit (LCL) for 1,2,4-trichlorobenzene (62.9%, 71.1%), tetrachloroethylene (79.4%), 1,2,3-trichlorobenzene (51.1%, 62.8%), and hexachlorobutadiene (56.6%). The associated results in sample TB_050919 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch BE90774 exhibited percent recoveries below the LCL for tetrachloroethylene (74.9%), carbon tetrachloride (74.3%), and 1,2,3-trichlorobenzene (73.8%, 60.8%). The associated results in samples GWG01_050919 and GWG03_050919 are qualified as "UJ" based on potential low bias.

The initial calibration verification (ICV) analyzed on 4/4/2019 at 3:21 exhibited percent differences (%Ds) above the control limit for 1,4-dioxane (-79.9%), bromomethane (51.1%), and tert-butyl alcohol (-34.5%). The associated results in sample GWG02_050919 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 4/26/2019 at 5:28 exhibited %Ds above the control limit for 1,4-dioxane (-81.9%), bromomethane (61.3%), chloroethane (36.8%), chloromethane (37.2%), dichlorodifluoromethane (55.3%), trichlorofluoromethane (48.1%), and vinyl chloride (41.8%). The associated results in samples GWG01_050919, GWG03_050919, and TB_050919 are qualified as "J" or "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 5/13/2019 at 10:36 exhibited %Ds above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (-27%), acetone (64.6%), acrolein (23.4%), cyclohexane (-23.9%), methylcyclohexane (-21.8%), and tert-butyl alcohol (-24.5%). The associated results in sample TB_050919 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/13/2019 at 23:47 exhibited %Ds above the control limit for 1,1,2-trichloro-1,2,2-trifluoroethane (-36.8%), 1,2,4-trichlorobenzene (-40.8%), 1,2-dibromo-3-chloropropane (-23.2%), cyclohexane (-31.6%), hexachlorobutadiene (-39%), methylcyclohexane (-30.8%), tert-butyl alcohol (-27.7%), and trans-1,3-dichloropropylene (-20.7%). The associated results in samples GWG01_050919 and GWG03_050919 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/16/2019 at 6:02 exhibited %Ds above the control limit for 1,3,5-trimethylbenzene (20.3%), 2-hexanone (-32.8%), 4-methyl-2-pentanone (-28.9%), acetone (-23.8%), chloroethane (-23.9%), and methyl acetate (-22.6%). The associated results in sample GWG02_050919 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The LCS/LCSD for batch BE90960 exhibited relative percent differences (RPDs) above the control limit for 4-chloroaniline (38.2%), 4-chloro-3-methylphenol (43%), and 2-methylnaphthalene (43%). The associated results in samples GWG01_050919, GW02_050919, and GWG03_050919 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/4/2019 at 16:14 exhibited %Ds above the control limit for 2,4-dinitrophenol (65.8%) and 4,6-dinitro-2-methylphenol (44.2%). The associated results in samples GWG01_050919, GW02_050919, and GWG03_050919 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/16/2019 at 14:47 exhibited %Ds above the control limit for 4-bromophenyl phenyl ether (22.2%), benzaldehyde (-37.5%), bis(2-chloroethoxy)methane (-22%), hexachlorocyclopentadiene (33.9%), and pyridine (-44%). The associated results in samples GWG01_050919, GW02_050919, and GWG03_050919 are qualified as "UJ" based on potential indeterminate bias.

The method blank (MB) for batch BE90960 exhibited a detection of bis(2-ethylhexyl) phthalate (0.83 ug/l). The associated results in sample GWG01_050919 are qualified as "U" at the sample concentration based on potential blank contamination.

The CCV analyzed on 5/16/2019 at 14:20 exhibited a %D above the control limit for atrazine (57.6%). The associated results in samples GWG01_050919, GW02_050919, and GWG03_050919 are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The MB for batch BE90742 exhibited a detection of 1,2,3-trichlorobenzene (0.44 ug/l). The associated results are non-detections. No qualification is necessary.

The MB for batch BE90774 exhibited a detection of 1,2,3-trichlorobenzene (0.32 ug/l). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch BE90966 exhibited percent recoveries above the upper control limit (UCL) for 1,4-dichlorobenzene (124%), 1,3,5-trimethylbenzene (142%, 137%), 1,3-dichlorobenzene (128%, 128%), dichlorodifluoromethane (154%), and p-isopropyltoluene (136%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 5/13/2019 at 10:36 exhibited %Ds above the control limit for 1,2,3-trichlorobenzene (-49.2%), 1,2,4-trichlorobenzene (-36.5%), 1,4-dioxane (-75.8%), bromomethane (40.4%), dichlorodifluoromethane (-44.1%), and hexachlorobutadiene (-53.2%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/13/2019 at 23:47 exhibited %Ds above the control limit for 1,2,3-trichlorobenzene (-45.2%), 1,4-dioxane (-75.5%), dichlorodifluoromethane (-52.6%), and trichlorofluoromethane (-22%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/16/2019 at 6:02 exhibited %Ds above the control limit for 1,4-dioxane (-72%) and bromomethane (51.3%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The CCV analyzed on 5/16/2019 at 14:47 exhibited %Ds above the control limit for 2,4-dinitrophenol (49.6%) and 4,6-dinitro-2-methylphenol (40.3%). The associated results were previously qualified. No further action is necessary.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Tyler Chow, Langan Project Manager

From: Emily Strake, Langan Senior Project Chemist

Date: September 24, 2018

Re: Data Usability Summary Report
For 41 Kensico Drive
Soil Vapor Sample
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of one soil gas sample collected in August 2018 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The sample was analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAC registration # 10854) for volatile organic compounds (VOCs) using the analytical method specified below.

- Full List VOCs by EPA Compendium Method TO-15 and TO-15 with SIM (1/1999)

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
18H0720	18H0720-02	IA01_081418	08/14/2018	Not Analyzed
18H0720	18H0720-02	LSV22_081418	08/14/2018	VOCs

VALIDATION OVERVIEW

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Validating Volatile Organic Analysis of Ambient Air in Canister by Method TO-15" (September 2016, Revision 6) and the specifics of the method.

Validation includes reconstruction of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, canister certification, canister pressure, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, internal standard area counts, target compound identification and quantification, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
LSV22_081418	TO15	106-99-0	1,3-Butadiene	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA TO-15 and TO-15 SIM:

18H0720

LCS/LCSD BH80989 displayed a recovery greater than the upper control limit for 1,3-butadiene at 142%. The associated positive detection is qualified as "J". The LCS/LCSD also displayed recoveries greater than the upper control limit for vinyl acetate and MTBE. The associated sample results were non-detect; qualification is not necessary.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by USEPA TO-15 and TO-15 SIM:

18H0720

The continuing calibration analyzed on 8/17/18 at 17:05 displayed a %D greater than the control limit with a positive bias for 1,3-butaidene. The associated sample result was previously qualified; no further action is necessary.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All sample hold times were met and the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Elizabeth Burgess, Langan Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: June 4, 2019

Re: Data Usability Summary Report
For 41 Kensico Drive
May 2019 Surface Water Samples
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of surface water samples collected in May 2019 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals including mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), and trivalent chromium (CrIII) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- 1,4-Dioxane by SW-846 Method 8270D SIM
- PFAS by USEPA Method 537M
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6010D
- Metals by SW-846 Method 6020B
- Mercury by SW-846 Method 7473
- Cyanide by SW-846 Method 9012B
- Hexavalent Chromium by SW-846 Method 7196A
- Trivalent Chromium (calculated)

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
19E0144	19E0144-01	SW1_050219	5/2/2019	VOCs, SVOCs, 1,4-Dioxane, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII
19E0144	19E0144-02	SW3_050219	5/2/2019	VOCs, SVOCs, 1,4-Dioxane, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII
19E0144	19E0144-03	SW2_050219	5/2/2019	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII
19E0144	19E0144-04	SWDUP01_050219	5/2/2019	VOCs, SVOCs, 1,4-Dioxane, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII
19E0144	19E0144-05	SWFB01_050219	5/2/2019	VOCs, SVOCs, 1,4-Dioxane, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII
19E0144	19E0144-06	SWTB01_050219	5/2/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, “Trace Volatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-33A, “Low/Medium Volatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-35A, “Semivolatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-37A, “Polychlorinated Biphenyl (PCB) Aroclor Data Validation” (June 2015, Revision 0), USEPA Region II SOP #HW-36A, “Pesticide Data Validation” (October 2016, Revision 1), USEPA Region II SOP #HW-3a, “ICP-AES Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-3b, “ICP-MS Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-3c, “Mercury and Cyanide Data Validation” (September 2016, Revision 1), the USEPA Contract Laboratory Program “National Functional Guidelines for Organic Superfund Methods Data Review” (EPA-540-R-2017-002, January 2017), USEPA “National Functional Guidelines for Inorganic Superfund Methods Data Review” (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for PFOA and PFOS in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, standard isotope recoveries, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, serial dilutions, dual column performance, field duplicate, field blank sample results, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA’s guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as “R” are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SW1_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SW1_050219	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SW1_050219	SW8260C	591-78-6	2-Hexanone	UJ
SW1_050219	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SW1_050219	SW8260C	67-64-1	Acetone	J
SW1_050219	SW8260C	107-02-8	Acrolein	UJ
SW1_050219	SW8270DSIM	1912-24-9	Atrazine	UJ
SW1_050219	SW8270D	100-52-7	Benzaldehyde	UJ
SW1_050219	SW8260C	74-83-9	Bromomethane	UJ
SW1_050219	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SW1_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SW1_050219	SW8081B	72-55-9	P,P'-DDE	UJ
SW1_050219	8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SW1_050219	8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SW1_050219	8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
SW1_050219	SW6010B	7440-09-7	Potassium	J
SW1_050219	SW6010B	7440-23-5	Sodium	J
SW1_050219	SW6010B	7440-23-5	Sodium	J
SW1_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SW1_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SW1_050219	SW8260C	75-01-4	Vinyl Chloride	J
SW3_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SW3_050219	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SW3_050219	SW8260C	591-78-6	2-Hexanone	UJ
SW3_050219	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SW3_050219	SW8270DSIM	208-96-8	Acenaphthylene	J
SW3_050219	SW8260C	67-64-1	Acetone	UJ
SW3_050219	SW8260C	107-02-8	Acrolein	UJ
SW3_050219	SW6010B	7429-90-5	Aluminum	U (0.0565)
SW3_050219	SW8270DSIM	1912-24-9	Atrazine	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SW3_050219	SW8270D	100-52-7	Benzaldehyde	UJ
SW3_050219	SW8260C	74-83-9	Bromomethane	UJ
SW3_050219	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SW3_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SW3_050219	SW8270DSIM	91-20-3	Naphthalene	J
SW3_050219	SW8081B	72-55-9	P,P'-DDE	UJ
SW3_050219	8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SW3_050219	8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SW3_050219	8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
SW3_050219	SW6010B	7440-09-7	Potassium	J
SW3_050219	SW6010B	7440-23-5	Sodium	J
SW3_050219	SW6010B	7440-23-5	Sodium	J
SW3_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SW3_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SW3_050219	SW8260C	75-01-4	Vinyl Chloride	J
SW2_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SW2_050219	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SW2_050219	SW8260C	591-78-6	2-Hexanone	UJ
SW2_050219	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SW2_050219	SW8260C	67-64-1	Acetone	UJ
SW2_050219	SW8260C	107-02-8	Acrolein	UJ
SW2_050219	SW8270DSIM	1912-24-9	Atrazine	UJ
SW2_050219	SW8270D	100-52-7	Benzaldehyde	UJ
SW2_050219	SW8260C	74-83-9	Bromomethane	UJ
SW2_050219	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SW2_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SW2_050219	SW8270DSIM	91-20-3	Naphthalene	U (0.0526)
SW2_050219	SW8081B	72-55-9	P,P'-DDE	UJ
SW2_050219	8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SW2_050219	8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SW2_050219	8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SW2_050219	SW6010B	7440-09-7	Potassium	J
SW2_050219	SW6010B	7440-23-5	Sodium	J
SW2_050219	SW6010B	7440-23-5	Sodium	J
SW2_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SW2_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SW2_050219	SW8260C	75-01-4	Vinyl Chloride	J
SWDUP01_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SWDUP01_050219	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SWDUP01_050219	SW8260C	591-78-6	2-Hexanone	UJ
SWDUP01_050219	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SWDUP01_050219	SW8270DSIM	208-96-8	Acenaphthylene	UJ
SWDUP01_050219	SW8260C	67-64-1	Acetone	UJ
SWDUP01_050219	SW8260C	107-02-8	Acrolein	UJ
SWDUP01_050219	SW6010B	7429-90-5	Aluminum	J
SWDUP01_050219	SW8270DSIM	1912-24-9	Atrazine	UJ
SWDUP01_050219	SW8270D	100-52-7	Benzaldehyde	UJ
SWDUP01_050219	SW8260C	74-83-9	Bromomethane	UJ
SWDUP01_050219	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SWDUP01_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SWDUP01_050219	SW8270DSIM	91-20-3	Naphthalene	U (0.0923)
SWDUP01_050219	SW8081B	72-55-9	P,P'-DDE	UJ
SWDUP01_050219	8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SWDUP01_050219	8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SWDUP01_050219	8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
SWDUP01_050219	SW6010B	7440-09-7	Potassium	J
SWDUP01_050219	SW6010B	7440-23-5	Sodium	J
SWDUP01_050219	SW6010B	7440-23-5	Sodium	J
SWDUP01_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SWDUP01_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SWFB01_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SWFB01_050219	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SWFB01_050219	SW8260C	591-78-6	2-Hexanone	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SWFB01_050219	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SWFB01_050219	SW8260C	67-64-1	Acetone	UJ
SWFB01_050219	SW8260C	107-02-8	Acrolein	UJ
SWFB01_050219	SW8270DSIM	1912-24-9	Atrazine	UJ
SWFB01_050219	SW8270D	100-52-7	Benzaldehyde	UJ
SWFB01_050219	SW8260C	74-83-9	Bromomethane	UJ
SWFB01_050219	SW6010B	7440-70-2	Calcium	U (0.0672)
SWFB01_050219	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SWFB01_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SWFB01_050219	SW8081B	72-55-9	P,P'-DDE	UJ
SWFB01_050219	8082A	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
SWFB01_050219	8082A	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
SWFB01_050219	8082A	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
SWFB01_050219	SW6010B	7440-09-7	Potassium	U (0.150)
SWFB01_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SWFB01_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ
SWTB01_050219	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SWTB01_050219	SW8260C	591-78-6	2-Hexanone	UJ
SWTB01_050219	SW8260C	67-64-1	Acetone	UJ
SWTB01_050219	SW8260C	107-02-8	Acrolein	UJ
SWTB01_050219	SW8260C	74-83-9	Bromomethane	UJ
SWTB01_050219	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
SWTB01_050219	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SWTB01_050219	SW8260C	127-18-4	Tetrachloroethylene (PCE)	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The laboratory control sample and duplicate (LCS/LCSD) for batch BE90466 exhibited percent recoveries below the lower control limit (LCL) for tetrachloroethylene (71.9%, 70.9%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, SWFB01_050219, and SWTB01_050219 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch BE90466 exhibited percent recoveries above the upper control limit (UCL) for vinyl chloride (148%, 148%). The associated results in sample SW1_050219, SW3_050219, and SW2_050219 are qualified as "J" based on potential high bias.

The initial calibration verification (ICV) analyzed on 4/3/2019 at 21:08 exhibited a percent difference (%D) above the control limit for 1,4-dioxane (68.4%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, SWFB01_050219, and SWTB01_050219 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 5/8/2019 at 15:06 exhibited %Ds above the control limit for 2-butanone (59.2%), 2-hexanone (45.9%), acetone (108%), acrolein (42.7%), bromomethane (-37.4%), and tert-butyl alcohol (24.6%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, SWFB01_050219, and SWTB01_050219 are qualified as "J" or "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The ICV analyzed on 5/4/2019 at 16:14 exhibited %Ds above the control limit for 2,4-dinitrophenol (65.8%) and 4,6-dinitro-2-methylphenol (44.2%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, and SWFB01_050219 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/9/2019 at 8:02 exhibited %Ds above the control limit for benzaldehyde (-36.5%) and di-n-octylphthalate (43.4%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, and SWFB01_050219 are qualified as "UJ" based on potential indeterminate bias.

The LCS for batch BE90451 exhibited a percent recovery above the UCL for bis(2-ethylhexyl) phthalate (224%). The associated results in sample SW1_050219 are qualified as "J" based on potential high bias.

The field blank (SWFB01_050219) exhibited a detection of naphthalene (0.0947 ug/L). The associated results in sample SW2_050219 and SWDUP01_050219 are qualified as "U" at the sample concentration based on potential blank contamination.

The field duplicate and parent sample (SWDUP01_050219 and SW3_050219) exhibited an absolute difference above the RL for acenaphthylene (0.0517 ug/L) and naphthalene (2.3377 ug/L). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/10/2019 at 17:09 exhibited a %D above the control limit for atrazine (46%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, and SWFB01_050219 are qualified as "UJ" based on potential indeterminate bias.

PCBs by SW-846 Method 8082A:

The CCV analyzed on 5/10/2019 at 12:40 exhibited a %D above the control limit for PCB-1260 on the primary gas chromatography (GC) column (23.5%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, and SWFB01_050219 are qualified as "UJ" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B:

The initial calibration (ICAL) for instrument GC Dual E exhibited a relative standard deviation (RSD) above the control limit for 4,4'-DDE on the primary GC column (20.2%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, SWDUP01_050219, and SWFB01_050219 are qualified as "UJ" based on potential indeterminate bias.

Metals by SW-846 Method 6010D:

The method blank (MB) for batch BE90367 exhibited a detection of total aluminum (0.126 mg/L). The associated results in sample SW3_050219 are qualified as "U" at the sample concentration based on potential blank contamination.

The MB for batch BE90582 exhibited a detection of dissolved calcium (0.0575 mg/L). The associated results in sample SWFB01_050219 are qualified as "U" at the sample concentration based on potential blank contamination.

The field duplicate and parent sample (SWDUP01_050219 and SW3_050219) exhibited a absolute difference above the RL for aluminum (0.0874 mg/L). The associated results are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on 5/8/2019 at 15:01 exhibited percent recoveries above the UCL for total potassium (112%) and total sodium (112%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, and SWDUP01_050219 are qualified as "J" based on potential high bias.

The continuing calibration blank (CCB) (Y9E0830-CCBA) exhibited a detection of total potassium (0.17 ug/mL). The associated results in sample SWFB01_050219 are qualified as "U" at the sample concentration based on potential blank contamination.

The CCV analyzed on 5/9/2019 at 14:38 exhibited a percent recovery above the UCL for dissolved sodium (113%). The associated results in sample SW1_050219, SW3_050219, SW2_050219, and SWDUP01_050219 are qualified as "J" based on potential high bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The LCS/LCSD for batch BE90466 exhibited percent recoveries above the UCL for dichlorodifluoromethane (155%, 150%). The associated results are non-detections. No qualification is necessary.

The matrix spike and duplicate (MS/MSD) for batch BE90466 exhibited percent recoveries below the LCL for tetrachloroethylene (59.2%, 58.1%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The CCV analyzed on 5/8/2019 at 15:06 exhibited a %D above the control limit for 1,4-dioxane (51.8%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The LCS for batch BE90451 exhibited percent recoveries above the UCL for pyridine (110%), 2,3,4,6-tetrachlorophenol (205%), and 1,2,4,5-tetrachlorobenzene (126%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch BE90451 exhibited percent recoveries above the UCL for benzaldehyde (90%, 94.2%), pyridine (103%, 98.2%), di-n-octylphthalate (137%), 2,3,4,6-tetrachlorophenol

(181%, 195%), 2,6-dinitrotoluene (106%), 4-chlorophenyl phenyl ether (89.4%), hexachlorocyclopentadiene (82.8%, 88.5%), di-n-butyl phthalate (99.1%, 110%), 2,4,6-trichlorophenol (97.4%), biphenyl (diphenyl) (80.9%), and 1,2,4,5-tetrachlorobenzene (110%, 120%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The CCV analyzed on 5/9/2019 at 8:02 exhibited %Ds above the control limit for 2,4-dinitrophenol (37%) and 4,6-dinitro-2-methylphenol (36.2%). The associated results were previously qualified. No further action is necessary.

Pesticides by SW-846 Method 8081B:

The MS/MSD for batch BE90453 exhibited percent recoveries above the UCL for delta BHC (324%, 318%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The ICAL for instrument GC Dual E exhibited a RSD above the control limit for dieldrin on the secondary GC column (20.3%). The associated results were reported from the primary GC column. No qualification is necessary.

Metals by SW-846 Method 6010D:

The MS/MSD for batch BE90367 exhibited percent recoveries above the UCL for total magnesium (129%) and total calcium (165%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for batch BE90367 exhibited a percent recovery below the LCL for total sodium (-20.1%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MB for batch BE90582 exhibited a detection of dissolved potassium (0.0945 mg/L). The associated results are >10X the contamination. No qualification is necessary.

The field blank (SWFB01_050219) exhibited detections of total potassium (0.15 mg/L), total calcium (0.113 mg/L), and dissolved calcium (0.0672 mg/L). The associated results are >10X the contamination. No qualification is necessary.

The CCV analyzed on 5/8/2019 at 15:01 exhibited a percent recovery above the UCL for total aluminum (111%). The associated results are non-detections. No qualification is necessary.

The CCB (Y9E0933-CCBB) exhibited a detection of dissolved potassium (0.106 ug/mL). The associated results are >10X the contamination. No qualification is necessary.

Metals by SW-846 Method 6020B:

The CCV analyzed on 5/9/2019 at 14:19 exhibited a percent recovery above the UCL for total thallium (123%). The associated results are non-detections. No qualification is necessary.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for surface water. The following field duplicate and parent sample pairs were compared to the precision criteria:

- SWDUP01_050219 and SW3_050219

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

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Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Elizabeth Burgess, Langan Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: June 4, 2019

Re: Data Usability Summary Report
For 41 Kensico Drive
May 2019 Sediment Samples
Langan Project No.: 190046301

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of sediment samples collected in May 2019 by Langan Engineering and Environmental Services ("Langan") at the 41 Kensico Drive site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), polychlorinated biphenyls (PCBs), pesticides, metals including mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), trivalent chromium (CrIII), and total solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D
- PFAS by USEPA Method 537M
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6010D
- Mercury by SW-846 Method 7471B
- Cyanide by SW-846 Method 9012B
- Hexavalent Chromium by SW-846 Method 7196A
- Trivalent Chromium (calculated)
- Total Solids by Standard Method 2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
19E0170	19E0170-01	SED1_0-0.5	5/2/2019	VOCs, SVOCs, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII, %S
19E0170	19E0170-02	SED3_0-0.5	5/2/2019	VOCs, SVOCs, PFAS, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII, %S
19E0170	19E0170-03	SED2_0-0.5	5/2/2019	VOCs, SVOCs, PCBs, Pesticides, Metals, Hg, CN, CrVI, CrIII, %S

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-17, "Validating Chlorinated Herbicides" (December 2010, Revision 3.1), USEPA Region II SOP #HW-37A, "Polychlorinated Biphenyl (PCB) Aroclor Data Validation" (June 2015, Revision 0), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for PFOA and PFOS in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, standard isotope recoveries, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, serial dilutions, dual column performance, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SED1_0-0.5	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
SED1_0-0.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
SED1_0-0.5	SW8260C	107-02-8	ACROLEIN	UJ
SED1_0-0.5	SW8270D	1912-24-9	ATRAZINE	UJ
SED1_0-0.5	SW8270D	100-52-7	BENZALDEHYDE	UJ
SED1_0-0.5	SW8270D	92-87-5	BENZIDINE	UJ
SED1_0-0.5	SW8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ

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Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SED1_0-0.5	SW8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
SED1_0-0.5	SW8260C	74-83-9	BROMOMETHANE	UJ
SED1_0-0.5	SW8260C	75-00-3	CHLOROETHANE	UJ
SED1_0-0.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SED1_0-0.5	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
SED1_0-0.5	SW8270D	91-20-3	NAPHTHALENE	UJ
SED1_0-0.5	SW8081B	72-55-9	P,P'-DDE	UJ
SED1_0-0.5	SW8270D	87-86-5	PENTACHLOROPHENOL	UJ
SED1_0-0.5	SW8270D	110-86-1	PYRIDINE	UJ
SED1_0-0.5	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
SED1_0-0.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
SED1_0-0.5	SW8260C	75-01-4	VINYL CHLORIDE	UJ
SED3_0-0.5	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ
SED3_0-0.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
SED3_0-0.5	SW8260C	107-02-8	ACROLEIN	UJ
SED3_0-0.5	SW8270D	1912-24-9	ATRAZINE	UJ
SED3_0-0.5	SW8270D	100-52-7	BENZALDEHYDE	UJ
SED3_0-0.5	SW8270D	92-87-5	BENZIDINE	UJ
SED3_0-0.5	SW8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
SED3_0-0.5	SW8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
SED3_0-0.5	SW8260C	74-83-9	BROMOMETHANE	UJ
SED3_0-0.5	SW8260C	75-00-3	CHLOROETHANE	UJ
SED3_0-0.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SED3_0-0.5	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
SED3_0-0.5	SW8270D	91-20-3	NAPHTHALENE	UJ
SED3_0-0.5	SW8081B	72-55-9	P,P'-DDE	UJ
SED3_0-0.5	SW8270D	87-86-5	PENTACHLOROPHENOL	UJ
SED3_0-0.5	SW8270D	110-86-1	PYRIDINE	UJ
SED3_0-0.5	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
SED3_0-0.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
SED3_0-0.5	SW8260C	75-01-4	VINYL CHLORIDE	UJ
SED2_0-0.5	SW8260C	123-91-1	1,4-DIOXANE (P-DIOXANE)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SED2_0-0.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
SED2_0-0.5	SW8260C	107-02-8	ACROLEIN	UJ
SED2_0-0.5	SW8270D	1912-24-9	ATRAZINE	UJ
SED2_0-0.5	SW8270D	100-52-7	BENZALDEHYDE	UJ
SED2_0-0.5	SW8270D	92-87-5	BENZIDINE	UJ
SED2_0-0.5	SW8270D	85-68-7	BENZYL BUTYL PHTHALATE	UJ
SED2_0-0.5	SW8270D	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	J
SED2_0-0.5	SW8260C	74-83-9	BROMOMETHANE	UJ
SED2_0-0.5	SW8260C	75-00-3	CHLOROETHANE	UJ
SED2_0-0.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SED2_0-0.5	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
SED2_0-0.5	SW8270D	91-20-3	NAPHTHALENE	UJ
SED2_0-0.5	SW8081B	72-55-9	P,P'-DDE	UJ
SED2_0-0.5	SW8270D	87-86-5	PENTACHLOROPHENOL	UJ
SED2_0-0.5	SW8270D	110-86-1	PYRIDINE	UJ
SED2_0-0.5	SW8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
SED2_0-0.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
SED2_0-0.5	SW8260C	75-01-4	VINYL CHLORIDE	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The lab control sample and duplicate (LCS/LCSD) for batch BE90412 exhibited percent recoveries below the lower control limit (LCL) for tetrachloroethylene (75.9%, 77.7%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "UJ" based on potential low bias.

