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16 April 2021

Meghan Medwid
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
625 Broadway, 12th Floor
Albany, New York 12233-7016

Re: Response to NYSDEC February 23, 2021 Draft Remedial Investigation Report Comment Letter
280 West 155th Street
Site No. C231138
New York, New York
Langan Project No. 100765102

Dear Ms. Medwid:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has reviewed the February 23, 2021 comment letter provided by The New York State Department of Environmental Conservation (DEC) in consultation with the New York State Department of Health (DOH) related to Langan's Remedial Investigation Report (RIR) dated January 14, 2021 for the site C231138 280 West 155th Street. This letter provides the requested responses to the Department's comments. For ease of review, the Department's comments are provided below followed by Langan's responses in italics.

General Comments

1. Section 7.5.2: The word marginalized seems incorrect.

   Langan Response: The wording has been revised.

Technical Comments

2. 4.7 Draft Interim Remedial Measures Work Plan (2020): An interim remedial measure (IRM) needs to address site contamination and cannot be for development purposes. Clarify why the IRM is needed to achieve remedial goals.

   Langan Response: Implementation of the IRM will support the execution of the future remedy through the excavation and removal of shallow hotspots containing elevated concentrations of lead and initiation of support-of-excavation (SOE) installation. SOE installation is necessary for future excavation and removal of deep hotspots, which are impacted up to 15 feet below ground surface (bgs) with elevated concentrations of metals and polycyclic aromatic hydrocarbons (PAHs). SOE installation also is necessary for the future excavation and removal of petroleum impacts for the remediation of Spill No. 1902392 up to 15 feet bgs. This clarification has been added to the referenced Section of the RIR.

3. 7.3 Summary of Environmental Conditions: DOH (Department of Health) guidance applies to soil vapor intrusion by contaminants. There are no standards for soil vapor. Please revise.

   Langan Response: The phrasing has been revised.

4. 7.4.2 Exposure Media: DOH guidance applies to soil vapor intrusion by contaminants. There are no standards for soil vapor. Please revise.

   Langan Response: The phrasing has been revised.

5. Section 7.5.3 Proposed Future Conditions states that a vapor barrier *and* sub-slab depressurization system (SSDS) will be installed at the on-site building. Since this is an RIR, specific remedial elements are not required for this document. Please revise to indicate that an SSDS *may* be proposed as part of the proposed remedy.

   Langan Response: The phrasing has been revised.

6. 8.1 Petroleum Impacted Soil and Groundwater: IRM needs to address site contamination and cannot be for development purposes. Clarify why the IRM is needed to achieve remedial goals.

   Langan Response: Implementation of the IRM will support the execution of the future remedy through the excavation and removal of shallow hotspots containing elevated concentrations of lead and initiation of support-of-excavation (SOE) installation. SOE installation is necessary for future excavation and removal of deep hotspots, which are impacted up to 15 feet below ground surface (bgs) with elevated concentrations of metals and polycyclic aromatic hydrocarbons (PAHs). SOE installation also is necessary for the future excavation and removal of petroleum impacts for the remediation of Spill No. 1902392 up to 15 feet bgs. This clarification has been added to the referenced Section of the RIR.

7. 8.4 Soil Vapor Contamination: DOH guidance applies to soil vapor intrusion by contaminants. There are no standards for soil vapor. Please revise.

   Langan Response: The phrasing has been revised.

8. Figure 6: For sampling locations with a result higher than the soil clean up objective, report detections at all depths. Do not use NE (no exceedance).

   Langan Response: Figure 6 has been revised.

9. Figure 6: Remove sample location markers for pre-characterization soil samples.

   Langan Response: Figure 6 has been revised.

10. Figure 7: For sampling locations with a result higher than the soil clean up objective, report detections at all depths. Do not use NE.

    Langan Response: Figure 7 has been revised.

11. Figure 9: For sampling locations with a result higher than the soil clean up objective, report detections at all depths. Do not use NE.

    Langan Response: Figure 9 has been revised.

12. Figure 9: Remove sample location markers for pre-characterization soil samples.

    Langan Response: Figure 9 has been revised.

13. Figure 10: For sampling locations with a result higher than the soil clean up objective, report detections at all depths. Do not use NE.

    Langan Response: Figure 10 has been revised.

14. Figure 8 and Figure 11: Based on the variability of soil vapor sample results collected from two different sampling events, the information provided in figure 8 and figure 11 should be combined to illustrate all soil vapor sampling results conducted during the remedial investigation. In addition to all the sampling results, the figures should specify the sample collection depths of each soil vapor sample.