The initial calibration (ICAL) for instrument MS VOA 2 exhibited a relative standard deviation (RSD) above the control limit for 1,4-dioxane (33.7%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) analyzed on 4/22/2019 at 21:51 exhibited percent differences (%Ds) above the control limit for acrolein (-49.7%), dichlorodifluoromethane (51.6%), and vinyl chloride (31.1%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 5/7/2019 at 22:57 exhibited %Ds above the control limit for bromomethane (26.1%), chloroethane (24.6%), and trichlorofluoromethane (21.8%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D:

The ICAL for instrument BNA #7 exhibited a RSD above the control limit for pyridine (28.3%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 5/9/2019 at 14:55 exhibited %Ds above the control limit for 2,4-dinitrophenol (36.3%), atrazine (-41.8%), benzaldehyde (-33.1%), benzidine (-66.1%), benzyl butyl phthalate (22.6%), bis(2-ethylhexyl) phthalate (21.5%), di-n-octyl phthalate (48.7%), naphthalene (-26.7%), and pentachlorophenol (-21.8%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 are qualified as "J" or "UJ" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B:

The ICAL for instrument GC Dual E exhibited a RSD above the control limit for 4,4'-DDE (20.2%). The associated results in samples SED1_0-0.5, SED2_0-0.5, and SED3_0-0.5 from the primary gas chromatography (GC) column are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The LCS/LCSD for batch BE90412 exhibited percent recoveries above the upper control limit (UCL) for vinyl chloride (140%, 138%). The associated results are non-detections. No qualification is necessary.

The ICV analyzed on 4/22/2019 at 21:51 exhibited a %D above the control limit for 1,4-dioxane (60.7%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/7/2019 at 22:57 exhibited %Ds above the control limit for 1,4-dioxane (63.1%) and acrolein (-51.4%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D:

The ICV analyzed on 4/29/2019 at 15:38 exhibited a %D above the control limit for pyridine (-43.2%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/9/2019 at 14:55 exhibited a %D above the control limit for pyridine (-26.5%). The associated results were previously qualified. No further action is necessary.

PFAS by USEPA Method 537M:

The LCS for batch BE90321 exhibited a percent recovery above the UCL for perfluorooctanesulfonic acid (132%). The associated results are non-detections. No qualification is necessary.

PCBs by SW-846 Method 8082A:

The CCV analyzed on 5/9/2019 at 22:06 exhibited a %D above the control limit for PCB-1016 on the secondary GC column (22.6%). The associated results were reported from the primary GC column. No qualification is necessary.

Pesticides by SW-846 Method 8081B:

The ICAL for instrument GC Dual E exhibited a RSD above the control limit for dieldrin on the secondary GC column (20.3%). The associated results were reported from the other GC column. No qualification is necessary.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake, CEP
Senior Project Chemist

APPENDIX H

LABORATORY ANALYTICAL DATA REPORTS

APPENDIX I

GROUNDWATER BOUNDARY – CONCEPTUAL SITE MODEL

The conceptual site model (CSM) was built on the analysis of head, stratigraphy and dissolved phase TCE concentration across the site. The goal was to devise a conceptual model to better understand the heterogeneity of the glacial deposition at the site and to predict how this distribution affects groundwater flow. The different available data sets were integrated into a viable narrative of source of contaminants and direction of flow. Langan devised this analysis by the following steps:

1. Graphed head elevation in monitoring wells against well mid-screen elevation to determine if head data compartmentalized groundwater into distinct sub groups.
2. Project head data into a vertical cross section to devise an appropriate solution for equipotential lines to show discontinuities in the groundwater continuum. Such discontinuities underscore the approximate location of a zone of transitional permeability (permeability discontinuities). These discontinuities are marked as groundwater divides in cross sections and in map view. The discontinuities are not absolute permeability barriers; rather they possess markedly lower permeability then the surrounding stratigraphy facilitating changes in equipotential flow line geometry.
3. Define the stratigraphic cross sections with attention to the gross distributions of fines and coarse sediments as a first approximation of the subsurface stratigraphic geometry.
4. Constrain groundwater contour maps to conform to the findings of head, groundwater divide analysis and stratigraphy to understand likely groundwater flow direction and magnitude.
5. Constrain dissolved-phase TCE contours to be in line with likely flow parameters, then to review the TCE contours to determine if they are feasible and supportable by the physical principals of migration.

1.0 Head Groups - First Approximation of Compartmentation

In a typical groundwater system, the plotting of head data as mid-screen elevations (principal X axis) against groundwater elevation (y-axis) will group screens with similar heads. This can give insight to the behavior of the overall groundwater system. The two end members of this type of analysis is either a groundwater system where head data plots nearly vertical against mid-screen completion elevation suggesting a groundwater system with a strong vertical gradient (vertical flow) or where head data plots nearly horizontal against mid-screen elevation suggesting a groundwater system with a strong horizontal gradient (horizontal flow). Head data grouping suggests the wells are screened across the same groundwater continuum regardless of their individual depths. When the head data plots into several groups, it suggests multiple groundwater continuums (or regimes).

Langan's analysis showed groupings of data for groundwater elevations from three sets of monitoring wells (Figure I1):

- Group 1: MW-2, MW-3, MW-4, LMW-8S and LMW-19S
- Group 2: MW-5, MW-6, LMW-8D, LMW-12S, LMW-15, LMD-19D, and LMW-20S
- Group 3: LMW-1D, LMW-11, LMW-12D, and LMW-20D

Group 1 wells tightly pack about the 285-feet elevation and a mid-screen about 282 feet. The data points form an ellipsoid having a primary axis extending vertically. However the ellipsoid primary axis is only marginally longer than its minor one defining a tight spacing of data suggesting both a low horizontal and vertical gradient.

Group 2 wells form an ellipsoid with a long horizontal axis suggesting constrained head variation across a variable mid-screen depth. This suggests vertical or near vertical equipotential lines - predominantly horizontal flow

Group 3 wells form an ellipsoid where the principal axis crosses the graph diagonally. The path of the diagonal from high head elevation and low mid-screen elevation to low head elevation and high mid-screen elevation indicates higher head with depth. This suggests a notable vertical upward gradient suggesting the potential for upward groundwater flow.

The data for monitoring well MW-1 doesn't fit into any of the groups. Its relationship to the other groups cannot be resolved within the current data set. The monitoring well was completed in the former UST grave suggesting the data may be related to the architecture of the former UST excavation and backfilling, essentially an anthropomorphic artifact.

2.0 Equipotential Lines – Indication of Groundwater Barriers

The analysis discussed in Section 1.0 defines three groundwater compartments. This section analyzes the head data from a different view to approximate the zone of transitional permeability between the compartments. With the availability of nested well head data, the equipotential lines can be mapped in the vertical plane (X-Z). Equipotential lines (planes in three dimensions) are equivalent to groundwater contours shown in map view. As in map view, flow crosses equipotential contours at right angles from high potential (high head) to low potential (low head).

Langan plotted equipotential lines across 8 cross sections at the site (Figures 6A-6H). Cross-sections 1 through 7 (Figures 6A through 6G) were drawn in a nominal orthogonal orientation. As such they were used to plot stratigraphy (Section 3.0). Cross-sections 8 (Figures 6H), was drawn diagonal to the other cross-sections to examine the sensitivity of the analysis to direction.

Based on the curve, Langan reviewed the equipotential lines and observed the following:

- Cross-section 1 (Figure 6A) – Cross-section 1 is a west—east trending section from monitoring well MW-5 to soil boring LB26 and includes: well MW-5, well couplet LMW-12S/D, well couplet LMW-19S/D, well LMW-15, and well MW-4. The cross section shows equipotential lines, elevation 286-feet and elevation 287-feet. The changes in dips including inflections of the equipotential lines are interpreted to represent a zone of transitional permeability that is synonymous with groundwater divides for this CSM. The elevation 286-feet equipotential lines show two changes in dip: towards a sink about well couplet LMW-19S/D and towards well MW-4. The elevation 287-feet equipotential line is believed to be moving west to east after the well couplet LMW-12S/D. The area east of the couplet LMW-12S/D is resolved but the relatively flat groundwater table from well MW-5 to well LMW-12S implies a horizontalness of the line and suggests a groundwater divide separates it from the overlying shallow groundwater regime.

  The projection of divides west and east of well LMW-15 incorporates the findings from Section 1.0. Note that the head for well LMW-15 is part of Group 2 and the head for the wells LMW-19S and MW-4 fits the Group 1 data. This distinctive grouping can only be resolved if the orientation of the cross-section trend is unaligned with the trace of the groundwater divide. In essence, the groundwater divide about LMW-15 is a repeat of the same groundwater divide separating the well couplet LMW-19S/D from the couplet LMW-12S/D.

- Cross-Section 2 (Figure 6B) – Cross-section 2 is a west-east trending section from monitoring well MW-6 to monitoring well MW-2 and also includes monitoring well couplet LMW-20S/D. This cross-section projects equipotential lines elevation 287-feet, 286-feet and 285-feet. Two groundwater divides have been identified: a vertical divide east of the well couplet LMW-20S/D and a horizontal divide separating the two screened intervals of couplet LMW-20S/D. The solution to the elevation 287-feet equipotential lines suggests a very steep dip towards the couplet LMW-20S/D. This appears to be the best fit given the overall relatively flat head gradient from well MW-6 to the shallow interval of couplet LMW-20S/D. East of couplet LMW-20S/D, elevation 287-feet equipotential line also dips back towards the couplet LMW-20S/D. Further east, apparent flow is towards well MW-2 suggesting the presence of a groundwater divide. The location shown is approximate.

The basis for the horizontal groundwater divide shown in the cross-section is that the head data for the deep screen of couplet LMW-20S/D is within Group 3 of Section 1.0. This relationship suggests the presence of a groundwater divide facilitating the head difference.

- Cross-Section 3 (Figure 6C) – Cross-section 3 is a west-east trending section from monitoring well couplet LMW-19S/D to monitoring well couplet LMW-8S/D and also includes well couplet MW-1/LMW-1D. The cross section includes equipotential lines elevation 285-feet, 286-feet, 287-feet and 288-feet. The data suggest two horizontal groundwater divides. These would create the hydrologic conditions necessary to partition the head data for well LMW-8D into Group 2 (Section 1.) and that for the well LMW-1D into Group 3 (Section 1.0). There may be a hydrologic structure east of the shallow completion of couplet LMW-19S/D that explains the probable change in dip inflection between elevation 285-feet, 286-feet and 287-feet equipotential lines.
- Cross-Section 4 (Figure 6D) – Cross-section 4 is a north-south trending section from monitoring well MW-6 to monitoring well LMW-11 and also includes monitoring well MW-5. There are no couplet wells in this cross section. The groundwater table is relatively flat between wells MW-6 and MW-5 but has an inflection between wells MW-5 and LWM-11. The presence of the groundwater divide is suggested by the head grouping analysis (Section 1.0). The origin of this groundwater divide may be explained as the result of the merging of two groundwater source streams into the western shallow basin. Based on topography, there is a backfilled erosional channel that sources west of the line between wells MW6 and MW-5 as well as a backfilled erosional remnant that source to the south between LMW-11 and well couplet LMW-12S/D. If separate sand units extend both west and south of the referenced wells, then the western groundwater regime may bare an imprint of the meeting of the two separate groundwater systems within the saturated separate sands.
- Cross-Section 5 (Figure 6E) – Cross-section 5 is a north-south trending section from monitoring well couplet LMW-20S/D to soil boring LB10 and includes well couplet LMW-19S/D, well LMW-15, well MW-4, and well couplet LMW-12S/D.

The mapped equipotential lines and groundwater divide are complex in part because the trend of the cross section is not congruent with that of the trend of groundwater flow (see the discussion for cross-section 1, above). Mapped in the cross-section are equipotential lines elevation 286-feet and 287-feet. The equipotential line solution infer six groundwater divides: 1) a vertical divide between well couplets LMW-20S/D and LMW-19S/D; 2) a vertical divide between couplet LMW-19S/D and well LMW-15; 3) a vertical divide between wells LMW-15 and MW-4; 4) a horizontal divide beneath well MW-4 extending to couplet LMW-12S/D separating the two screen completions, 5) a horizontal divide separating the upper and lower screen of couplet LMW-19S/D and 6) a horizontal divide separating the upper and lower screen of couplet LMW-20S/D. The position and number of divides is based on the analysis of the head grouping complete in Section 1.0 and the solution for the equipotential lines. The abutment of horizontal and vertical groundwater divides suggests a single groundwater divide with a dip.

- Cross-Section 6 (Figure 6F) – Cross-section 6 is a north-south trending section from monitoring well MW-2 to well MW-3 and includes the well couplet LMW-8S/D. The cross-section includes equipotential lines elevation 285-feet and 286-feet. Shallow groundwater gradient is very low which suggests a near vertical geometry for equipotential lines intersecting with the water table. The near vertical dip of the shallow groundwater equipotential line would not extend into the deeper groundwater regime that includes the deeper screen of well couplet LMW-08S/D. Thus while the actual geometry of elevation 285-feet and 286-feet equipotential lines cannot be resolved, they are undoubtedly closer to horizontal rather than vertical. Coupled with the head grouping discussion of Section 1.0, a groundwater divide is located between the two screens of well couplet LMW-08S/D. .
- Cross-Section 7 (Figure 6G) – Cross-section 7 is a west-east trending section from monitoring well LMW-11 to soil boring LB09 and includes well couplet LMW-12S/D, well MW-4 and well MW-3. The cross-section maps equipotential line elevation 287-feet. The elevation 287-feet equipotential line intersects with the water table in the vicinity of well LMW-11 within the western groundwater regime (as shown); but cannot be mapped within the eastern groundwater regime. This suggests a groundwater divide between well couplet LMW-12S/D and well MW-4. A second, near horizontal divide is located between the two screen completions of couplet LMW-12S/D based on the head grouping analysis completed in Section 1.0.

- Cross-Section 8 (Figure 6H) – Cross-section 8 trends southwest to northeast from well couplet LMW-12S/D to well couplet LMW-8S/D and includes well MW-4 and LMW-15. The cross section shows elevation 285-feet, 286-feet and 287-feet equipotential lines. This cross-section was drawn to view the groundwater system outside the orthogonal geometry shown in the other cross-sections. In this projection, there are two vertical and two horizontal groundwater divides. The horizontal groundwater divides are based on the head grouping analysis of Section 1.0. The vertical groundwater divides account for the head drop between wells MW-4 and LMW-15 and between well LMW-15 and well couplet LMW-8S/D.

Based on the equipotential study, the data is interpreted to indicate a groundwater divide is physically separating the following sets of wells in map view:

- LMW-20S/D and MW-2
- LMW-20S/D and LMW-19S/D
- LMW-19S/D and MW-1/LMW-1D
- LMW-19S/D and LMW15
- LMW15 and MW-1/LMW-1D
- LMW15 and MW-4
- LMW12S/D and MW-4
- LMW-12S/D and LMW-19S/D

3.0 Stratigraphic Geometry

The site is set within a northeast to southwest trending leg of Branch Brook, a tributary of the Kisco River. The basin has an asymmetric topographic structure with a relatively steeper prominent northwest wall compared to its southeast opposite (Figure I0). The site itself is on a relatively broad plane formed by the confluence of Branch Brook and a remnant stream that formerly drained into the ancestral Branch Brook through a northwest to southeast trending fork. Based on the topography map, the former stream now drains to the west directly into the Kisco River, a consequence of stream capture. This fork confluence probably underlies the northeast-southwest trending stratigraphic geometry that is observed in the cross-sections.

Deposition in area of the site is probably a compiling of several depositional events that combined to produce the underlying stratigraphic profile: A lacustrine depositional event, probably during the retreat of the last glacier that deposited the initial olive gray to gray clays and silts over the glacial modified river valley. Upon the final retreat of the glaciers, a resultant river system emerged which both eroded into the lacustrine clays and silts and following reworking, deposited inter-beds of clays and silts (fines) with fine to medium sands (coarse). The confining strong topographic relief on the northwest side of the valley coupled with the influence of drainage from the northwest fork would control the deposition geometry resulting in relatively short thin inter-beds where the course material would be ensconced within a larger fines stratigraphy. This depositional event is the probable origin of the vertical groundwater divide discussed previously which trends approximately south to north at the center of the site.

Following the deposition of the interbedded clays, silts and sands, the ancestral Branch Brook modified the site's underlying stratigraphy eroding into the interbedded fines and coarse material creating the essence of southwest-northeast channel geometry observed in the cross sections. In this modification, the channels were subsequently backfilled with deposits of predominantly coarse material. These deposits are probably relatively thick beds of sands interbedded with thin strata of clay. It is doubtful the bedding planes would survive the soil sampling methods employed. In addition, the influence of the northwest wall topographic relief and the influx of deposits from the stream draining into the Branch Brook from the northwest fork would complicate completely resolving the axis and trace of the channel or channels.

The most recent depositional events to the site were probably limited to reworking of shallow stratigraphy, intermittent flooding of Branch Brook resulting in the sculpting of terraces along the valley floor. However, surface traces of the terraces may have been obliterated by site development.

The borehole logs utilized for the stratigraphy study were based on direct push and sonic technologies. As such, depth control is fair at best. In addition, both methods tend to disturb non-cohesive to partially cohesive soil samples as well as fully saturated soil samples. Soil logging for the investigation followed visual-manual method outlined in the ASTM D 2488. This method is not ideal for identifying marker beds or strata that can be mapped across a site based on a distinctive profile. The method is better suited for tracing gross units of sediment packages across adjacent soil borings. Such methods are imprecise and subjective; but still useful for understanding the stratigraphic geometry of a site.

Regardless of the soil collection system employed, interpreting the stratigraphic geometry of site borehole logs is hampered by the random alignment of soil boring locations with respect to the site's underlying stratigraphic geometry. The decoupling of cross section orientation with the stratigraphic geometry can unintentionally either hide or repeat strata sequences.

The available data did not include the boring logs for the monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. Langan advanced adjacent soil borings to collect soil information for wells MW1, MW-2, MW-3 and MW-6 in accordance with the following table:

Well ID	Soil Boring ID
MW-1	LMW-1D
MW-2	LB07
MW-3	LB09
MW-6	LB23

Langan created the stratigraphic cross-sections using the same sequence of boring cross-sections discussed in Section 2.0 with the exception of cross-sections 8 and 8'. These cross sections were created to test the sensitivity of the equipotential analysis. The groundwater divides identified in Section 2.0 were including in the stratigraphic cross sections as a first approximation of the stratigraphic underpinning for the groundwater divide.

The following discussion summarizes the observations made:

- Cross-Section 1 (Figure 6A) – This cross section highlights three possible channel deposit geometries: shallow channel deposit (sand) from boring LB14 to boring LB12, shallow channel deposit (sand) between boring LB24 and LB26, and a deeper channel centered on boring LB12 potentially extending to boring LB19. Of note is that the vertical groundwater divides show major changes in the sand/fine package assemblages between borings LB12 and LB19, LB19 and LB15 and LB15 and LB24. The changes in package assembly suggest a complex stratigraphy that wasn't captured by the existing boreholes. However the horizontal groundwater divide appears to correspond to a fines package extending from boring LB13 through boring LB14 and boring LB12 to LB19.
- Cross-Section 2 (Figure 6B) – This cross section shows a possible channel sand geometry east of boring LB20. The channel may extend just to the west of LB20 (approximate elevation 280-285-feet). The groundwater divide ascertained from groundwater head was measured in deeper sand (approximate elevation 250-255-

feet) and this data clearly correlates with the western shallow groundwater regime. The horizontal groundwater divide separating the shallow and deep screens of LMW-20S/D may correlate with a fine sediment package that makes up most of the shallow screen in well LMW-20S.

- Cross-Section 3 (Figure 6C) – This cross-section highlights a poignant channel sand geometry east of boring LB-19. The horizontal groundwater divides do correlate with a fine unit beneath the channel sand. The fine unit package also separates the shallow and deeper screens of LMW-19S/D underscoring its influence on groundwater head distribution.
- Cross-Section 4 (Figure 6D) – The geometry of the sand units cannot be solved within this cross sections. The current data only highlights the complexity of stratigraphy and the abundance of fine unit packages within the shown boring logs.
- Cross-Section 5 (Figure 6E) – This cross section suggests several channel sand geometries as well as a complex stratigraphy. As discussed in Section 2.0, the three vertical groundwater divides may be an artifact of the differing orientations between the trace of a single groundwater divide and the cross section trace. The shallow sand channel geometry identified in borings LB20 and LB17 may include the shallow sand units of boring LB-15. In addition, the shallow sand unit package of boring LB-19 may extend east into the channel sand geometry identified in borings LB-12 and LB-10. While this connection would explain the head data for well LMW-19S being part of the eastern groundwater regime, it is insufficient to understanding the high dissolved-phase TCE concentration reported in groundwater from this well. The mapped horizontal groundwater divides to correspond to fine unit packages.
- Cross-Section 6 (Figure 6F) - This cross-section suggests a shallow channel geometry between the couplet LMW-8S/D and MW-3 and a deeper sand channel extending from boring LB25 to boring LB8. A series of fine unit packages in LB8 does support that the deep screen of well LMW-8D is part of a deeper third groundwater compartment.
- Cross-Section 7 (Figure 6G) – This cross-section clearly shows the geometry of a channel sand tracing the western side of the site centered on the well couplet LMW-12S/D. The vertical groundwater divide cannot be stratigraphically resolved; however the horizontal groundwater divide between the two screens of couplet LMW-12S/D appears to correspond to a fine unit package.

4.0 Groundwater Contour Maps

In section 1 through 3, a hydrogeologic model was constructed that specifies three defined groundwater compartments. Vertical projection of head data defined a zone of transitional permeability that define the compartments. Essentially, there are two shallow groundwater compartments that can be defined geographically as western and eastern compartments. The vertical projection of head data demonstrated the probable location of the zone of transitional permeability based on vertical contouring head between adjacent monitoring wells. There is also a semblance of a 3rd groundwater compartment that defines deeper groundwater. The stratigraphic analysis showed that the shallow compartments coincide with channel type structures and in the vicinity of the well couplet LMW-19S/D, the zone of transitional permeability is shown as the stratigraphic signature of a paleo geological channel wall.

The findings were incorporated into contouring the water table. The most probable contouring of the data consistent with the findings of the CSM is shown in Figure 4A. As shown, both groundwater compartments have a northeast flow direction suggesting that recharge is further to the southwest.

In Figure 4A, the CSM does not include head data from the wells MW-1 and LMW-19S. As discussed in Section 1.0, groundwater elevation for well MW-1 is inconsistent with any adjacent well elevation trend. It represents a localize groundwater sink that lacks a stratigraphic explanation. The history of well MW-1 was that it was advanced in the former UST excavation vault. Therefore, the inconsistent groundwater elevation is probably an anthropomorphic attribute related to the remnant structure of the former UST vault.

As stated above, the head data for well LMW-19S was not used to contour the data for Figure 4A. In Figure I18, the east side of the site groundwater was contoured with the influence of head data from LMW-19S for comparison. The contours on the right show that head data from well LMW-19S gives a distinctive bias contouring suggesting that the east side of the site is recharged directly through the zone of transitional permeability. The CSM doesn’t discount a contribution across the zone of transitional permeability; hydraulically, the zone is equivalent to aquitard (leaking confining zone). Rather, the head data in well LMW-19S is higher than any other water table well because that area of the zone cannot dissipate leakage fast enough, and thus the head data is an artifact of the well’s location within the zone of transitional permeability and should not be included in the groundwater contouring.