    Langan Response: Figure 8 and former Figure 11 have been combined into a single Figure (Figure 8).

Sincerely,
Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.

Christopher McMahon, CHMM
Associate

CM:kn
cc: G. Burke – NYSDEC
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S. Ciambruschini - Langan
M. Bogin - Sive, Paget & Riesel, P.C.
P. Sabharwal – Sabharwal Properties

REMEDIAL INVESTIGATION REPORT

for

280 WEST 155th STREET DEVELOPMENT
New York, New York
NYSDEC BCP Site No. C231138

Prepared For:

280 West 155 Owner, L.L.C
c/o Sabharwal Properties
9 Wash Hollow Road
Oyster Bay, New York 11771

Prepared By:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
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Senior Principal

15 April 2021
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CERTIFICATION

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

Steven A. Ciambruschini, P.G.

1.0 INTRODUCTION

On behalf of 280 West 155 Owner, L.L.C. (the Requestor), Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has prepared this Remedial Investigation (RI) Report for the approximate 37,500-square-foot property located at 280 West 155th Street (Figure 1), in the Harlem neighborhood of Manhattan, New York (hereinafter the "Site"). 280 West 155 Owner, L.L.C is participating in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as a Volunteer as defined in ECL 27-1405 (1)(b) and as identified in the executed Amendment to the Brownfield Cleanup Agreement dated 2 January 2020. The Site is identified in the BCP as Site No. C231138.

The RI was conducted in accordance with the 3 June 2020 Remedial Investigation Work Plan (RIWP) prepared by Langan and approved by the NYSDEC on 12 June 2020. The investigation was completed to further investigate potential on-site sources and extents of soil, groundwater and soil vapor impacts identified in the 19 July 2019 Phase II Environmental Investigation report (Phase II EI) prepared by Langan for the previous property owner, 280 W 155 ST OWNER LLC. Results of these investigations and areas of concern identified in these reports are described in detail in Section 4.0 of this report. Specifically, investigation activities were completed in AOC-1 Petroleum Impacts from Historical Operations, AOC-2 Chlorinated Volatile Organic Compound (VOC) Impacts from Historical Site Operations, and AOC-3 Historical Filling Associated with the Harlem River. As requested in the 24 April 2020 NYSDEC Draft RIWP Comment Letter, further investigation was completed to evaluate potential exposure via soil vapor intrusion at the buildings immediately adjacent to the Site. The Remedial Investigation was conducted in accordance with the process and requirements identified in the NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation (May 2010) and the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, with updates" (October 2006).

2.0 SITE DESCRIPTION

2.1 Physical Setting

The approximately 37,500-square feet site located at 280 West 155th Street in the Harlem neighborhood of Manhattan, New York, is designated as New York City Tax Block 2040, Lot 48. The site was most recently operated as an at-grade asphalt-paved parking lot and was vacated in November 2020.

The Site is bound to the north by West 155th Street and the elevated 155th Street Viaduct associated with the Macomb's Dam Bridge followed by Holcombe Rucker Park; an asphalt-paved parking lot to the east; two single-story commercial/industrial buildings including a Toyota Automotive Repair facility and Ferguson Plumbing Supply store, two four-story mixed-use residential/commercial buildings, and two four- to six-story residential buildings to the south; and by Frederick Douglass Boulevard followed by a two-story mixed-use residential/commercial building to the west. The Site is located within a commercial zoning district (C8-3) and is currently designated for garage/gas station use (G6) by the New York City Department of Finance.

2.2 Site Stratigraphy and Hydrogeology

Based on a 3 November 2020 survey prepared by Langan, existing site grade ranges from about el 11.64 to el 17.5 North American Vertical Datum of 1988 (NAVD88).

Based on observations made during environmental and geotechnical investigations completed by Langan in 2019 and 2020, the subsurface strata at the Site consists of historic fill; generally consisting of fine to coarse sand with varying proportions of silt and gravel and miscellaneous debris, including brick, wood, asphalt, plastic, and metal to depths ranging from 12 to 25 feet below grade. The fill is underlain by a soft upper clay unit, a medium dense silty sand unit, a medium-stiff to stiff lower clay unit, a dense to very dense sand and gravel unit, and weathered / decomposed rock. Findings of the 2020 Remedial Investigation are consistent with these findings. Subsurface profiles are provided in Figures 2A and 2B.