As a general note, the direction of groundwater flow in the shallow compartments is antithetical to the direction of drainage of Branch Brook. The CSM indirectly acknowledges this and attributes the counterintuitive pattern to a combination of the localized stratigraphical and topographical constraints. In essence, flow direction is to the northeast in both compartments because the flow paths are bounded stratigraphically to this pathway, an outcome of the site's topography (juncture of a former confluence of two streams).

Figure I19 is a projection of the deeper completion head data into map view with contouring. While the data suggests the deeper compartment has a groundwater flow direction toward the southwest which is congruent with the drainage pattern of Branch Brook, the data is constrained to mostly an area incorporating the previously study zone of transitional permeability.

5.0 TCE Contouring

Langan used the dissolved-phase TCE in groundwater to test the applicability of the CSM. The assumption in this analysis is that constraining contaminant transport to the CSM groundwater model should produce a consistent narrative. The contour TCE data for the sites western and eastern groundwater compartments is shown in Figure I20.

The data was contoured in base 10. This is an acceptable constraint in contouring when the data varies over several orders of magnitude. It captures the overall site condition rather than concentrating the view on the "bull's eye." The data set considered in this projection includes dissolved-phase TCE in well LMW-19S. As discussed in Section 4.0, the CSM attributes the head of this well to leakage across the zone of transitional permeability. The leakage across the zone also carries a dissolved phase constituents resulting in the dissolved-phase TCE concentrations noted in groundwater from well LMW-19S. Therefore, the 10,000 ppm isocline is extended into the zone of transitional permeability as shown in Figure I20. The resulting interpretation is consistent with the groundwater flow model including leakage across the zone of transitional permeability between the two shallow groundwater compartments. Thus, the dissolved-phase TCE in groundwater is being carried by groundwater flow and its source traces back to an off-site source to the southwest.

On site, the dissolved phase is leaking across the zone of transitional permeability between the two groundwater compartments as the zone isn't absolute as discussed in Section 4.0. As such, the impact of dissolved-phase TCE in groundwater within the eastern groundwater compartment appears to be significantly less than in the western groundwater compartment.

Section 6.0 Summary CSM

The following narrative summarizes the CSM for this site.

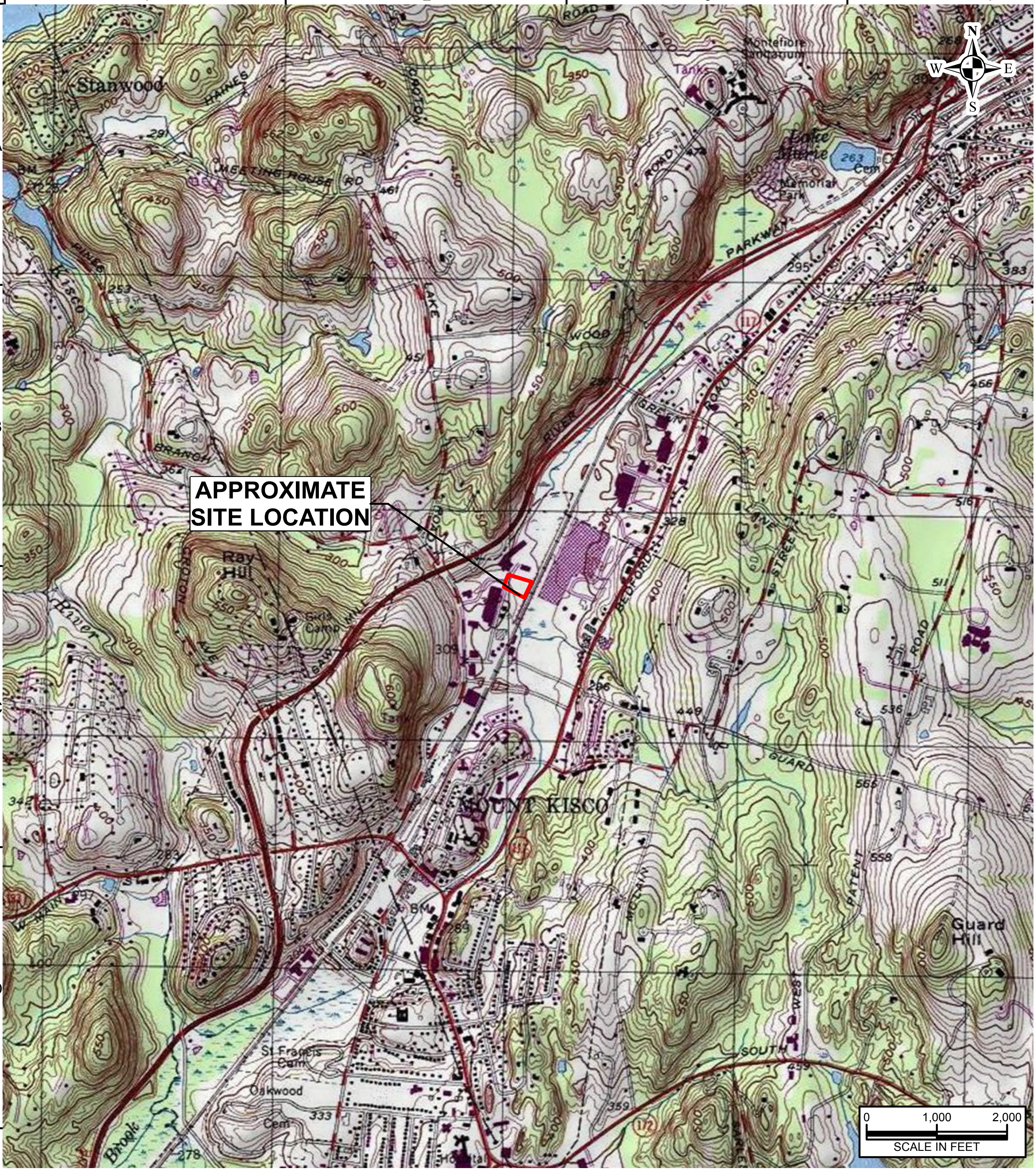
There are three established groundwater compartments: two shallow dividing the site into eastern and western groundwater units. There are also indications of a deeper compartment based on the higher heads for deeper screens. The zone of transitional permeability segregating the shallow compartments is a ridge of predominantly fine grained material (clay and silt) containing fines encapsulated coarse grained units.

The zone of transitional permeability unit separating the two compartments has been approximately located using an equipotential line cross section study. This zone appears to have a sinusoidal profile. It has an overall north-south orientation but outside the center of the site (centered about couplet LMW-19S/D), the trace of the unit cannot be resolve stratigraphically although is clearly discernible in the distribution of head.

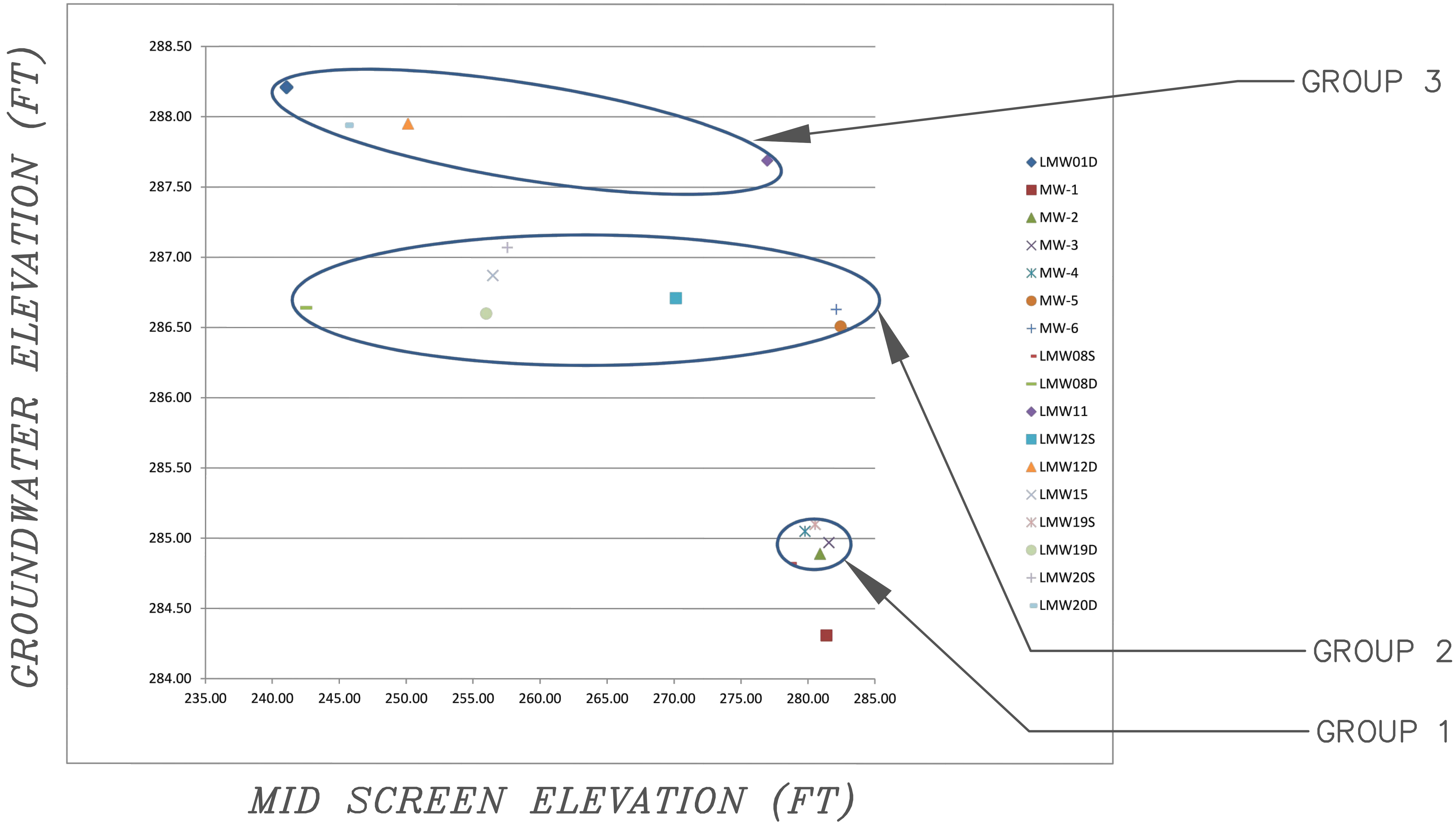
The stratigraphy shows channel like geometry underlying the western side of the site and is suggested by the limited stratigraphic data available to resolve the eastern side of the site. However, the drainage valley's topography and the site's position within the confluence of a paleo-drainage pattern complicate the full resolution of the site's stratigraphic geometry.

Imprinting the CSM into the groundwater contours shows a flow pattern of southwest to northeast in both shallow groundwater compartments with potential leakage across the zone of transitional permeability from high head in the western unit to lower head in the eastern unit. The resulting groundwater contours are both characterized by relatively low gradients on the order of 0.002 ft/ft. The cross over gradient is about an order of magnitude higher; but flow is less because the zone is composed of predominantly fines (clay and silt).

The dissolved-phase TCE in groundwater contours map out consistently with the groundwater gradient. The contours show likelihood that the source of the TCE is southwest of the site and transport across the site is consistent with the constraints imposed upon groundwater flow by the CSM.



LANGAN 21 Penn Plaza, 360 West 31st Street, 8th Floor New York, NY 10001-2727 T: 212.479.5400 F: 212.479.5444 www.langan.com Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International Collectively known as Langan NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400	Project 41 KENSICO DRIVE BLOCK No. 1, Lot No. 2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SITE LOCATION MAP Spatial Reference: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet	Project No. 190046301 Date 12/5/2018 Scale 1:2,000 Drawn By Site Analyzer Submission Date 12/05/2018	I0



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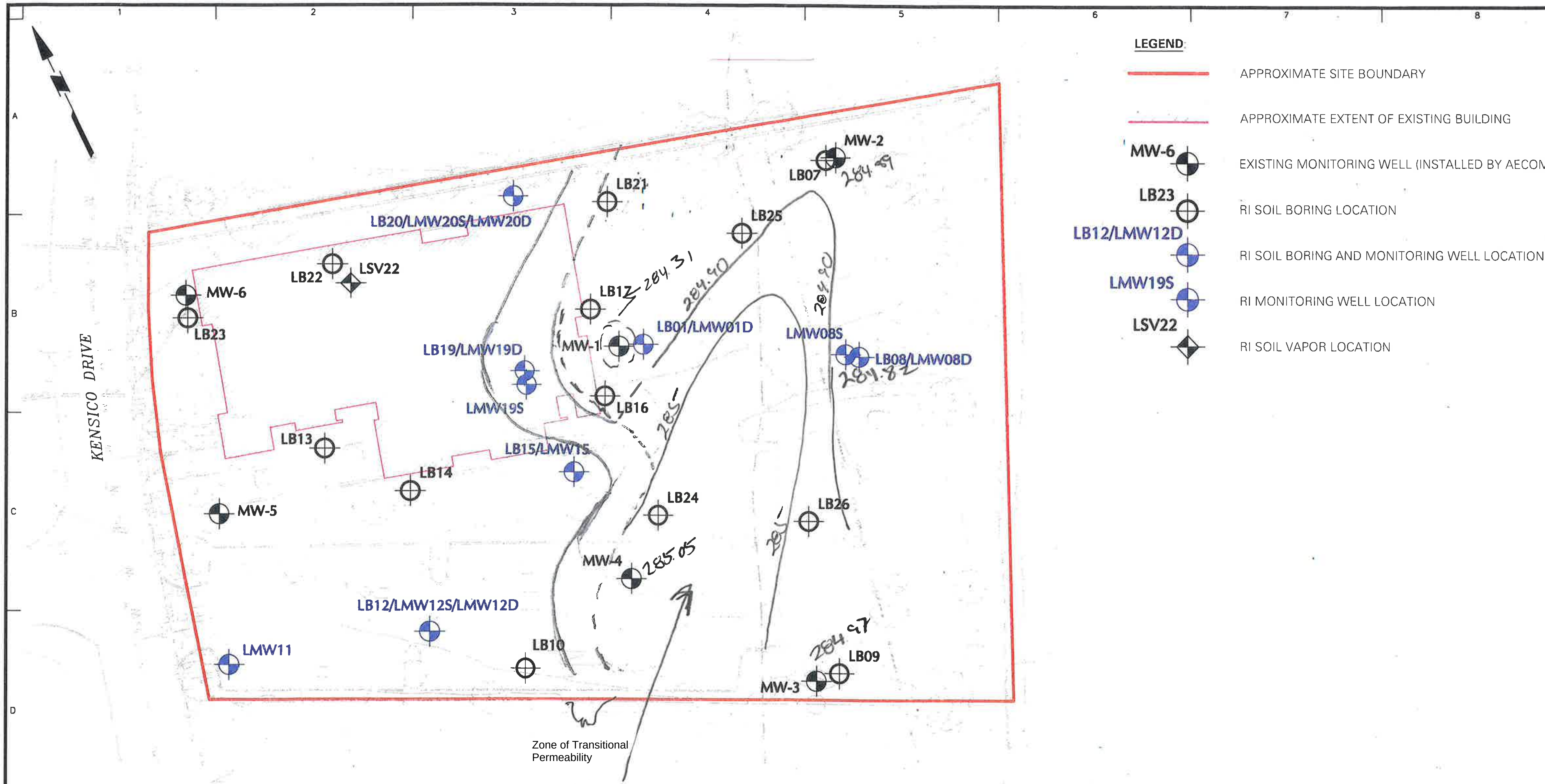
Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\RIR CSM\Figure 1 - Group Head Data.dwg Date: 10/25/2018 Time: 11:40 User: ktwombly Style Table: Langan.stb Layout: Layout1



NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLES "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE OBTAINED FROM GROUND SURVEY PREFORMED BY LANGAN IN SEPTEMBER 2018.
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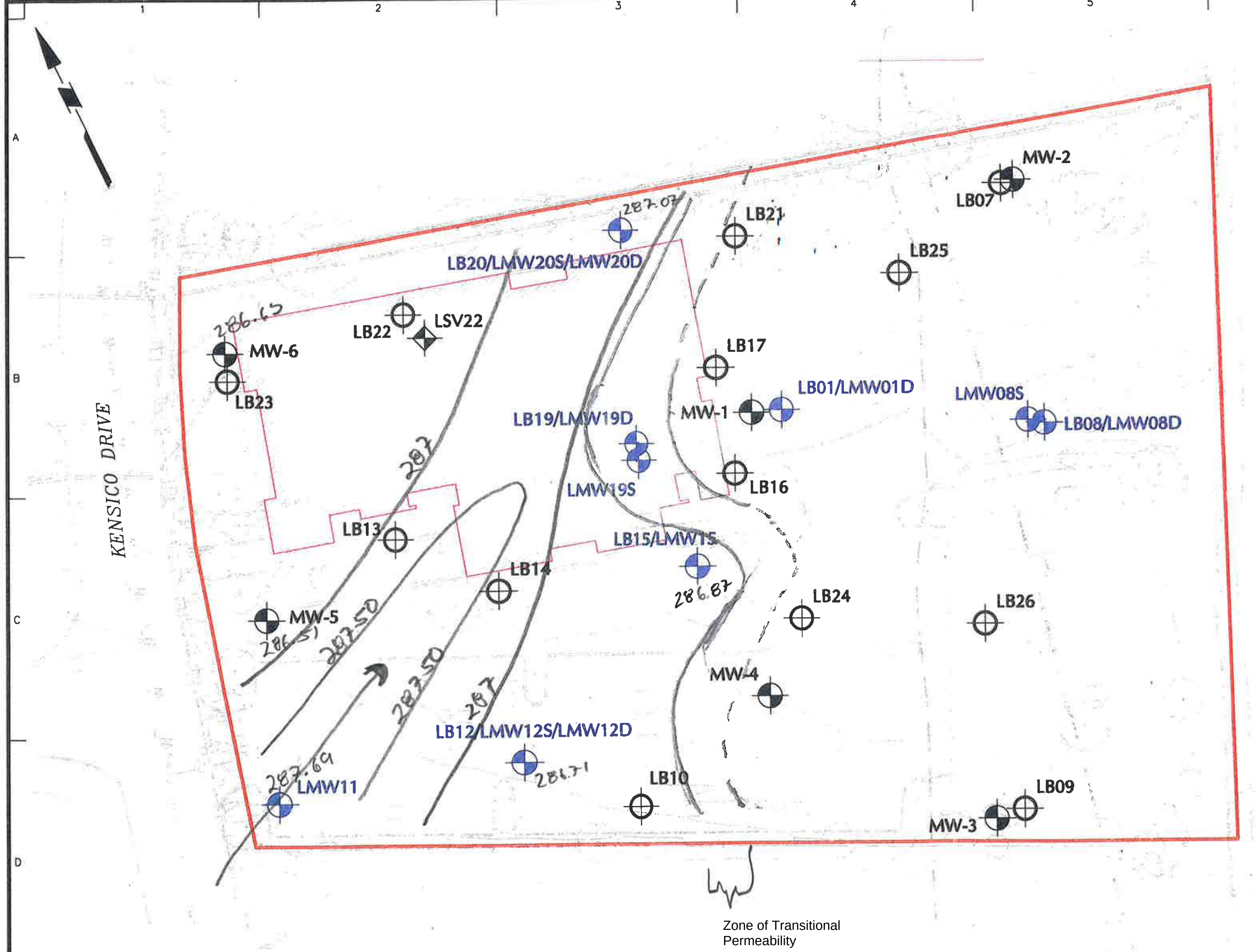
FIGURE 4A (right)



LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING BUILDING
- MW-6 — EXISTING MONITORING WELL (INSTALLED BY AECOM)
- LB23 — RI SOIL BORING LOCATION
- LB12/LMW12D — RI SOIL BORING AND MONITORING WELL LOCATION
- LMW19S — RI MONITORING WELL LOCATION
- LSV22 — RI SOIL VAPOR LOCATION

NOTES:

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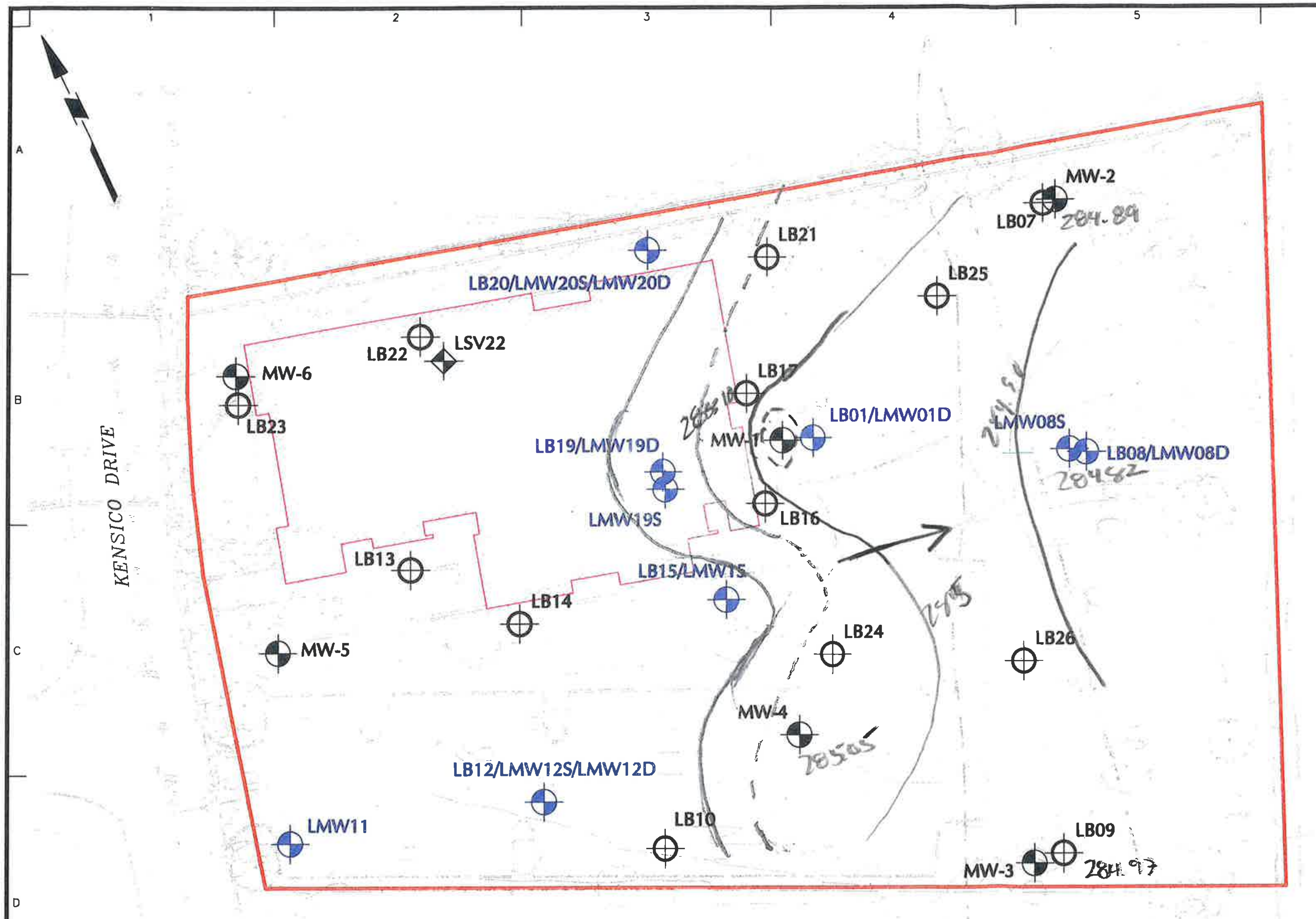
FIGURE 4A (left)

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\Figure 2 - Sample Location Map.dwg Date: 9/25/2018 Time: 10:16 User: jyanowitz Style Table: Langan.stb Layout: Layout1



LEGEND:

APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

MW-6 EXISTING MONITORING WELL (INSTALLED BY AECOM)

LB23 RI SOIL BORING LOCATION

LB12/LMW12D RI SOIL BORING AND MONITORING WELL LOCATION

LMW19S RI MONITORING WELL LOCATION

LSV22 RI SOIL VAPOR LOCATION

East Shallow w/ 19S

Deep

NOTES:

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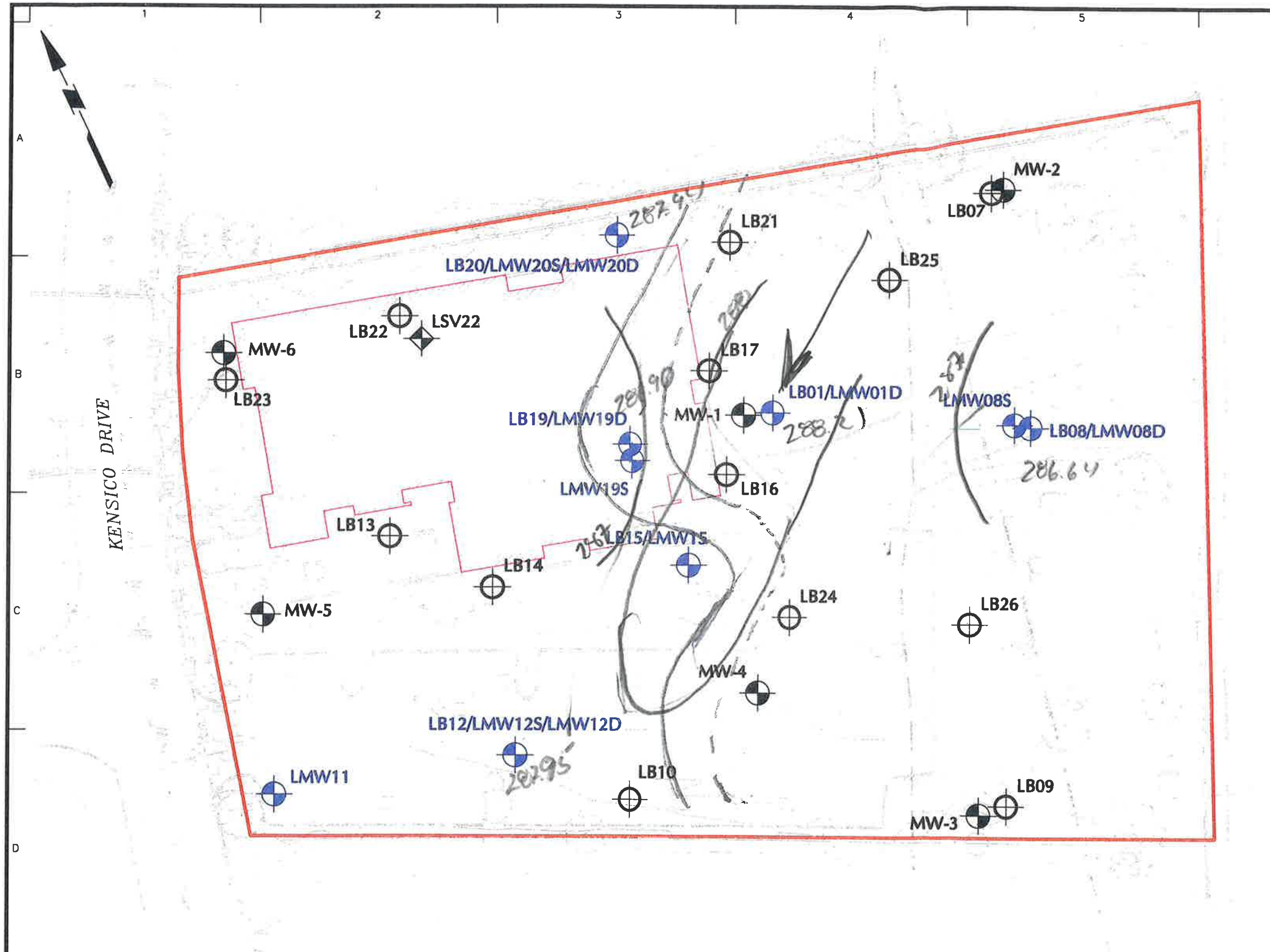
FIGURE I18

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\Figure 2 - Sample Location Map.dwg Date: 9/25/2018 Time: 10:16 User: jyanowitz Style Table: Langan.stb Layout: Layout1



Deep Completions

LEGEND

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING BUILDING
- MW-6 — EXISTING MONITORING WELL (INSTALLED BY AECOM)
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- LMW19S — RI MONITORING WELL LOCATION
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NOTES:

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FIGURE I19

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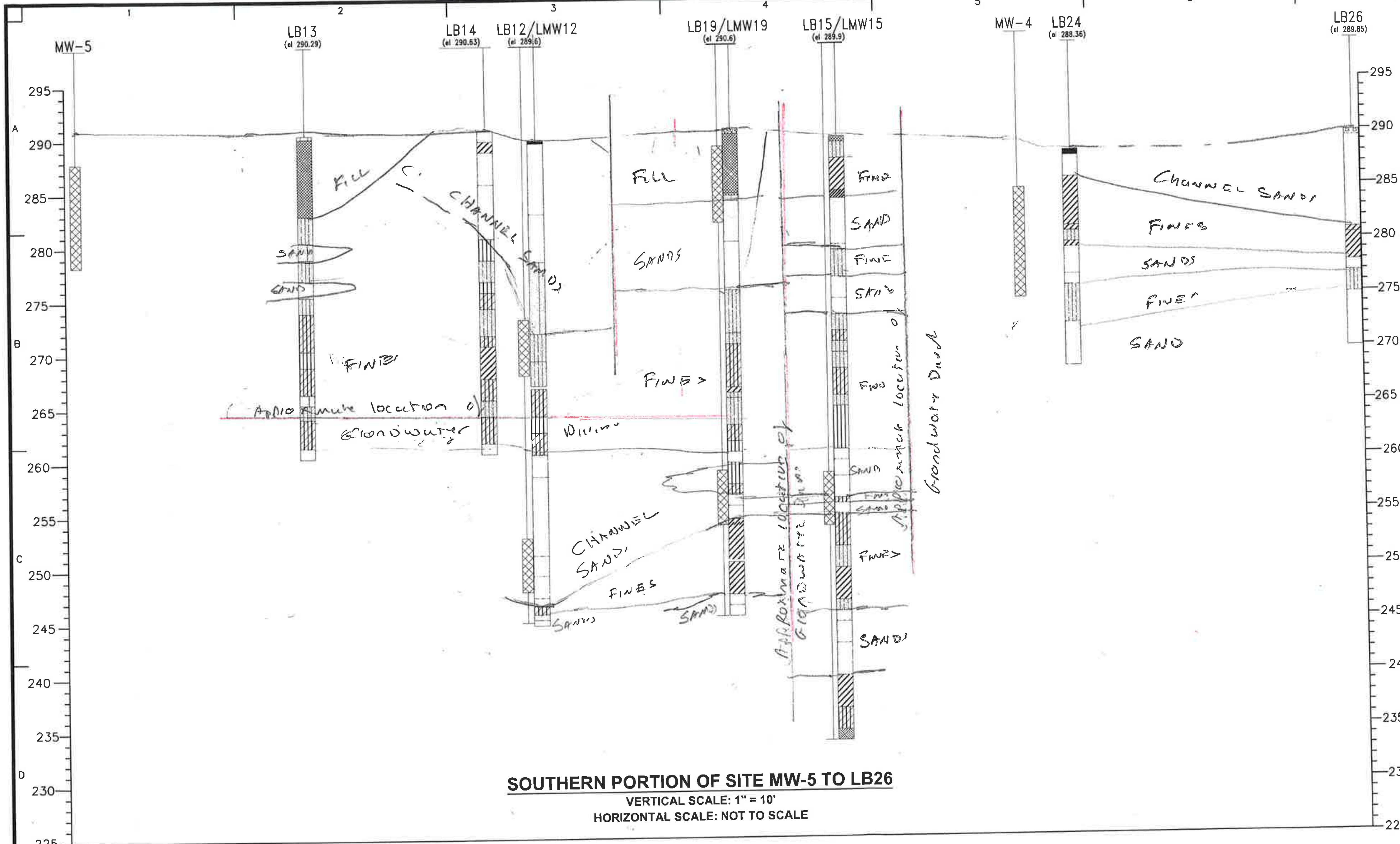

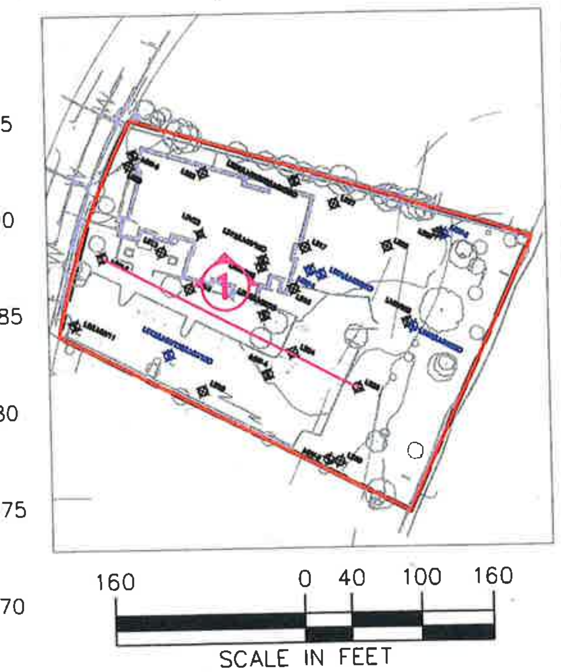

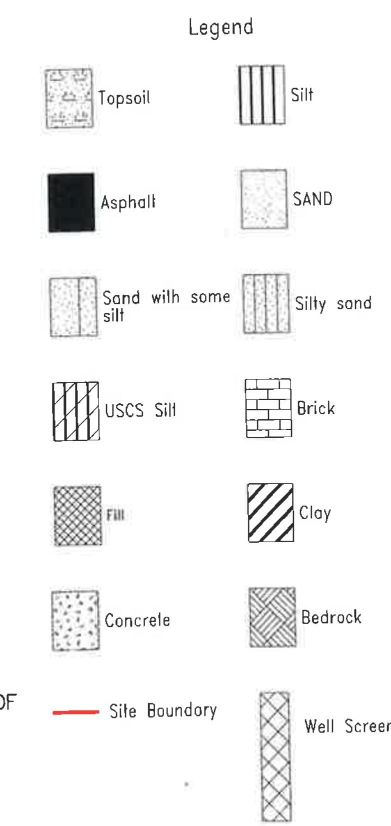

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4. SUBSURFACE STRATIGRAPHY INTERPRETED FROM RECOVERED SOIL SAMPLES. REFER TO BORING LOGS (APPENDIX C) FOR ADDITIONAL INFORMATION.
5. BOREHOLES ARE SCALED RELATIVE TO THE CROSS SECTION ORIENTATION.

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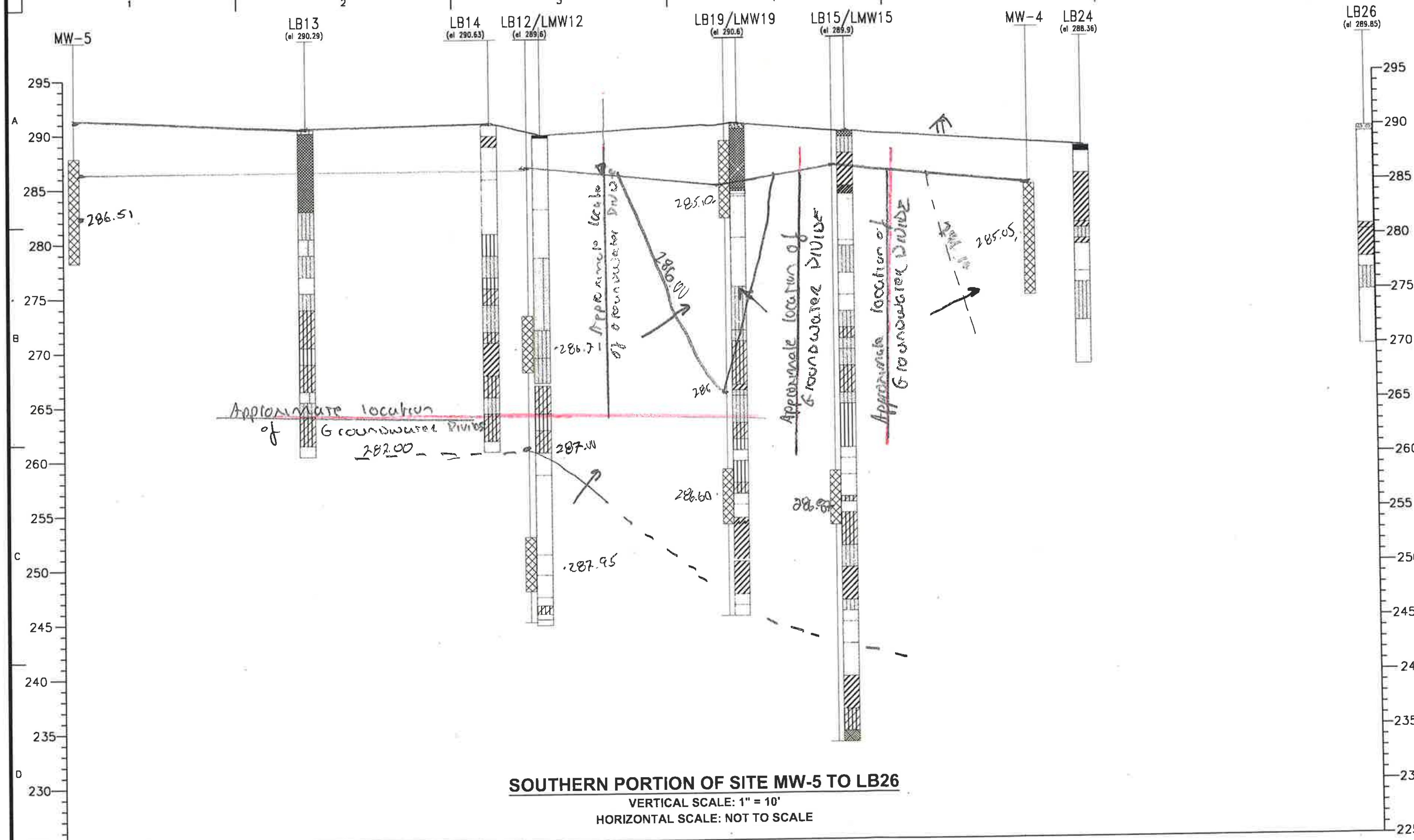
Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\2D-DesignFiles\Environmental\190046301-N-XS0101.dwg Date: 11/8/2018 Time: 13:51 User: ktwombly Style Table: Langan.stb Layout: STRATA-1



SOUTHERN PORTION OF SITE MW-5 TO LB26
VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE

Legend

Topsoil	Silt
Asphalt	SAND
Sand with some silt	Silty sand
USCS Silt	Brick
Fill	Clay
Concrete	Bedrock
Site Boundary	Well Screen

NOTES:
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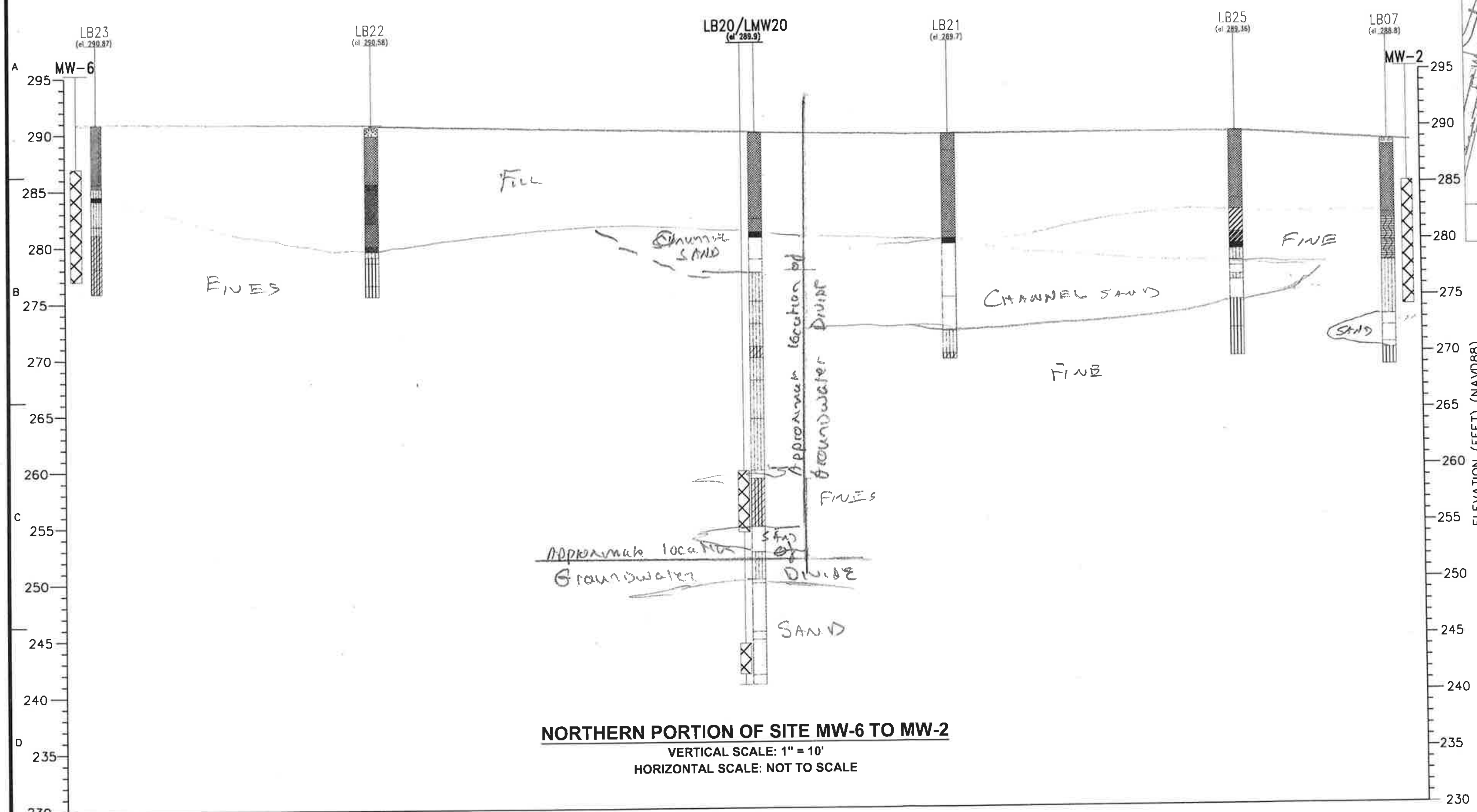
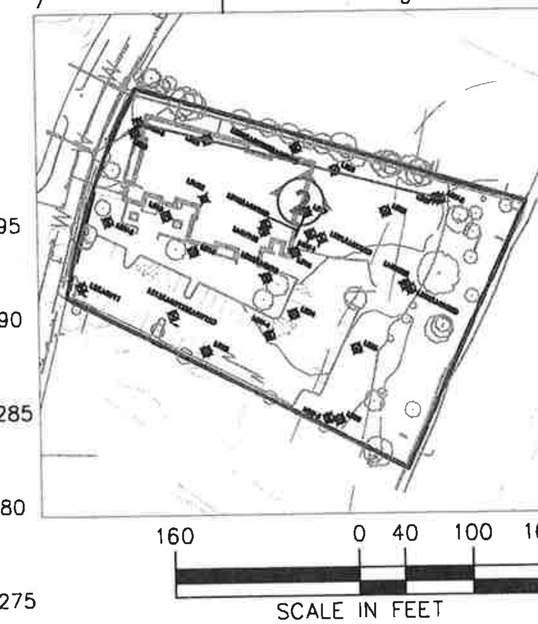
Project	Drawing Title	Project No. 190046301	Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 1	Date 11/08/2018 Drawn By KT Checked By TC	6A Sheet 6A of 9

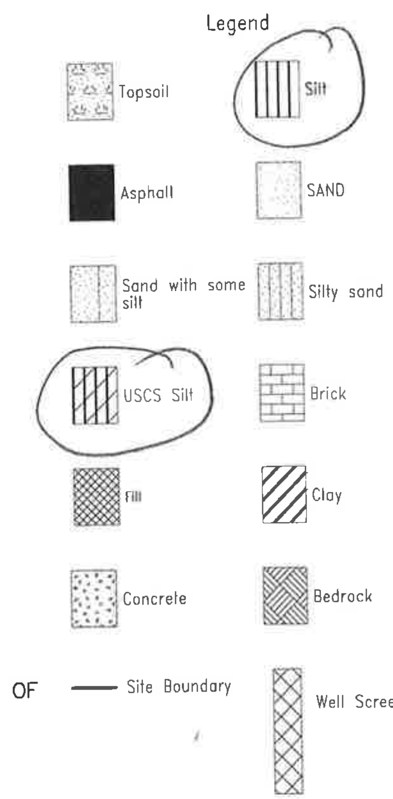
Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\2D-DesignFiles\Environmental\190046301-N-XS0101.dwg Date: 11/8/2018 Time: 13:51 User: ktwombly Style Table: Langan.stb Layout: STRATA-1



NORTHERN PORTION OF SITE MW-6 TO MW-2

VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE





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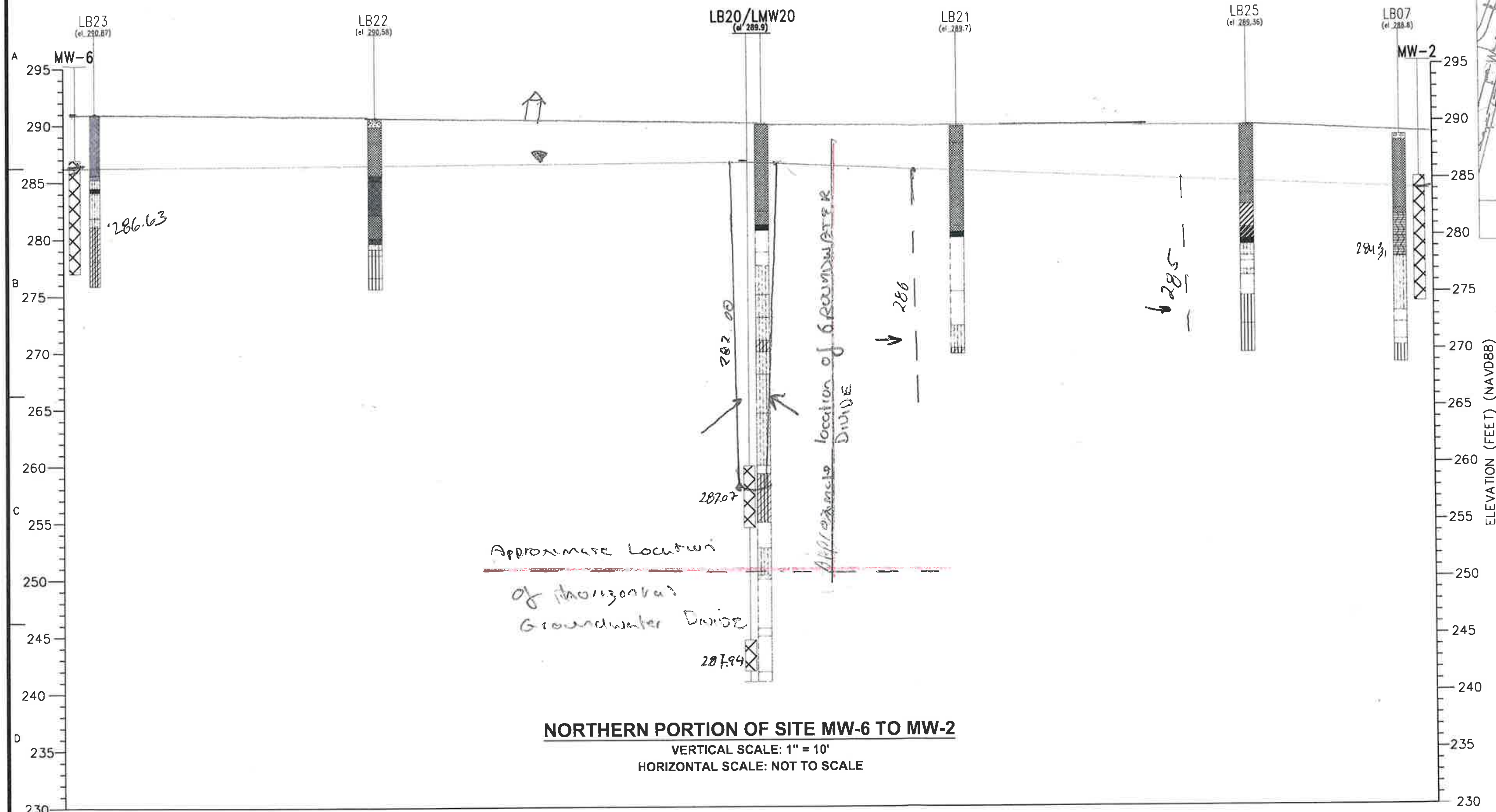
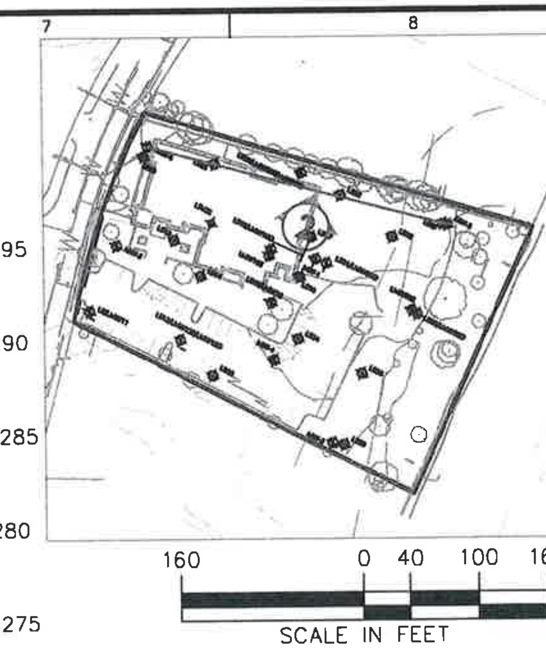
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 2	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6B Sheet 6B of 9

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\2D-DesignFiles\Environmental\190046301-N-XS0101.dwg Date: 11/8/2018 Time: 16:10 User: ktwombly Style Table: Langan.stb Layout: STRATA-2



NORTHERN PORTION OF SITE MW-6 TO MW-2

VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE



Ground-water Divide

Equipotential Line

Flow Line Direction

Legend

Topsoil | Silt | Asphalt | SAND | Sand with some silt | Silty sand | USCS Silt | Brick | Fill | Clay | Concrete | Bedrock | Site Boundary | Well Screen

NOTES:

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4. SUBSURFACE STRATIGRAPHY INTERPRETED FROM RECOVERED SOIL SAMPLES. REFER TO BORING LOGS (APPENDIX C) FOR ADDITIONAL INFORMATION.
5. BOREHOLES ARE SCALED RELATIVE TO THE CROSS SECTION ORIENTATION.