According to the USGS Bedrock and Engineering Geologic Maps of New York County and Parts of Kings and Queens Counties, New York, and parts of Bergen and Hudson Counties, New Jersey, by Charles A. Baskerville dated 1994, the Site is underlain by Inwood Marble, consisting mainly of white to blueish-gray calcitic and dolomitic marble, and Fordham Gneiss, consisting mainly of black and white layered gneiss. The map indicates the Manhattan Schist formation is also located in close proximity the Site. Based on borings completed during Langan's 2019 and 2020 geotechnical investigation, the top of bedrock was observed to range between approximately 33- to 105-feet below grade. Competent bedrock was not encountered in soil borings installed as part of the 2019 or 2020 environmental investigations.

According to the 1874 Sanitary & Topographical Map of the City and Island of New York by Egbert L. Viele, the Site is located in an area historically inundated by water associated with the Harlem River. As the area is no longer inundated with water the area was subject to historical filling using material of an unknown origin to fill the area and raise grades.

Groundwater was encountered between 8.08 and 10.98 feet below ground surface and at depths corresponding to between el 4.82 and 6.4 NAVD88 during the RI. Based on area topography, observed water level measurements, and the proximity of the Site to the Harlem River, groundwater flow is to the southeast towards the Harlem River. A potentiometric surface map is provided as Figure 3.

Langan reviewed United States Fish and Wildlife National Wetland Inventory (NWI) and New York State Freshwater Wetlands maps. Based on these documents, no mapped wetlands are listed on the subject property, although the Harlem River is approximately 400-feet east of the subject property.

2.3 Surrounding Property Land Use

According to records maintained online by New York City Open Accessible Space Information System (NYCOASIS) and aerial/street-view observations provided by Google Maps, surrounding properties include a commercial/office building, a mixed residential/commercial building, residential buildings, parking lots, and West 155th Street followed by Holcombe Rucker Park. Adjacent properties and surrounding land use details are presented on Figure 4. The following is a summary of surrounding property use:

Direction	**Adjacent Properties**			**Surrounding Properties**
	Block No.	**Lot No.**	**Description**	
North	2105	1	West 155th Street followed by Holcombe Rucker Park (2930 8th Avenue)	Frederick Douglas Boulevard and Harlem River Drive Service Road followed by residential/commercial buildings
East	2040	43	NYCDOT Parking Lot (204 West 155th Street)	Parking lots and a commercial/office building
South	2040	5	True Colors Residence (269 West 154th Street)	A commercial/ office building, mixed residential/ commercial buildings, and West 154th Street followed by residential buildings and a public facility / institution
		6	True Colors Residence (267 West 154th Street)	
		7	Commercial/office building (251 West 154th Street)	
		21	Parking Lot (235 West 154th Street)	
West	2040	63	Residential building (2922 Frederick Douglass Boulevard)	Frederick Douglas Boulevard followed by mixed residential/ commercial building, residential buildings, a transportation / utility building, and a public facility / institution
		64	Residential building (2920 Frederick Douglass Boulevard)	
	2047	36	Frederick Douglas Boulevard followed by a mixed residential/commercial building (2923 Frederick Douglass Boulevard)	

Public infrastructure (storm drains, sewers, and underground utility lines) exists within the street to the north and west of the Site. Sensitive receptors (as defined in DER-10) located within a half mile of the Site include:

Number	Name (Approximate distance from site)	Address
1	Episcopal Social Services (approximately 750 feet north of the Site)	2967 Frederick Douglas Blvd New York, NY 10039
2	Prince Hall Service Fund, Inc. (approximately 1,500 feet north of the Site)	159-30 Harlem River Drive New York, NY 10039
3	Lutheran Social Services of Metropolitan New York (approximately 2,000 feet south of the Site)	218 West 147th Street New York, NY 10039
4	Mary Walton Children's Center (approximately 750 feet south of the Site)	224 West 152nd Street New York, NY 10039
5	Moreau LMSW Children & Family Services P.C. (approximately 1,800 feet southwest of the Site)	764 St. Nicholas Ave New York, NY 10031
6	Resurrection School (approximately 1,000 fee southwest of the Site)	282 West 151st Street New York, NY 10039
7	United Federation of Black Community Organization, Inc. (approximately 1,800 feet northwest of the Site)	474 West 159th Street New York, NY 10032
8	Public School 046 Arthur Tappan (approximately 1,000 feet north of the Site)	2987 Frederick Douglass Blvd New York, NY 10039
9	Public School 200 James M. Smith/ Frederick Douglas Secondary School (approximately 1,500 feet south of the Site)	2589 7th Avenue New York, NY 10039
10	Public School 028 Wright Brothers (approximately 1,700 feet northwest of the Site)	475 West 155th Street New York, NY 10032

2.4 Historical Site Usage

Based on Langan's review of previous environmental assessments and investigation reports prepared for the Site (listed in the subsequent section), and review of available records maintained online by the New York City Department of Buildings (NYCDOB), historical use and features of the subject property include a steam laundry building with an associated boiler room and an automotive repair facility. It is unclear if active dry cleaning operations occurred on Site. The adjacent property to the south historically operated as an automotive repair facility and the associated certificate of occupancy identified a portion of the subject Site (former Lot 48) as part of an approved gasoline storage and automotive repair parcel.