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Project	Drawing Title	Project No. 190046301	Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 2	Date 11/08/2018 Drawn By KT Checked By TC	6B Sheet 6B of 9

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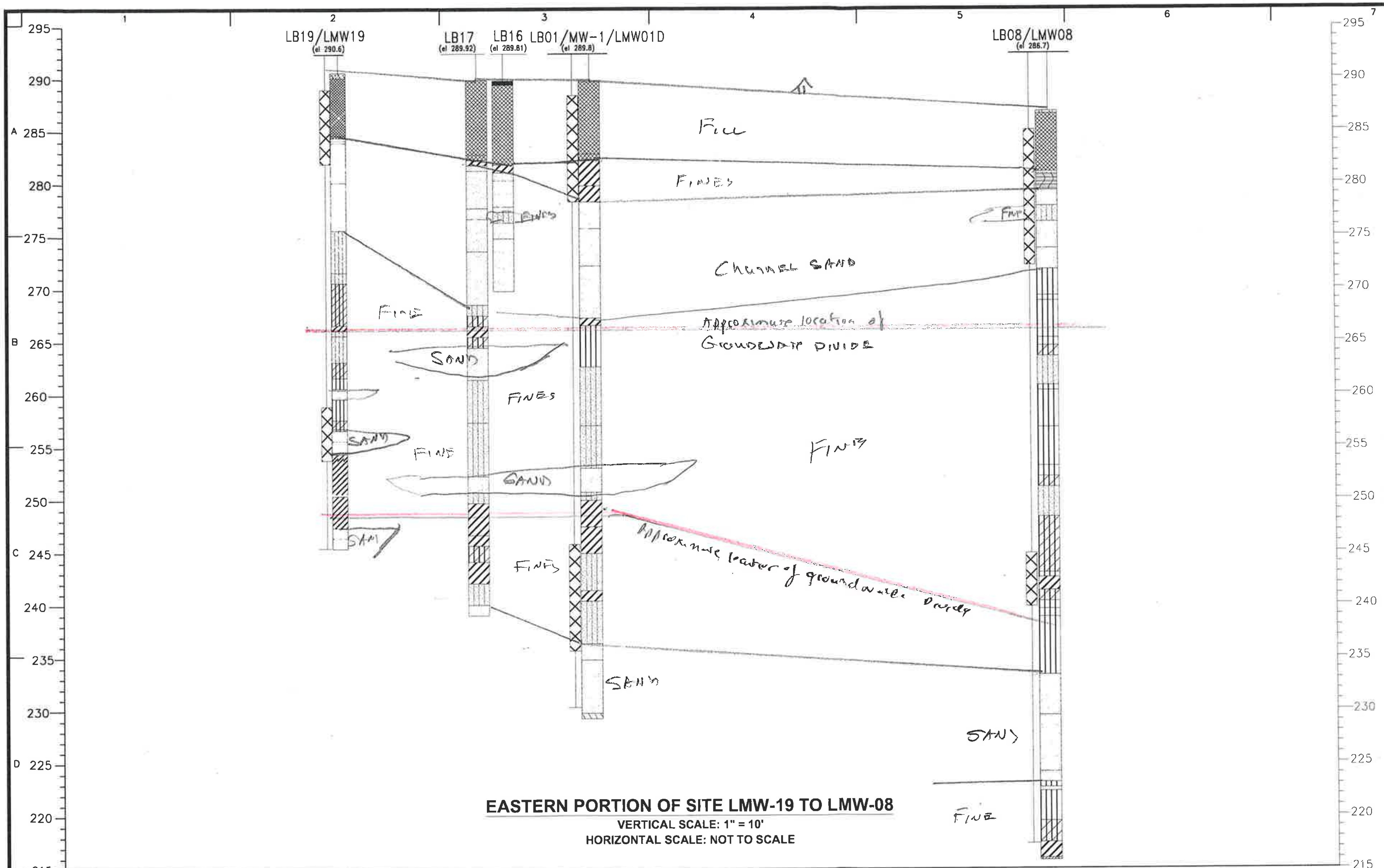

EASTERN PORTION OF SITE LMW-19 TO LMW-08

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

Legend

Topsoil	Silt
Asphalt	SAND
Sand with some silt	Silty sand
Clayey Silt	Brick
Fill	Clay
Concrete	Bedrock
Site Boundary	Well Screen

NOTES:
1. ELEVATIONS SHOWN REPRESENT THE TOP OF BORING AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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3. BASEMAP PREPARED BY JMC PLLC TITLED "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
4. SUBSURFACE STRATIGRAPHY INTERPRETED FROM RECOVERED SOIL SAMPLES. REFER TO BORING LOGS (APPENDIX C) FOR ADDITIONAL INFORMATION.
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Project: **41 KENSICO DRIVE**
SECTION 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Drawing Title: **SUBSURFACE PROFILE 3**

Project No. 190046301
Date 11/08/2018
Drawn By KT
Checked By TC

Drawing No. **6C**
Sheet 6C of 9

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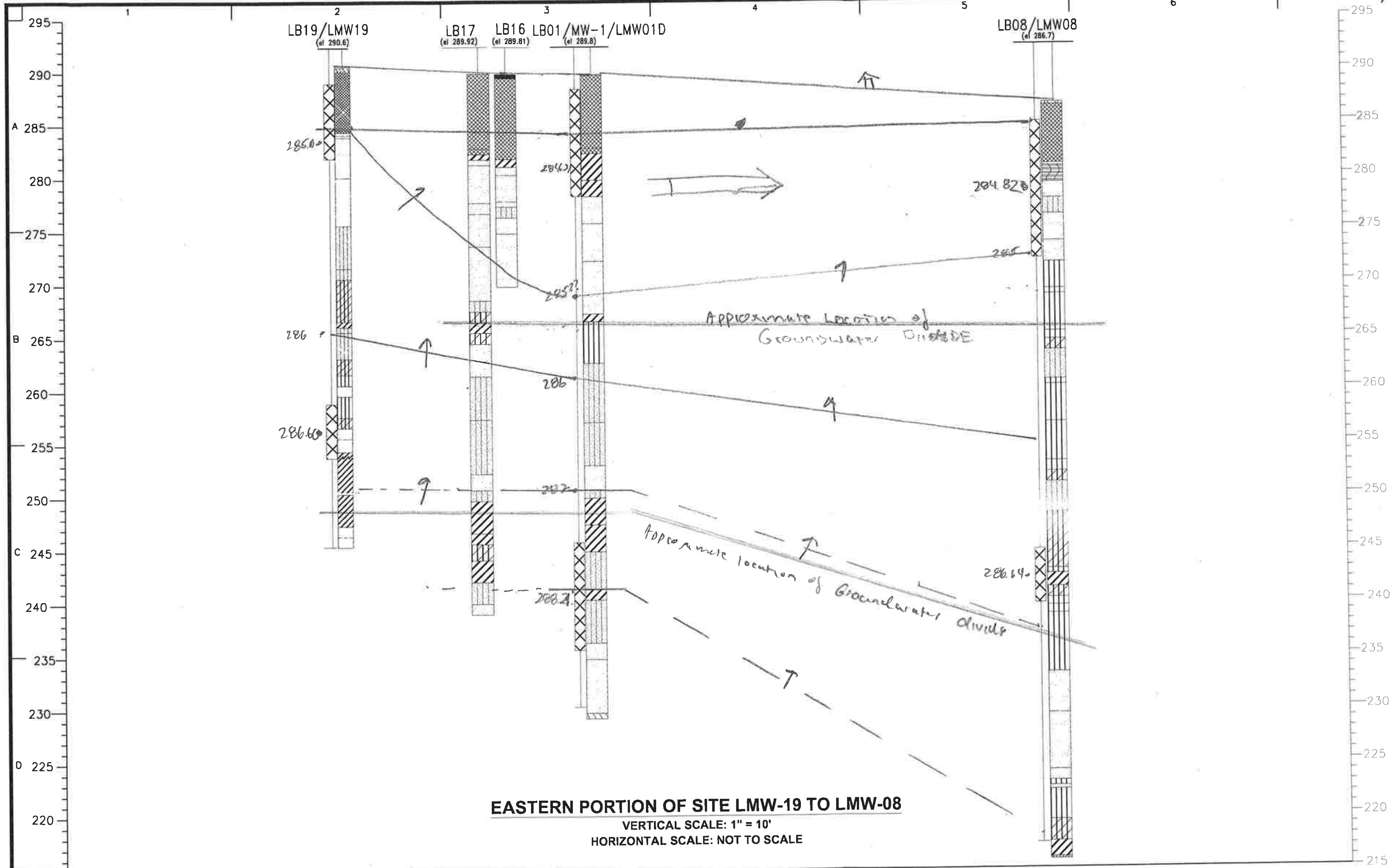
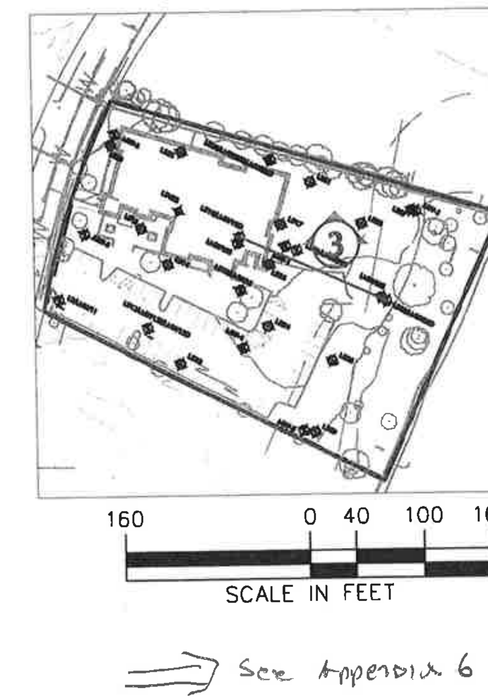
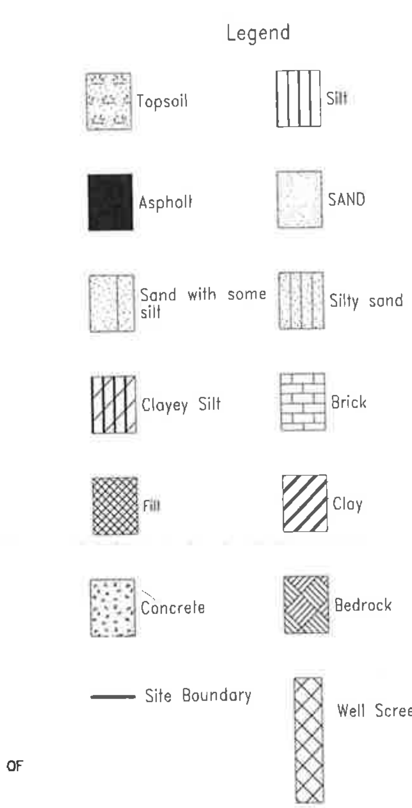


EASTERN PORTION OF SITE LMW-19 TO LMW-08

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE





NOTES:

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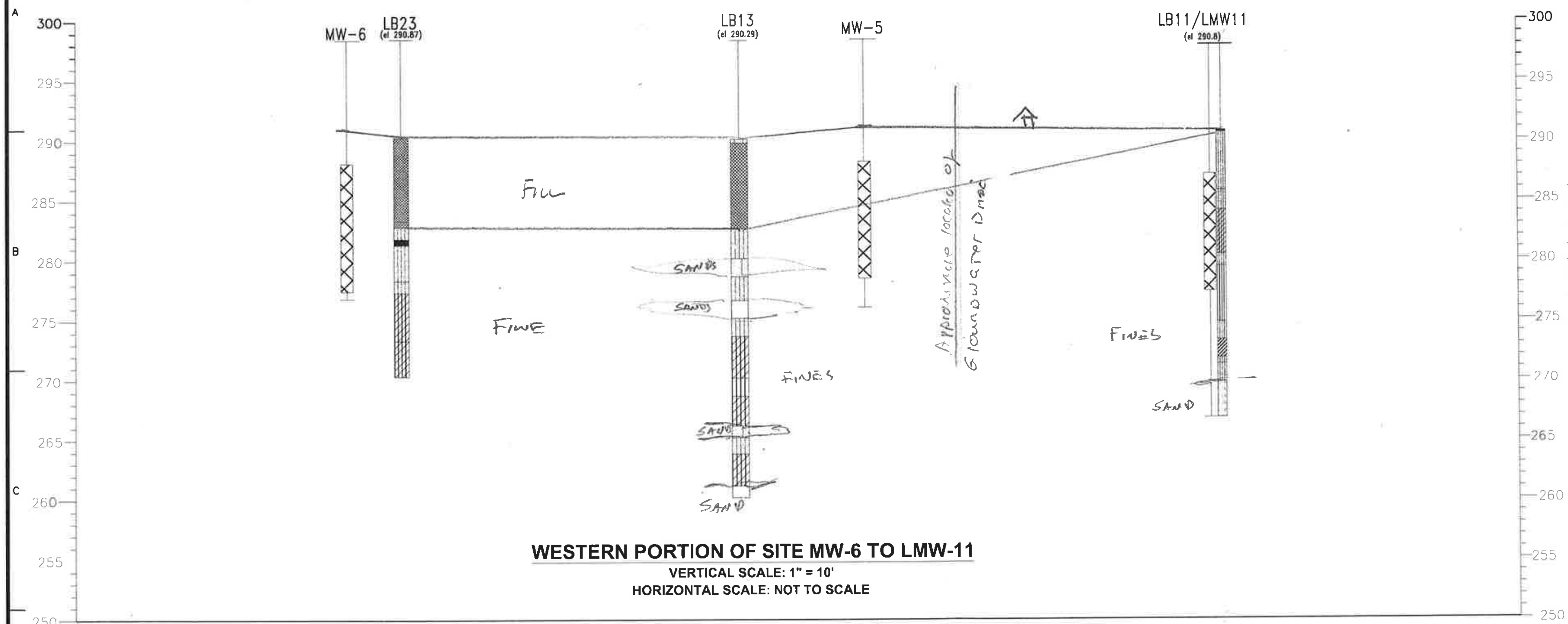
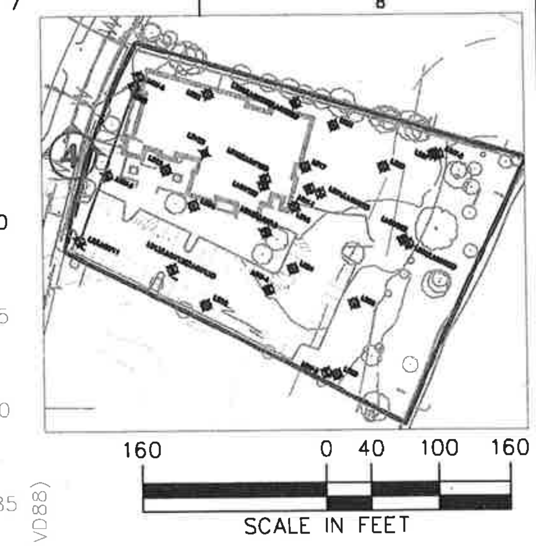
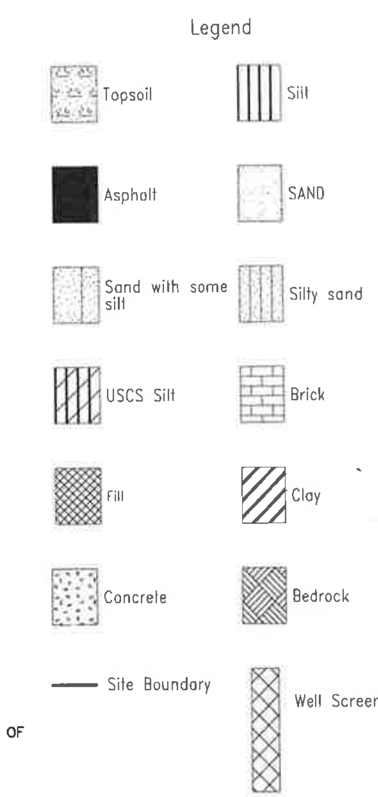


WESTERN PORTION OF SITE MW-6 TO LMW-11

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE





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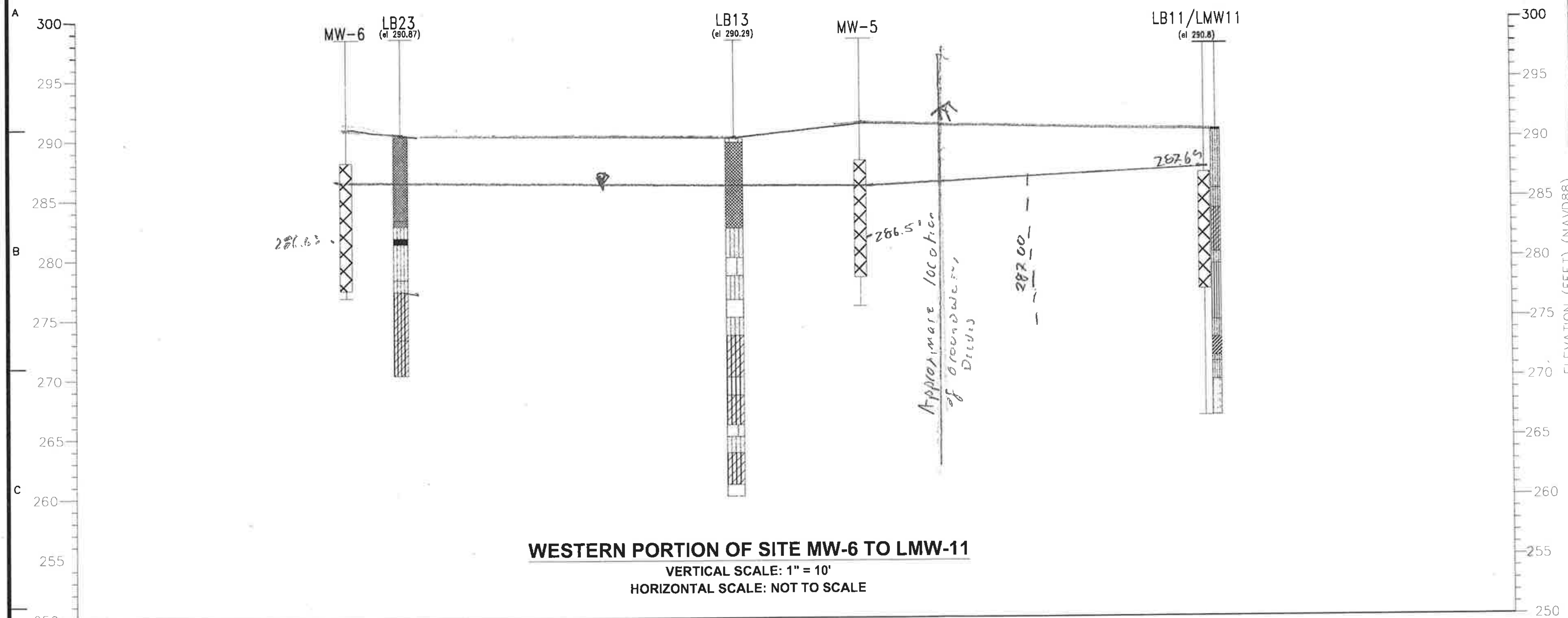
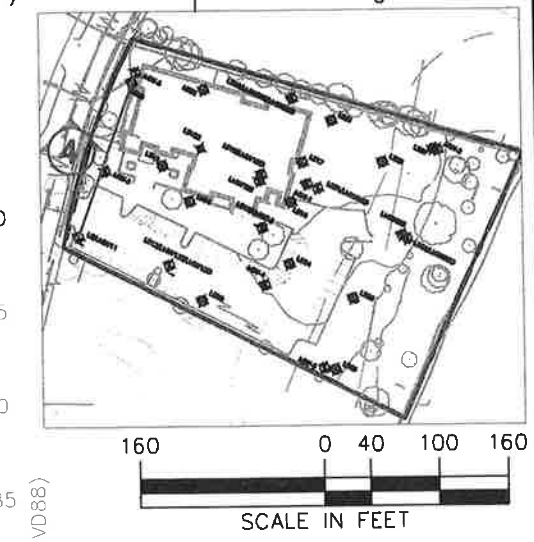
Project	Drawing Title	Project No. / Date / Drawn By / Checked By	Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 4	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6D Sheet 6D of 9



WESTERN PORTION OF SITE MW-6 TO LMW-11

VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE



Legend

- Topsoil
- Silt
- Asphalt
- SAND
- Sand with some silt
- Silty sand
- USCS Silt
- Brick
- Fill
- Clay
- Concrete
- Bedrock
- Site Boundary
- Well Screen

NOTES:
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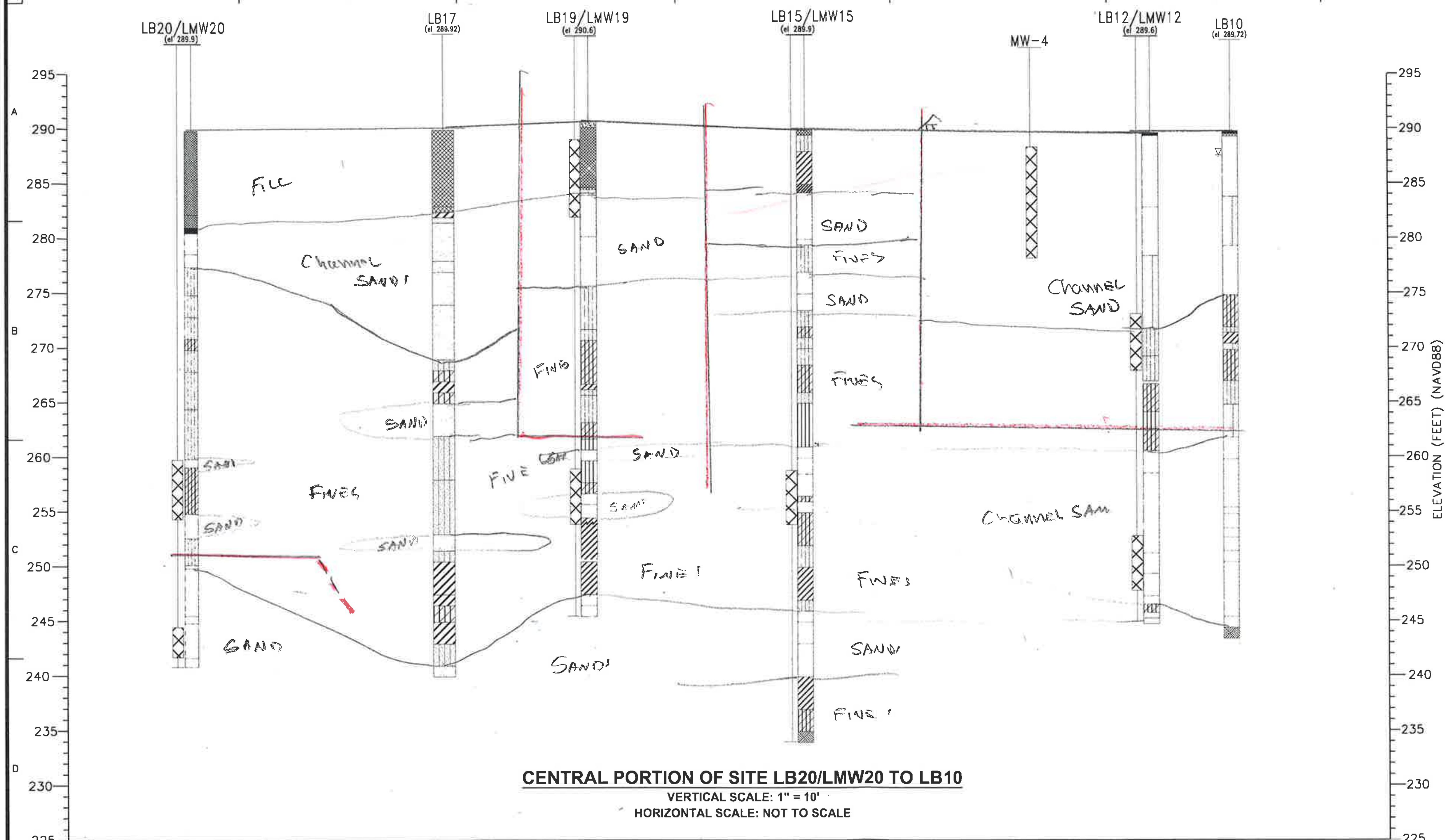

CENTRAL PORTION OF SITE LB20/LMW20 TO LB10

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

Legend

- Topsoil
- Silt
- Asphalt
- SAND
- Sand with some silt
- Silty sand
- Clayey Silt
- Brick
- Fill
- Clay
- Concrete
- Bedrock
- Site Boundary
- Well Screen

NOTES:

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Project	Drawing Title		Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 5	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6E Sheet 6E of 9

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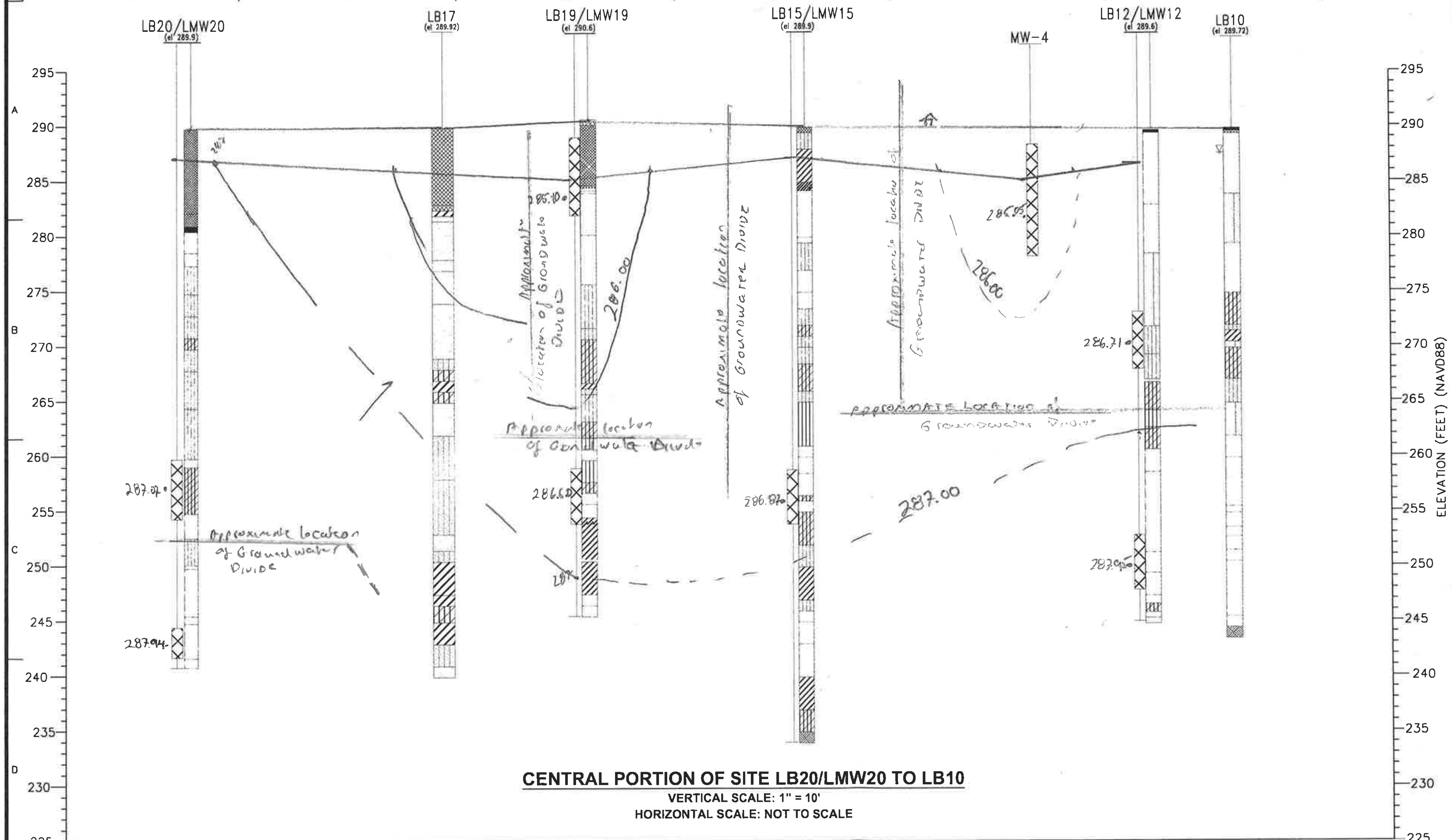

CENTRAL PORTION OF SITE LB20/LMW20 TO LB10

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

Legend

- Topsoil
- Silt
- Asphalt
- SAND
- Sand with some silt
- Silty sand
- Clayey Silt
- Brick
- Fill
- Clay
- Concrete
- Bedrock
- Site Boundary
- Well Screen

NOTES:
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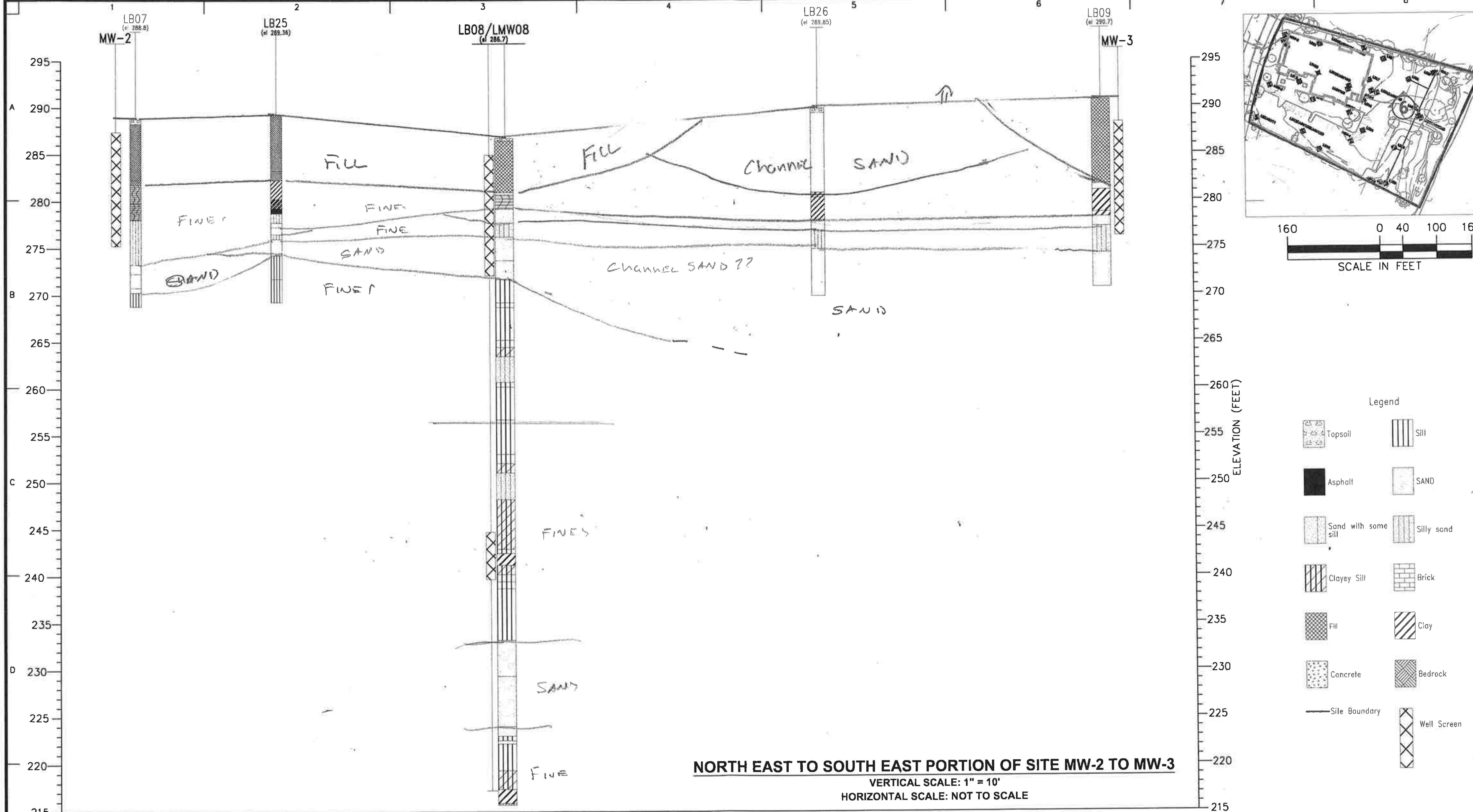

NORTH EAST TO SOUTH EAST PORTION OF SITE MW-2 TO MW-3

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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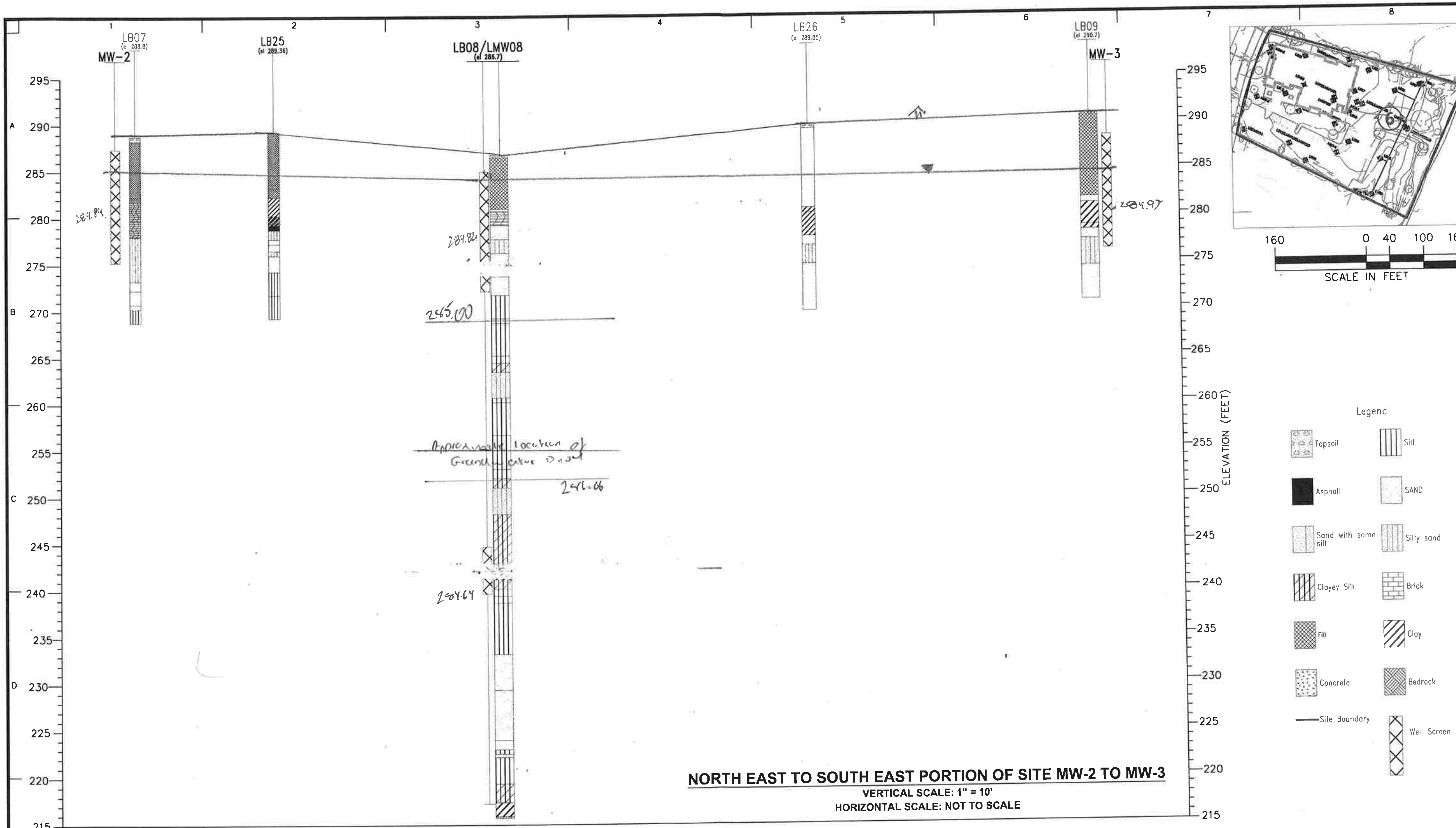
Project	Drawing Title		Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 6	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6F Sheet 6F of 9



NORTH EAST TO SOUTH EAST PORTION OF SITE MW-2 TO MW-3

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

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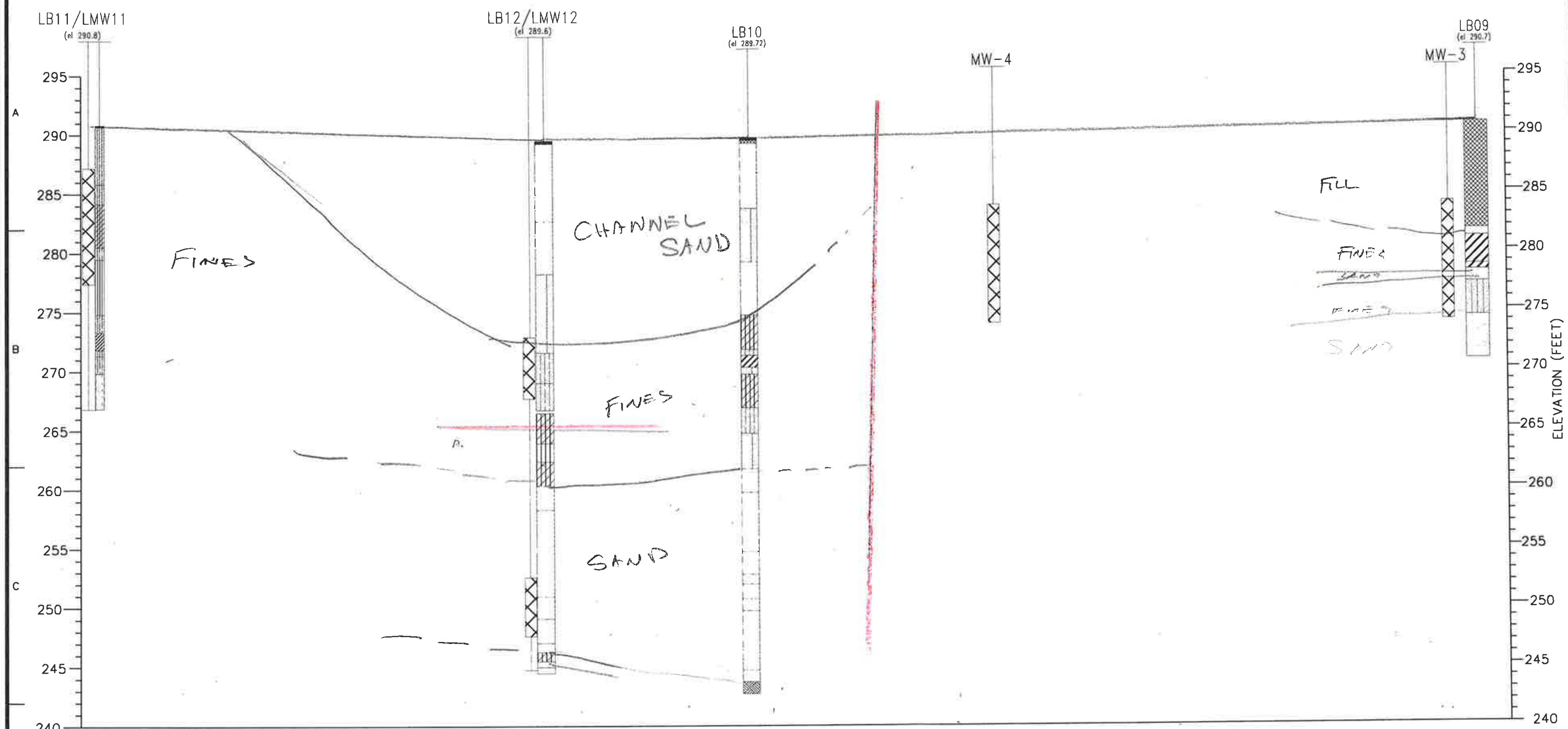
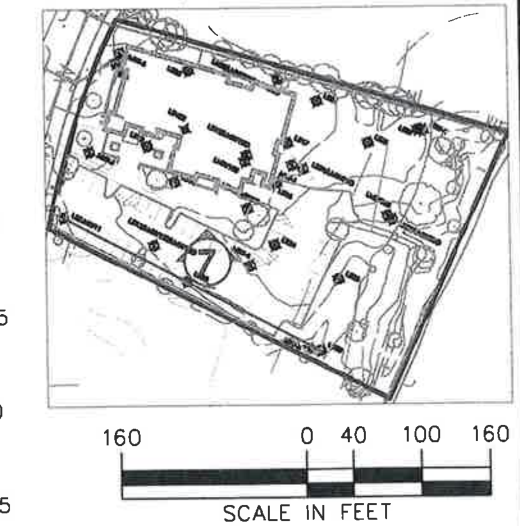
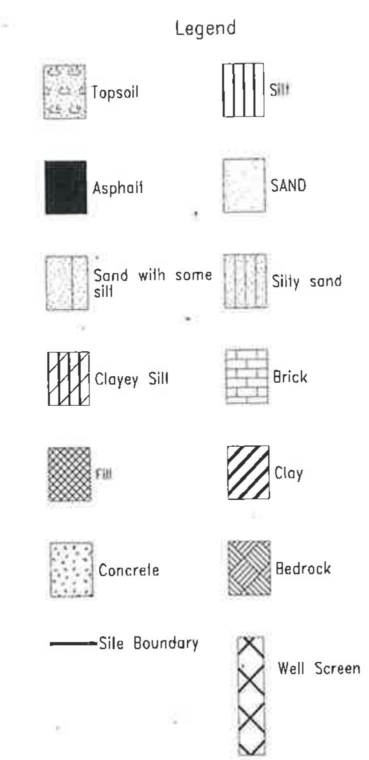
Project	Drawing Title	Project No. / Date / Drawn By / Checked By	Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 6	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6F Sheet 6F of 9







SOUTHERN PORTION OF SITE MW-11 TO LB09

VERTICAL SCALE: 1" = 10'

HORIZONTAL SCALE: NOT TO SCALE

NOTES:

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Project	Drawing Title	Project No.	Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 7	190046301	6G
		Date 11/08/2018	
		Drawn By KT	
		Checked By TC	Sheet 6G of 9

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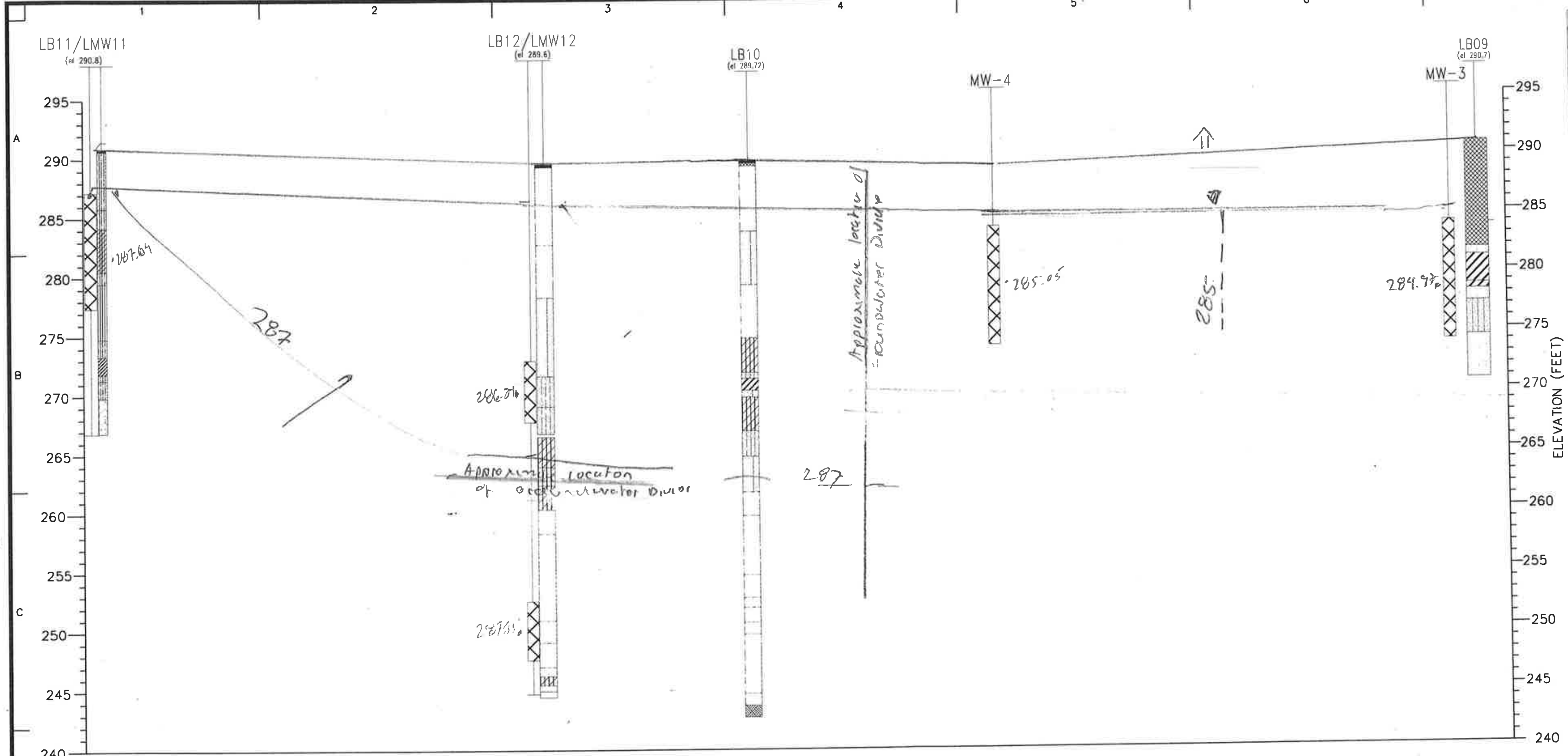
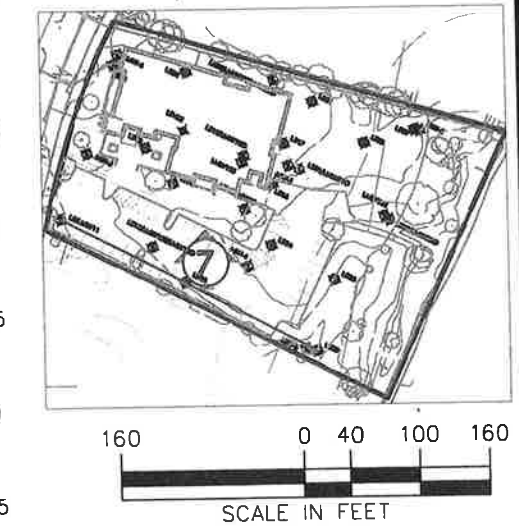


SOUTHERN PORTION OF SITE MW-11 TO LB09

VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE



Legend

- Topsoil
- Silt
- Asphalt
- SAND
- Sand with some silt
- Silty sand
- Clayey Silt
- Brick
- Fill
- Clay
- Concrete
- Bedrock
- Site Boundary
- Well Screen

NOTES:
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Project	Drawing Title		Drawing No.
41 KENSICO DRIVE SECTION 69.50, PARCEL No. 1-2 TOWN OF MOUNT KISCO WESTCHESTER COUNTY NEW YORK	SUBSURFACE PROFILE 7	Project No. 190046301 Date 11/08/2018 Drawn By KT Checked By TC	6G Sheet 6G of 9

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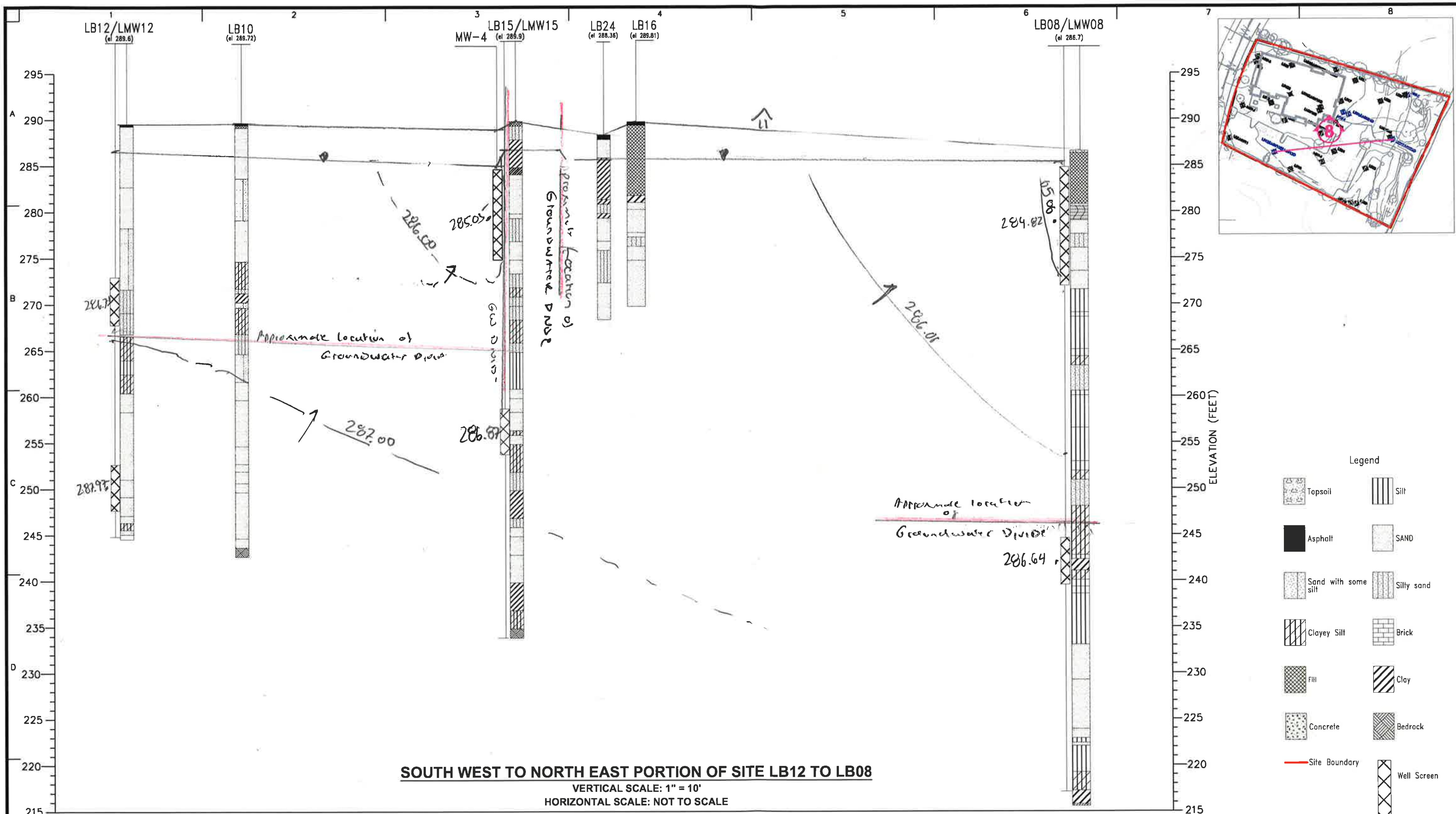