The 1874 Sanitary & Topographical Map of the City and Island of New York by Egbert L. Viele, identify the Site within the historical extents of the Harlem River and consisting of created land, indicating that the area was subject to historical filling using material of an unknown origin to raise grades.

The primary contaminants of concern identified during the previous environmental investigations are free-phase petroleum (light non-aqueous phase liquid [LNAPL]) in soil and groundwater within the eastern portion of the site, and semi-volatile organic compounds (SVOCs) and metals commonly associated with petroleum impacts and historic fill, detected in soil at concentrations exceeding the Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (6 NYCRR) NYSDEC Part 375 Commercial Restricted Use Soil Cleanup Objectives (RUSCOs), and in groundwater at concentrations exceeding the 6 NYCRR Part 703.5 Class GA Groundwater Quality Standards and Division of Water Technical and Operational Guidance Series 1.1.1 (collectively referred to as SGVs). Additionally, petroleum-related VOCs and chlorinated VOCs (CVOCs) were detected in soil vapor.

3.0 PROPOSED REDEVELOPMENT PLAN

The Site is proposed to be developed with a 3-story commercial self-storage building with a cellar level. The cellar and first floor will occupy approximately 31,930-square-feet and approximately 25,795-square-feet, respectively, of the approximate 37,500-square-foot property. The northwestern portion of the site will be used as a paved driveway / parking area with the proposed building constructed overhead. Excavation for the construction of the cellar slab is anticipated to be completed to el 6.5 feet NAVD88.

4.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Previous environmental correspondence, environmental site assessment reports, and environmental investigation reports were provided for review prior to field investigation activities. Environmental correspondence, assessments, and investigation reports provided for review are listed below.

- *Phase I Environmental Study*, prepared by Singer Environmental Group, Ltd. (Singer), dated August 1998
- *Phase I Environmental Site Assessment*, prepared by P.W. Grosser Consulting, Inc. (P.W. Grosser), dated December 2018
- *Environmental Soil Pre-Characterization Investigation*, prepared by Langan, dated 2 July 2019
- *Phase II Environmental Investigation Report*, prepared by Langan, dated 19 July 2019
- *Remedial Investigation Work Plan,* prepared by Langan, dated 3 June 2020
- *Phase I Environmental Site Assessment,* prepared by Langan, dated 13 August 2020
- *Draft Interim Remedial Measures Work Plan,* prepared by Langan, dated 7 December 2020

Previous reports are provided in Appendix C of Langan's 3 June 202 RIWP. Validated soil, groundwater, and soil vapor analytical results of Langan's 2019 Phase II EI are summarized in Tables 2 through 4 and on Figures 6 through 8 of this report. Data Usability Summary Reports (DUSRs) for these analytical results were provided as Attachment G of Langan's 2019 Phase II EI Report.

4.1 Phase I Environmental Study – Singer Environmental Group Ltd. (1998)

Singer Environmental Group, Ltd. (Singer) conducted a Phase I Environmental Study investigation dated 18 August 1998 for former Lots 61 and 62 identified as 2924 & 2926 Frederick Douglass Boulevard in New York, New York. The Phase I did not include former Lot 48. At the time of the investigation, the site was operated as a parking lot. Based on Singer's assessment there was no evidence of heavy manufacturing, use and/or storage of chemicals or fuel supplies on the subject property or at adjacent properties. No recognized environmental concerns

(RECs), historic recognized environmental concerns (HRECs), or business environmental risks (BERs) were identified on the property.

4.2 Phase I Environmental Site Assessment - P.W. Grosser Consulting, Inc. (2018)

P.W. Grosser Consulting, Inc. (P.W. Grosser) conducted a Phase I Environmental Site Assessment (ESA) dated December 2018 for former Lots 48, 61, and 62 identified as 2926 Frederick Douglas Boulevard, 225 West 155th Street, and 204 West 155th Street in New York, New York.

P.W. Grosser's Phase I ESA identified the following RECs:

- Historical site use as a steam laundry facility from approximately 1930 to 1980;
- Subject property identified as a Brownfield property;
- Historical use as automotive repair at adjacent properties;
- An active spill at 250 Bradhurst Avenue, located 0.7 miles upgradient of the Site; and
- Two active leaking tanks cases at the Jackie Robinson Rec Center, located upgradient of the Site.