SOUTH WEST TO NORTH EAST PORTION OF SITE LB12 TO LB08

VERTICAL SCALE: 1" = 10'
HORIZONTAL SCALE: NOT TO SCALE

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Project: **41 KENSICO DRIVE**
SECTION 69.50, PARCEL No. 1-2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

Drawing Title: **SUBSURFACE PROFILE 8**

Project No. 190046301
Date 11/08/2018
Drawn By KT
Checked By TC

Drawing No. **6H**
Sheet 6H of 9

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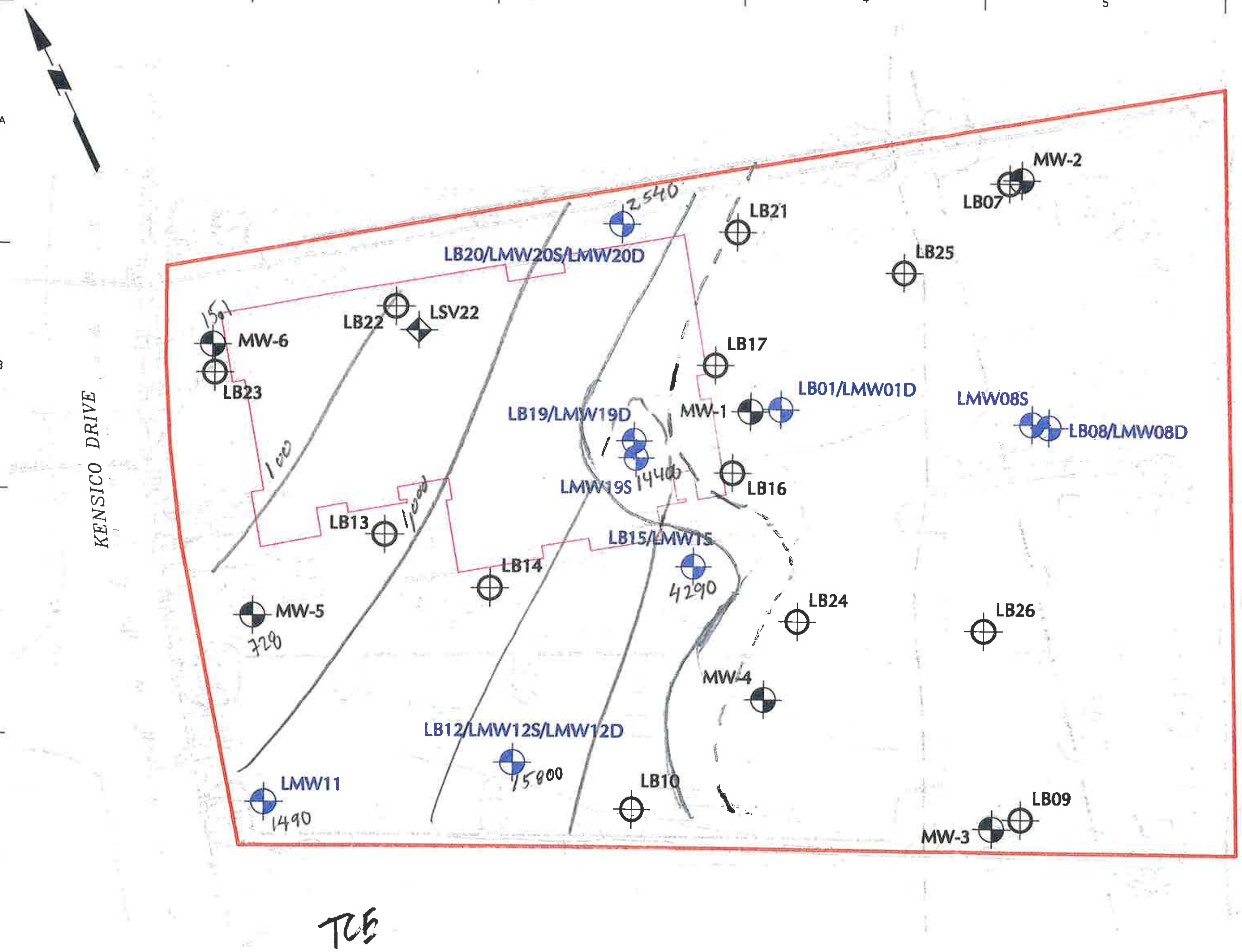

LEGEND:

APPROXIMATE SITE BOUNDARY

APPROXIMATE EXTENT OF EXISTING BUILDING

MW-6 EXISTING MONITORING WELL (INSTALLED BY AECOM)

LB23 RI SOIL BORING LOCATION

LB12/LMW12D RI SOIL BORING AND MONITORING WELL LOCATION

LMW19S RI MONITORING WELL LOCATION

LSV22 RI SOIL VAPOR LOCATION

NOTES:

1. BASE MAP PREPARED BY JMC PLLC TITLES "TOPOGRAPHIC AND UTILITY SURVEY", DATED NOVEMBER 20, 2017.
2. SOIL BORINGS, MONITORING WELLS, AND SOIL VAPOR LOCATIONS WERE OBTAINED FROM GROUND SURVEY PREFORMED BY LANGAN IN SEPTEMBER 2018.
3. RI = REMEDIAL INVESTIGATION

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

40 0 10 25 40

SCALE IN FEET

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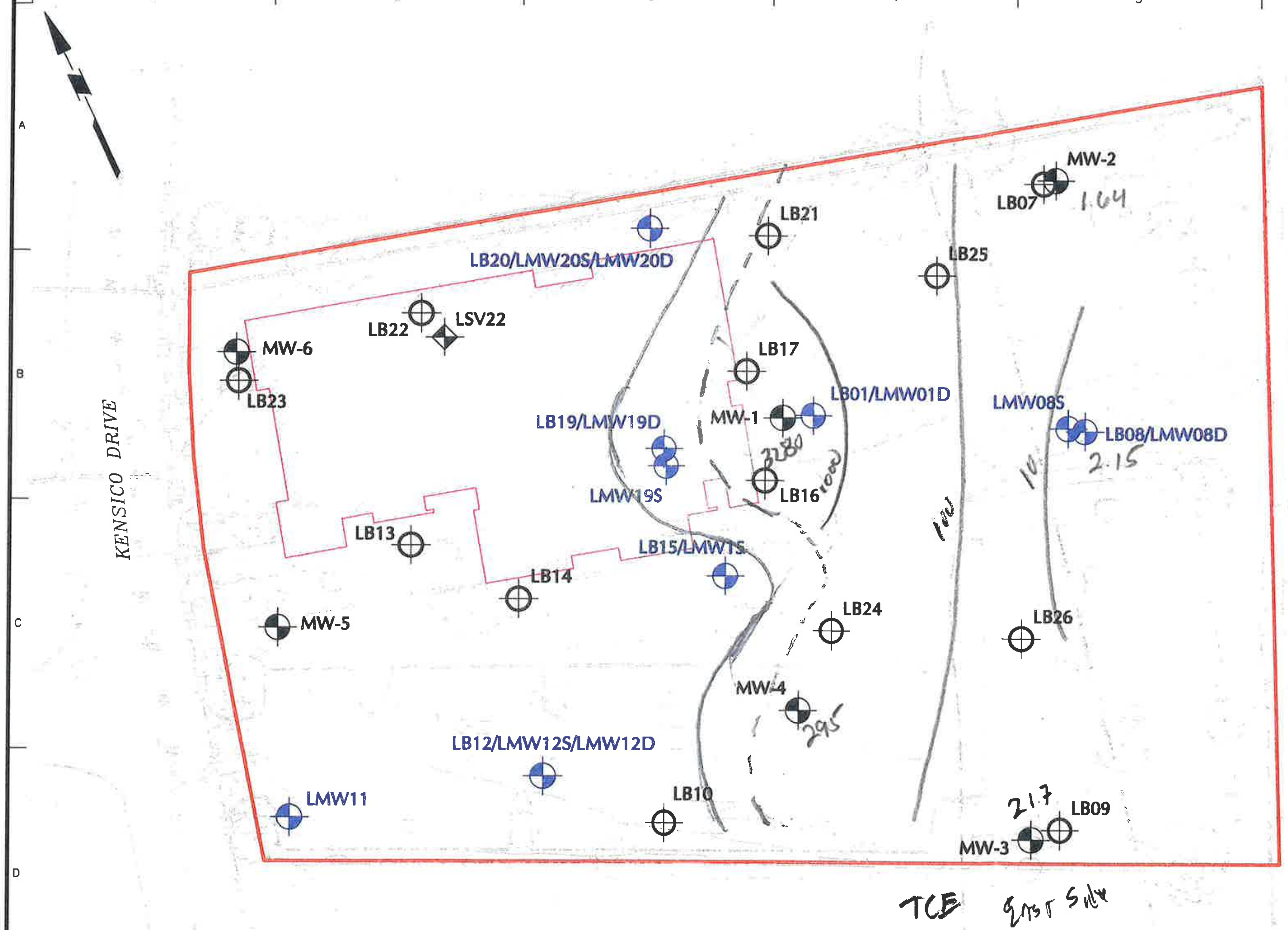
Project

41 KENSICO DRIVE

BLOCK No. 1, LOT No.2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

FIGURE I20
(west site)

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\Figure 2 - Sample Location Map.dwg Date: 9/25/2018 Time: 10:16 User: jyanowitz Style Table: Langan.stb Layout: Layout1



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Project

41 KENSICO DRIVE

BLOCK No. 1, LOT No.2
TOWN OF MOUNT KISCO
WESTCHESTER COUNTY NEW YORK

FIGURE I20
(east site)

Filename: \\langan.com\data\WPW\data3\190046301\Project Data\CAD\01\SheetFiles\Environmental\Figure 2 - Sample Location Map.dwg Date: 9/25/2018 Time: 10:16 User: jyanowitz Style Table: Langan.stb Layout: Layout1

APPENDIX J

FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS

APPENDIX I

FISH AND WILDLIFE RESOURCE IMPACT ANALYSIS (FWRIA)

Langan conducted a Fish and Wildlife Resource Impact Analysis (FWRIA) for the site in accordance with regulations set forth in the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10) and the guidelines set forth in the NYSDEC Fish and Wildlife Impact Analysis (FWIA) for Inactive Hazardous Waste Sites Handbook (October, 1994). The FWRIA was prepared as part of a remedial investigation (RI) completed at the site and includes an assessment of on- and off-site resources. Additional information on sampling data and locations discussed in this FWRIA are provided in the Remedial Investigation Report (RIR) the FWRIA is appended to.

1.1 Environmental Setting

As described in the RIR, the site is a 1.73-acre lot that is improved with a one-story building, landscaped areas, and an asphalt-paved paved parking lot. Based on the current settings, the habitat at this site is low quality and does not support a robust ecological community. A freshwater forested/shrub wetland is located north of the site. While the wetland is not located on the property, the buffer area associated with this wetland extends up to the northern property boundary of the site. The only sensitive natural resource identified within close proximity of the site is the aquatic ecosystem associated with Branch Brook, which flows along the eastern property boundary (see Figure 1).

Branch Brook is part of a "riverine" system classified as a Category C waterway (i.e., supporting fisheries and non-contact activities) by the NYSDEC. The portion of Branch Brook adjacent to the site is a low quality drainage system that may potentially receive groundwater discharge from the site. Additionally, runoff is transported via overland flow to Branch Brook from parking lot and landscaped areas through a carved depression in a grass covered area beyond the eastern parking lot (see Attachment 1). However, most of site is covered in impervious surfaces and/or maintained landscaping. Therefore, significant erosion of soil from the site into Branch Brook is not expected. Additionally, a railroad runs along the entire length of the eastern bank of Branch Brook both up and downstream of the site. During a site walk in May of 2019, fill material from the railroad was observed eroding into the stream. Furthermore, a storm sewer outfall was observed directly north of the site along the western bank of Branch Brook.

A redevelopment plan is in place for the site that will result in an expansion of the existing asphalt-paved parking lot, a paved automotive sales storage area and a 10-foot wide landscaped buffer area between the storage area and Branch Brook along the eastern property boundary. This redevelopment will further limit any potential for soil erosion at the site. During the redevelopment, an Erosion and Sediment Control Plan (ESCP) will be implemented that will limit any potential erosion of soil that may occur. Additionally, the surrounding properties are commercial, residential and industrial; therefore, terrestrial habitats surrounding the site exhibit little ecological value (see Figure 3 of the RIR). Based on the condition of both the site and the surrounding properties, potential soil impacts are not expected to pose a risk to ecological receptors. Therefore, groundwater, sediment and surface water are the media that may be impacted by the site and pose a potential ecological risk that requires additional evaluation.

1.2 Identification of Applicable Screening Criteria and Regulatory Rules

Media associated with the site that pose a potential ecological risk were screened to evaluate what, if any, potential migration and exposure pathways may be complete at the site. The following sections provide a brief description of the selection of the screening criteria for each media. Sample locations evaluated as part of in the FWRIA are provided in Figure 2 of the RIR.

1.2.1 Groundwater

Groundwater was screened at the site as a conservative approach to assess the potential groundwater to surface water migration pathway at the Site. Ecological regulatory criteria were selected to screen groundwater analytical data from the site. Freshwater criteria were selected based on the knowledge that the wetland and Branch Brook are freshwater environments. Criteria were selected from the New York State Ambient Water Quality Standards (AWQS) and Guidance Values and Groundwater Effluent Limits. Both aquatic chronic (A[C]) and aquatic acute (A[A]) surface water benchmarks were utilized in this analysis to provide a range of conservative screening values. These benchmarks also helped to identify the range of potential risk of specific contaminants. It is important to note that in many cases, values for fish propagation (A[C]) and fish survival (A[A]) are higher than values that are protective of drinking water or fish consumption for humans. Therefore, analytes that may have been identified as being a potential human health risk driver may not have been identified as an ecological risk driver. Additionally, in cases where A(C) and A(A) values have not been promulgated by New York State, the following secondary peer-reviewed published sources were used in the selection of groundwater screening:

1. United States Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria - Aquatic Life Criteria.
2. USEPA Region III Biological Technical Assistance Group (BTAG) - Freshwater Screening Benchmarks.

1.2.2 Surface Water

Surface water was screened to assess the potential migration of ecological impacts to Branch Brook adjacent to the site. Ecological regulatory criteria were selected from the New York AWQS and Guidance Values and Groundwater Effluent Limits. Specifically, surface water data was compared to AWQS for Class “C” waterways. AWQS included in this screening included the following types:

- Fish Propagation (fresh waters) – Type A(C),
- Fish Survival (fresh waters) – Type A(A),
- Wildlife Protection (fresh waters) – Type (W), and
- Aesthetic (fresh waters) – Type E.

1.2.3 Sediment

Sediment was screened to assess the potential migration of ecological impacts to Branch Brook adjacent to the site. Contaminant-specific ecological regulatory criteria were selected from the Table 5 of the NYSDEC guidance document *Screening and Assessment of Contaminated Sediment (SACS)* dated June 24, 2014.

1.3 Contaminant-Specific Impact Analysis

A contaminant-specific impact analysis was completed to identify possible migration pathways to the stream located along the eastern property boundary of the site. Analytical data associated with an identified migration pathway and exposure route was screened against the ecological criteria outlined above.

1.3.1 Migration and Exposure Pathways

Migration and exposure pathways associated with the site were evaluated to determine the presence of a potential exposure route between contaminant sources at the site and ecological receptors. Based on a review of the current conditions of the site, knowledge of the proposed site redevelopment plans, and a review of the RI and SRI sampling data, two potential migration pathways were identified, including overland flow and groundwater to surface water discharge.

The overland flow is not expected to be a significant source of impacts within the stream due to the current and future site features. Currently, the site is comprised of impervious surfaces (i.e., an asphalt-paved parking lot and buildings) and a maintained landscaped lawn. Additionally, the future site conditions will include a larger paved parking lot and a paved outdoor automotive sales storage area extending up to 10 feet from Branch Brook. The remainder of the site will include a 10-foot landscaped buffer between the parking lot/storage area and the stream. These features will significantly prevent potential surface soil impacts from eroding and migrating off-site.

The main potential migration pathway at the site is associated with impacted groundwater that may discharge to surface water. An analysis of topographic features and groundwater level measurement data from the RI demonstrates that shallow groundwater is migrating northeast towards the stream that flows along the eastern property boundary. The migration and potential discharge of groundwater to the stream represents a potential risk to ecological receptors. This risk is associated with the site-related impacts detected in shallow groundwater that may be migrating to the stream.

1.3.2 Criteria-Specific Analysis

The criteria-specific analysis evaluates the potential migration pathways between the site and ecological resources. Branch Brook was found to be an ecological resource of concern and the potential migration pathways of groundwater to surface water discharge and overland flow were identified. Therefore, site-specific shallow groundwater, surface water and sediment data were screened using the applicable screening criteria as identified above. A summary of the screening results is provided below.

1.3.3 Groundwater

Groundwater data from shallow downgradient monitoring wells located closest to the stream (MW-2, MW-3 and LMW-08S) were considered in the criteria-specific analysis. A summary of shallow groundwater sampling locations and screening results is provided in Table 1 of this Appendix.

The monitoring wells were sampled and analyzed for Target Compound List (TCL), volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL polychlorinated biphenyls (PCBs), and TCL pesticides and Target Analyte List (TAL) metals (total and dissolved) in September 2018, as part of the RI field activities. Based on an evaluation of groundwater data compared to the screening criteria presented above, the following groundwater contaminants of potential ecological concern (COPECs) were identified:

- VOCs:
    - Trichloroethylene (MW-3)
- SVOCs: no exceedances
- Pesticides: no exceedances
- Total Metals:
    - Aluminum (LMW-08S)
    - Barium (LMW-08S)
    - Iron(LMW-08S)
    - Lead (LMW-08S)
    - Manganese(LMW-08S)
- Dissolved Metals:
    - Barium (LMW-08S)
    - Iron(LMW-08S)
    - Manganese(LMW-08S)

1.3.4 Surface Water

Surface water data was collected from three co-located sample locations with sediment samples within the stream along the eastern boundary of the site. Sample locations included one adjacent to the northern property boundary of the site (SW1), one adjacent to a storm runoff channel located along the eastern property boundary of the site (SW2), and one adjacent to the southern property boundary of the site (SW3). A summary of the surface water sampling locations and screening results is provided in Table 6A of the RIR.

Surface water samples were sampled and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, TCL pesticides, TAL metals (total and dissolved) and emerging contaminants, include 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) in May 2019, as part of SRI field activities per the request of the NYSDEC. Based on an evaluation of surface water data compared to the screening criteria presented above, the following surface water COPECs were identified:

- VOCs: no exceedances
- SVOCs: bis(2-Ethylhexyl) phthalate (SW1)
- Pesticides: no exceedances
- PCBs: no exceedances
- Total Metals: iron (SW1, SW2 and SW3)
- Dissolved Metals: aluminum (SW3)

1.3.5 Sediment

Three sediment sampling locations were collocated with the surface water samples within the stream along the eastern boundary of the site, including one adjacent to the northern property boundary of the site (SED1), one adjacent to a storm runoff channel located along the eastern property boundary of the site (SED2), and one adjacent to the southern property boundary of the site (SED3). A summary of the sediment sampling locations and screening results is provided in Table 6B of the RIR.

Sediment samples were sampled and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, TCL pesticides, TAL metals and emerging contaminants, include 1,4-dioxane and per- and PFAS in May 2019, as part of SRI field activities per the request of NYSDEC. Based on an evaluation of sediment data compared to the screening criteria presented above, the following COPECs were identified at the specified sediment sampling locations:

- VOCs: no exceedances
- SVOCs: no exceedances
- Pesticides: no exceedances
- PCBs: no exceedances
- Metals:
    - Cadmium (SED3)
    - Total chromium (SED2)
    - Copper (SED2)
    - Lead (SED1, SED2, and SED3)
    - Nickel (SED3)

- Zinc (SED1, SED2 and SED3)

Based on the constituents identified in Branch Brook, four surface soil samples collected along the eastern portion of the site (SS4 through SS7) were evaluated. These samples were evaluated in the FWRIA to determine if soil at the site is a source of impacts observed in Branch Brook sediments. Surface soil samples were analyzed for TCL VOCs, TCL SVOCs, PCBs, pesticides, and TAL metals. The results from these surface soil samples indicated that metals were the only analytes detected at elevated levels. However, only lead at SS7 was detected at a level (132 mg/kg) equivalent to its respective Class C Guidance Level for sediment (130 mg/kg). All other metals were detected at levels within the range for Class B Guidance Levels or below. Additional discussion about these samples and their results are provided in the RIR and on Tables 3A, 3B, 3C, and 3D of the RIR.

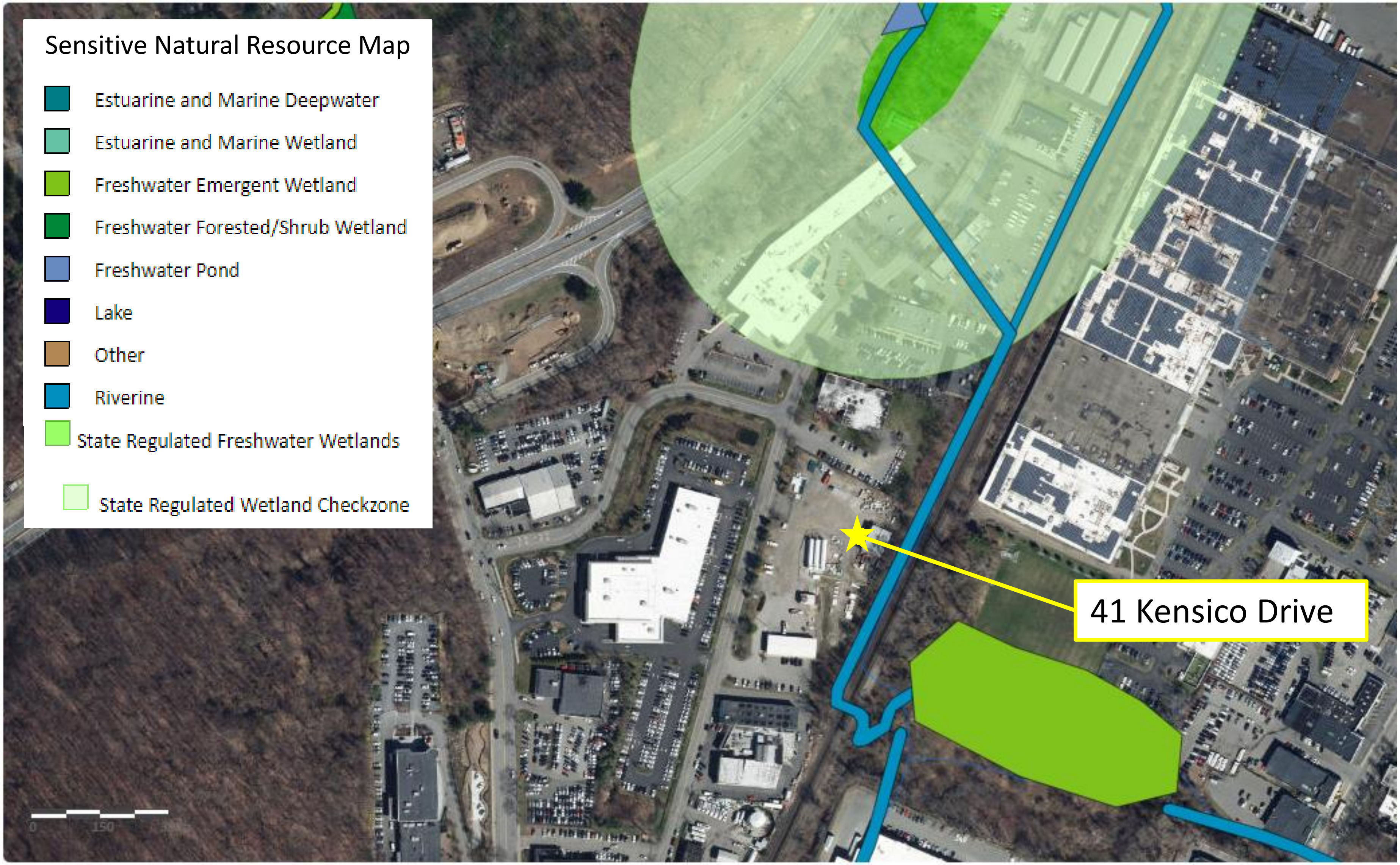
1.4 Conclusions

The results of the preliminary FWRIA indicate that, although there is potential for ecological resources to be impacted by contamination in groundwater, surface water and sediment, it is unlikely the site contamination is causing significant adverse effects on the adjacent ecological resources for the following reasons:

- The VOCs in groundwater are attributed to a hydraulically upgradient off-site source (see Section 8.0 of the RIR);
- A decreasing trend in groundwater contaminant concentrations was observed at the site from the western to eastern property boundaries. Therefore, contaminant levels detected in downgradient groundwater wells will likely decrease further before being discharged to the stream adjacent to the site. Groundwater concentrations are likely to decrease over the flow path distance between the most downgradient wells and the waterway. Additionally, surface water samples from Branch Brook indicate that COPECs identified in groundwater have not migrated to this ecological habitat;
- Metal concentrations exceeding media-specific ecological regulatory criteria are only slightly above ecological criteria and in many cases are consistent with historic fill concentrations for the metropolitan region;
- Metal concentrations detected in Branch Brook sediments were generally higher than metal concentrations in surface soil samples collected adjacent to the drainage channel leading towards Branch Brook. These results indicate that other sources of metals are likely impacting Branch Brook, including but not limited to, fill material from the railroad embankment along the eastern bank of Branch Brook and stormwater from off-site commercial and industrial properties that discharges to Branch Brook through the storm sewer outfall observed near the northeastern corner of the site.

Based on these findings, no further ecological impact assessment is warranted.

FIGURES


Sensitive Natural Resource Map
Estuarine and Marine Deepwater
Estuarine and Marine Wetland
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Other
Riverine
State Regulated Freshwater Wetlands
State Regulated Wetland Checkzone
41 Kensico Drive

TABLES

Appendix I - Table 1
Groundwater Sample Analytical Results Summary
Fish and Wildlife Resource Impact Analysis
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

Sample Location Sample ID Lab ID Sampling Date and Time	CAS Number	NYSDEC TOGS Standards and Guidance Values Aquatic Health: Chronic	 Aquatic Health: Acute	Secondary Sources	MW-2 MW-2_090518 18I0168-03 9/5/2018 1:45:00 PM		MW-3 MW-3_090618 18I0253-01 9/6/2018 11:40:00 AM		LMW08S LMW08S_090518 18I0168-04 9/5/2018 4:36:00 PM	
Volatile Organic Compounds (µg/L)										
1,1,1,2-Tetrachloroethane	630-20-6	~	~		0.200	U	0.200	U	0.200	U
1,1,1-Trichloroethane	71-55-6	11	~	b	8.480		0.200	U	0.200	U
1,1,2,2-Tetrachloroethane	79-34-5	610	~	b	0.200	U	0.200	U	0.200	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon	76-13-1	~	~		0.200	U	0.200	U	0.200	U
1,1,2-Trichloroethane	79-00-5	1200	~	b	0.200	U	0.200	U	0.200	U
1,1-Dichloroethane	75-34-3	47	~	b	0.200	U	0.200	U	0.430	J
1,1-Dichloroethylene	75-35-4	25	~	b	1.070		0.200	U	0.870	
1,2,3-Trichlorobenzene	87-61-6	5	~		0.200	U	0.200	U	0.200	U
1,2,3-Trichloropropane	96-18-4	~	~		0.200	U	0.200	U	0.200	U
1,2,4-Trichlorobenzene	120-82-1	5	~		0.200	U	0.200	U	0.200	U
1,2,4-Trimethylbenzene	95-63-6	33	290		0.200	U	0.200	U	0.200	U
1,2-Dibromo-3-chloropropane	96-12-8	~	~		0.200	U	0.200	U	0.200	U
1,2-Dibromoethane	106-93-4	~	~		0.200	U	0.200	U	0.200	U
1,2-Dichlorobenzene	95-50-1	5	~		0.200	U	0.200	U	0.200	U
1,2-Dichloroethane	107-06-2	100	~	b	0.200	U	0.200	U	0.200	U
1,2-Dichloropropane	78-87-5	~	~		0.200	U	0.200	U	0.200	U
1,3,5-Trimethylbenzene	108-67-8	71	~	b	0.200	U	0.200	U	0.200	U
1,3-Dichlorobenzene	541-73-1	5	~		0.200	U	0.200	U	0.200	U
1,4-Dichlorobenzene	106-46-7	5	~		0.200	U	0.200	U	0.200	U
1,4-Dioxane	123-91-1	~	~		40	U	40	U	40	U
2-Butanone	78-93-3	14000	~	b	0.200	U	0.200	U	0.200	U
2-Hexanone	591-78-6	99	~	b	0.200	U	0.200	U	0.200	U
4-Methyl-2-pentanone	108-10-1	170	~	b	0.200	U	0.200	U	0.200	U
Acetone	67-64-1	1500	~	b	1	U	1	U	1	U
Acrolein	107-02-8	3	3	a	0.200	U	0.200	U	0.200	U
Acrylonitrile	107-13-1	~	~		0.200	U	0.200	U	0.200	U
Benzene	71-43-2	210	760		7.170		0.200	U	0.200	U
Bromochloromethane	74-97-5	~	~		0.200	U	0.200	U	0.200	U
Bromodichloromethane	75-27-4	~	~		0.200	U	0.200	U	0.200	U
Bromoform	75-25-2	320	~	b	0.200	U	0.200	U	0.200	U
Bromomethane	74-83-9	0	~	b	*0.200*	U	*0.200*	U	*0.200*	U
Carbon disulfide	75-15-0	0.92	~	b	0.200	U	0.200	U	0.200	U
Carbon tetrachloride	56-23-5	13.3	~	b	0.200	U	0.200	U	0.200	U
Chlorobenzene	108-90-7	5	~		0.200	U	0.200	U	0.200	U
Chloroethane	75-00-3	~	~		0.200	U	0.200	U	0.200	U
Chloroform	67-66-3	1.8	~	b	0.200	U	0.200	U	0.200	U
Chloromethane	74-87-3	~	~		0.200	U	0.200	U	0.200	U
cis-1,2-Dichloroethylene	156-59-2	590	~	b	273	D	1		149	D
cis-1,3-Dichloropropylene	10061-01-5	~	~		0.200	U	0.200	U	0.200	U
Cyclohexane	110-82-7	~	~		0.200	U	0.200	U	0.200	U
Dibromochloromethane	124-48-1	~	~		0.200	U	0.200	U	0.200	U
Dibromomethane	74-95-3	~	~		0.200	U	0.200	U	0.200	U
Dichlorodifluoromethane	75-71-8	~	~		0.200	U	0.200	U	0.200	U
Ethyl Benzene	100-41-4	17	150		0.200	U	0.200	U	0.200	U
Hexachlorobutadiene	87-68-3	1	10		0.200	U	0.200	U	0.200	U
Isopropylbenzene	98-82-8	2.6	23		0.200	U	0.200	U	0.200	U
Methyl acetate	79-20-9	~	~		0.200	U	0.200	U	0.200	U
Methyl tert-butyl ether (MTBE)	1634-04-4	11070	~	b	0.200	U	0.200	U	0.200	U
Methylcyclohexane	108-87-2	~	~		0.200	U	0.200	U	0.200	U
Methylene chloride	75-09-2	98.1	~	b	1	U	1	U	1	U
n-Butylbenzene	104-51-8	~	~		0.200	U	0.200	U	0.200	U
n-Propylbenzene	103-65-1	128	~	b	0.200	U	0.200	U	0.200	U
o-Xylene	95-47-6	65	590		0.200	U	0.200	U	0.200	U
p- & m- Xylenes	179601-23-1	65	590		0.500	U	0.500	U	0.500	U
p-Isopropyltoluene	99-87-6	85	~	b	0.200	U	0.200	U	0.200	U
sec-Butylbenzene	135-98-8	~	~		0.200	U	0.200	U	0.200	U
Styrene	100-42-5	72	~	b	0.200	U	0.200	U	0.200	U
tert-Butyl alcohol (TBA)	75-65-0	~	~		0.500	U	0.500	U	0.500	U
tert-Butylbenzene	98-06-6	~	~		0.200	U	0.200	U	0.200	U
Tetrachloroethylene	127-18-4	111	~	b	0.200	U	0.200	U	0.200	U
Toluene	108-88-3	100	480		0.200	U	0.200	U	0.200	U
trans-1,2-Dichloroethylene	156-60-5	970	~		3.840		0.200	U	0.680	
trans-1,3-Dichloropropylene	10061-02-6	~	~		0.200	U	0.200	U	0.200	U
Trichloroethylene	79-01-6	21	~	b	2		**22**		2	
Trichlorofluoromethane	75-69-4	~	~		0.200	U	0.200	U	0.200	U
Vinyl Chloride	75-01-4	930	~	b	40.4		0.200	U	0.430	J
Xylenes, Total	1330-20-7	65	590		0.600	U	0.600	U	0.600	U

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Groundwater Sample Analytical Results Summary
Fish and Wildlife Resource Impact Analysis
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

Sample Location Sample ID Lab ID Sampling Date and Time	CAS Number	NYSDEC TOGS Standards and Guidance Values Aquatic Health: Chronic	 Aquatic Health: Acute	Secondary Sources	MW-2 MW-2_090518 18I0168-03 9/5/2018 1:45:00 PM		MW-3 MW-3_090618 18I0253-01 9/6/2018 11:40:00 AM		LMW08S LMW08S_090518 18I0168-04 9/5/2018 4:36:00 PM	
Semivolatile Organic Compounds (µg/L)										
1,1-Biphenyl	92-52-4	14	~	b	2.630	U	2.700	U	2.500	U
1,2,4,5-Tetrachlorobenzene	95-94-3	3	~	b	2.630	U	2.700	U	2.500	U
2,3,4,6-Tetrachlorophenol	58-90-2	1.2	~	b	*2.630*	U	*2.700*	U	*2.500*	U
2,4,5-Trichlorophenol	95-95-4	~	~		2.630	U	2.700	U	2.500	U
2,4,6-Trichlorophenol	88-06-2	4.9	~	b	2.630	U	2.700	U	2.500	U
2,4-Dichlorophenol	120-83-2	11	~	b	2.630	U	2.700	U	2.500	U
2,4-Dimethylphenol	105-67-9	~	~		2.630	U	2.700	U	2.500	U
2,4-Dinitrophenol	51-28-5	~	~		2.630	U	2.700	U	2.500	U
2,4-Dinitrotoluene	121-14-2	44	~	b	2.630	U	2.700	U	2.500	U
2,6-Dinitrotoluene	606-20-2	81	~	b	2.630	U	2.700	U	2.500	U
2-Chloronaphthalene	91-58-7	~	~		2.630	U	2.700	U	2.500	U
2-Chlorophenol	95-57-8	24	~	b	2.630	U	2.700	U	2.500	U
2-Methylnaphthalene	91-57-6	4.7	42		2.630	U	2.700	U	2.500	U
2-Methylphenol	95-48-7	13	~	b	2.630	U	2.700	U	2.500	U
2-Nitroaniline	88-74-4	~	~		2.630	U	2.700	U	2.500	U
2-Nitrophenol	88-75-5	1920	~	b	2.630	U	2.700	U	2.500	U
3- & 4-Methylphenols	65794-96-9	~	~		2.630	U	2.700	U	2.500	U
3,3-Dichlorobenzidine	91-94-1	4.5	~	b	2.630	U	2.700	U	2.500	U
3-Nitroaniline	99-09-2	~	~		2.630	U	2.700	U	2.500	U
4,6-Dinitro-2-methylphenol	534-52-1	~	~		2.630	U	2.700	U	2.500	U
4-Bromophenyl phenyl ether	101-55-3	1.5	~	b	2.630	U	2.700	U	2.500	U
4-Chloro-3-methylphenol	59-50-7	~	~		2.630	U	2.700	U	2.500	U
4-Chloroaniline	106-47-8	232	~	b	2.630	U	2.700	U	2.500	U
4-Chlorophenyl phenyl ether	7005-72-3	0	~	b	*2.630*	U	*2.700*	U	*2.500*	U
4-Nitroaniline	100-01-6	~	~		2.630	U	2.700	U	2.500	U
4-Nitrophenol	100-02-7	60	~	b	5.260	U	5.410	U	5.000	U
Semivolatile Organic Compounds (µg/L)										
Acetophenone	98-86-2	~	~		2.630	U	2.700	U	2.500	U
Benzaldehyde	100-52-7	~	~		2.630	U	2.700	U	2.500	U
Benzyl butyl phthalate	85-68-7	19	~	b	2.630	U	2.700	U	2.500	U
Bis(2-chloroethoxy)methane	111-91-1	~	~		2.630	U	2.700	U	2.500	U
Bis(2-chloroethyl)ether	111-44-4	~	~		1.050	U	1.080	U	1.000	U
Bis(2-chloroisopropyl)ether	108-60-1	~	~		2.630	U	2.700	U	2.500	U
Caprolactam	105-60-2	~	~		2.630	U	2.700	U	2.500	U
Carbazole	86-74-8	~	~		2.630	U	2.700	U	2.500	U
Dibenzofuran	132-64-9	3.7	~	b	2.630	U	2.700	U	2.500	U
Diethyl phthalate	84-66-2	210	~	b	2.630	U	2.700	U	2.500	U
Dimethyl phthalate	131-11-3	~	~		2.630	U	2.700	U	2.500	U
Di-n-butyl phthalate	84-74-2	19	~	b	2.630	U	2.700	U	2.500	U
Di-n-octyl phthalate	117-84-0	22	~	b	2.630	U	2.700	U	2.500	U
Hexachlorocyclopentadiene	77-47-4	0.45	4.5		*5.260*	U	*5.410*	U	*5.000*	U
Isophorone	78-59-1	~	~		2.630	U	2.700	U	2.500	U
N-nitroso-di-n-propylamine	621-64-7	~	~		2.630	U	2.700	U	2.500	U
N-Nitrosodiphenylamine	86-30-6	210	~	b	2.630	U	2.700	U	2.500	U
Phenol	108-95-2	4	~	b	2.630	U	2.700	U	2.500	U
Propargite	2312-35-8	~	~		2.630	U	2.700	U	2.500	U
Pyridine	110-86-1	2380	~	b	2.630	U	2.700	U	2.500	U
Acenaphthene	83-32-9	5.3	48		0.3580		0.0541	U	0.0500	U
Acenaphthylene	208-96-8	~	~		0.0526	U	0.0541	U	0.0500	U
Anthracene	120-12-7	3.8	35		0.0526	U	0.0541	U	0.0500	U
Atrazine	1912-24-9	1.8	~	b	0.526	U	0.541	U	0.500	U
Benzo(a)anthracene	56-55-3	0.03	0.23		0.0526	U	0.0541	U	0.0500	U
Benzo(a)pyrene	50-32-8	0.015	~	b	*0.0526*	U	*0.0541*	U	*0.0500*	U
Benzo(b)fluoranthene	205-99-2	~	~		0.0526	U	0.0541	U	0.0500	U
Benzo(g,h,i)perylene	191-24-2	~	~		0.0526	U	0.0541	U	0.0500	U
Benzo(k)fluoranthene	207-08-9	~	~		0.0526	U	0.0541	U	0.0500	U
Bis(2-ethylhexyl)phthalate	117-81-7	16	~	b	3.190		0.541	U	2.440	
Chrysene	218-01-9	~	~		0.0526	U	0.0541	U	0.0500	U
Dibenzo(a,h)anthracene	53-70-3	~	~		0.0526	U	0.0541	U	0.0500	U
Fluoranthene	206-44-0	0.04	~	b	0.0526	U	0.0541	U	0.0500	U
Fluorene	86-73-7	0.54	4.8		0.0526	U	0.0541	U	0.0500	U
Hexachlorobenzene	118-74-1	0.0003	~	b	*0.0211*	U	*0.0216*	U	*0.0200*	U
Hexachlorobutadiene	87-68-3	1	10		0.526	U	0.541	U	0.500	U
Hexachloroethane	67-72-1	12	~	b	0.526	U	0.541	U	0.500	U
Indeno(1,2,3-cd)pyrene	193-39-5	0	~	b	*0.0526*	U	*0.0541*	U	*0.0500*	U
Naphthalene	91-20-3	13	110		0.0526	U	0.0757		0.0500	U
Nitrobenzene	98-95-3	~	~		0.263	U	0.270	U	0.250	U
N-Nitrosodimethylamine	62-75-9	117	~	b	0.526	U	0.541	U	0.500	U
Pentachlorophenol	87-86-5	6.7	8.7		0.263	U	0.270	U	0.250	U
Phenanthrene	85-01-8	5	45		0.0526	U	0.0541	U	0.0500	U
Pyrene	129-00-0	4.6	42		0.0526	U	0.0541	U	0.0500	U

Sample Location	CAS Number	NYSDEC TOGS Standards and Guidance Values		Secondary Sources	MW-2	MW-3	LMW08S	
Sample ID		Aquatic Health: Chronic	Aquatic Health: Acute		MW-2_090518	MW-3_090618	LMW08S_090518	
Lab ID					18I0168-03	18I0253-01	18I0168-04	
Sampling Date and Time					9/5/2018 1:45:00 PM	9/6/2018 11:40:00 AM	9/5/2018 4:36:00 PM	
Pesticides (µg/L)								
4,4'-DDD	72-54-8		~		NT	NT	0.00410	U
4,4'-DDE	72-55-9	~	~		NT	NT	0.00410	U
4,4'-DDT	50-29-3	0.001	1.1	a	NT	NT	*0.00410*	U
Total DDT	~	0.000011	~		NT	NT	*0.00410*	U
Aldrin	309-00-2	~	3	a	NT	NT	0.00410	U
alpha-BHC	319-84-6	~	~		NT	NT	0.00410	U
alpha-Chlordane	5103-71-9	~	~		NT	NT	0.00410	U
beta-BHC	319-85-7	~	~		NT	NT	0.00410	U
Chlordane, total	57-74-9	0.0043	2.4	a	NT	NT	*0.02050*	U
delta-BHC	319-86-8	141	~	b	NT	NT	0.00410	U
Dieldrin	60-57-1	0.056	0.24		NT	NT	0.00205	U
Endosulfan I	959-98-8	0.056	0.22	a	NT	NT	0.00410	U
Endosulfan II	33213-65-9	0.056	0.22	a	NT	NT	0.00410	U
Endosulfan sulfate	1031-07-8	~	~		NT	NT	0.00410	U
Endrin	72-20-8	0.036	0.086		NT	NT	0.00410	U
Endrin aldehyde	7421-93-4	~	~		NT	NT	0.01030	U
Endrin ketone	53494-70-5	~	~		NT	NT	0.01030	U
gamma-BHC (Lindane)	58-89-9	~	0.95		NT	NT	0.00410	U
gamma-Chlordane	5566-34-7	~	~		NT	NT	0.01030	U
Heptachlor	76-44-8	0.04	~		NT	NT	0.00410	U
Heptachlor epoxide	1024-57-3	0.03	~		NT	NT	0.00410	U
Methoxychlor	72-43-5	0.03	~		NT	NT	0.00410	U
Toxaphene	8001-35-2	0.005	1.6		NT	NT	*0.103*	U
Metals, Total (µg/L)								
Aluminum	7429-90-5	100	~		NT	NT	**141**	
Arsenic	7440-38-2	150	340		NT	NT	3.13	
Barium	7440-39-3	4	~	b	NT	NT	**124**	
Cadmium	7440-43-9	2.1	3.8		NT	NT	1.11	U
Calcium	7440-70-2	116000	~	b	NT	NT	84500	
Chromium	7440-47-3	74	570		NT	NT	5	U
Cobalt	7440-48-4	5.0	110		NT	NT	5	U
Copper	7440-50-8	9.0	13		NT	NT	5.55	
Iron	7439-89-6	300	~		NT	NT	**2640**	
Lead	7439-92-1	3.8	97		NT	NT	**5.77**	
Magnesium	7439-95-4	82000	~	b	NT	NT	21800	
Manganese	7439-96-5	120	~	b	NT	NT	**560**	
Nickel	7440-02-0	52	468		NT	NT	5	U
Mercury	7439-97-6	0.77	1.4		NT	NT	0.20	U
Potassium	7440-09-7	53000	~	b	NT	NT	5700	B
Silver	7440-22-4	0.1	4		NT	NT	*5*	U
Selenium	7782-49-2	4.6	~		NT	NT	1.11	U
Sodium	7440-23-5	680000	~	b	NT	NT	22900	
Thallium	7440-28-0	8.0	20		NT	NT	1.11	U
Vanadium	7440-62-2	14	190		NT	NT	10	U
Zinc	7440-66-6	83	117		NT	NT	15	U

Appendix I - Table 1
Groundwater Sample Analytical Results Summary
Fish and Wildlife Resource Impact Analysis
41 Kensico Drive, Mount Kisco, NY
Langan Project No. 190046301
BCP ID No. C360163

Sample Location Sample ID Lab ID Sampling Date and Time	CAS Number	NYSDEC TOGS Standards and Guidance Values Aquatic Health: Chronic	 Aquatic Health: Acute	Secondary Sources	MW-2 MW-2_090518 18I0168-03 9/5/2018 1:45:00 PM		MW-3 MW-3_090618 18I0253-01 9/6/2018 11:40:00 AM		LMW08S LMW08S_090518 18I0168-04 9/5/2018 4:36:00 PM	
Metals, Dissolved (µg/L)										
Aluminum	7429-90-5	100	~		NT		NT		55.60	U
Arsenic	7440-38-2	150	340		NT		NT		2.72	
Barium	7440-39-3	4	~	b	NT		NT		**117**	
Calcium	7440-70-2	116000	~	b	NT		NT		80900	
Chromium	7440-47-3	74	570		NT		NT		5.56	U
Cobalt	7440-48-4	5	110		NT		NT		5.56	U
Copper	7440-50-8	9.0	13		NT		NT		5.56	U
Iron	7439-89-6	300	~		NT		NT		**2430**	B
Lead	7439-92-1	3.8	97		NT		NT		5.56	U
Magnesium	7439-95-4	82000	~	b	NT		NT		20000	
Manganese	7439-96-5	120	~	b	NT		NT		**535**	
Nickel	7440-02-0	52	468		NT		NT		5.56	U
Mercury	7439-97-6	0.77	1.4		NT		NT		0.20	U
Potassium	7440-09-7	53000	~	b	NT		NT		5750	
Silver	7440-22-4	0.10	4.1		NT		NT		*5.56*	U
Selenium	7782-49-2	4.6	~		NT		NT		1.11	U
Sodium	7440-23-5	680000	~	b	NT		NT		22000	
Vanadium	7440-62-2	14	190		NT		NT		11.10	U
Zinc	7440-66-6	83	117		NT		NT		16.70	U
Cyanide, Total (µg/L)										
Cyanide, total	57-12-5	5.2	22		NT		NT		10.00	U
Polychlorinated Biphenyls (µg/L)										
Total PCBs	1336-36-3	0.000074	~	b	NT		NT		*0.05*	U

NOTES:

1 U	= Indicates 1/2 the reporting limit exceeds the lowest NYSDEC TOGs Standard and Guidance Value
10	= Indicates that the concentration exceeds the Aquatic (Chronic) NYSECTOGs Standard and Guidance Value
20	= Indicates that the concentration exceeds the Aquatic (Acute) NYSEC TOGs Standard and Guidance Value

1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for drinking water (class GA) .

2. Freshwater surface water screening values are from NYSDEC Standards and Guidance Values, unless otherwide noted:
a - National Recommended Water Quality Criteria - Aquatic Life Criteria 2018. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table
b - USEPA Region III Biological Technical Assistance Group (BTAG) - Freshwater Screening Benchmarks. 2006. https://www.epa.gov/sites/production/files/2015-09/documents/r3_btag_fw_benchmarks_07-06.pdf

ug/L=micrograms per litter
D=result is from an analysis that required a dilution
J=analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated
U=analyte not detected at or above the level indicated
B=analyte found in the analysis batch blank
NT=this indicates the analyte was not a target for this sample
~=this indicates that no regulatory limit has been established for this analyte

ATTACHMENTS

Photo 1: General view of Branch Brook (facing northeast).

Photo 2: Exposed fill from railway embankment eroding to Branch Brook (facing east)

Photo 3: Railway embankment erosion (facing northeast)

Photo 4: Storm sewer outfall located near the northeastern corner of the property (facing north)

Photo 5: Drainage channel from parking lot (facing west)

Photo 6: Drainage channel from parking lot (facing northwest)