4.3 Environmental Soil Pre-Characterization Investigation – Langan (2019)

Langan conducted a waste characterization investigation in March 2019 for Lot 48 (former Lots 48, 61, and 62). Results of the investigation were summarized in the 3 July 2019 Environmental Soil Pre-Characterization Results Letter which was submitted to NYSDEC in Attachment C of the BCP Application.

Evidence of petroleum impacts including the presence of product and/or sheen and odor were encountered in soil at 5 of 22 soil boring locations at depths ranging from 6 to 12 feet bgs. These impacts were observed in the eastern portion of the site, which was historically approved for automotive repair and fuel storage, and in the vicinity of the boiler room associated with the former steam laundry facility.

Laboratory analytical results are summarized in Table 1 of the 19 July 2019 Phase II Environmental Investigation Report (discussed below) and revealed elevated concentrations of SVOCs exceeding the NYSDEC Industrial RUSCOs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Exceedances of the Commercial RUSCOs were also detected for the SVOCs benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Exceedances of the Restricted Use SCOs for metals include mercury which was detected at a concentration exceeding the Industrial RUSCO, and barium which was detected at concentrations exceeding the Commercial RUSCOs.

4.4 Phase II Environmental Investigation – Langan (2019)

Langan conducted a Phase II EI in 2019 for Lot 48 (former Lots 48, 61, and 62). Results of the investigation were summarized in the 19 July 2019 Phase II Environmental Investigation Report which was submitted to NYSDEC in Attachment C of the BCP Application. The investigation included installation of 13 soil borings, five groundwater monitoring wells, and four soil vapor sampling points, and collection of soil, groundwater, and soil vapor samples to assess potential subsurface impacts associated with historical use of the site as a laundry facility, potential automotive repair and gasoline station operations, and the presence of historic fill due to proximity to historical waterways. Validated analytical results of this investigation are summarized in Tables 2 through 4 and on Figures 6 through 8.

Evidence of petroleum impacts were encountered in soil at 4 of 13 soil boring locations as evidenced by the presence of sheen, odor, LNAPL and elevated photoionization detector (PID) readings. These impacts were observed in the central-eastern portion of the Site within the footprint of former Lot 48, which was historically approved for automotive repair and associated fuel storage, and in the vicinity of the boiler room associated with the former steam laundry facility.

Analytical results of soil samples collected during the 2019 Phase II EI are summarized in Table 2 and on Figure 6 and were compared to the 6 NYCRR NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs) and RUSCOs. Soil analytical results were also compared to NYSDEC Commissioner’s Policy 51 (CP-51) Supplemental SCOs. Analytes detected above Commercial RUSCOs are listed below.

Groundwater sample results are summarized in Table 3 and on Figure 7 and were compared to NYSDEC SGVs; analytes detected above the regulatory criteria are also summarized below.

Soil vapor sample results are summarized in Table 4 and on Figure 8 and were evaluated using the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in New York State Soil Vapor/Indoor Air Decision Matrices dated October 2006 and updated May 2017; results are summarized below.

Soil:

Light Non-Aqueous Phase Liquid (LNAPL) was detected in four soil borings between 5 and 11.5 feet and within approximately 2 feet of the observed groundwater interface. Field screening was completed with a photoionization detector (PID) for total VOCs. Concentrations above background were observed in the four soil borings where LNAPL was observed at concentrations between 0.2 parts-per-million (ppm) and 50.5 ppm.

Five SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene were detected at concentrations above the Commercial RUSCOs at six of the twelve soil boring locations. Metals arsenic and mercury were detected in soil samples at concentrations above the Commercial RUSCOs at two of the twelve soil boring locations.

Groundwater:

LNAPL was detected at one groundwater monitoring well. A groundwater sample was not collected from this location. Due to the viscosity of the product, a thickness measurement could not be obtained. Sheen was observed during purging and/or sampling in two of the four groundwater monitoring wells sampled. PID readings at the monitoring well head were detected between 0.0 ppm and 1.5 ppm.

The VOC tert-butyl methyl ether was detected in one groundwater monitoring well at a concentration exceeding the SGVs.

Up to six SVOCs were detected in the four groundwater monitoring wells at concentrations exceeding the SGVs including benzo(a)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene at all four groundwater monitoring wells, and benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene at one groundwater monitoring well. The metal lead was detected in one groundwater well at a concentration exceeding the SGVs.

Soil Vapor:

Soil vapor results identified concentrations of petroleum-related VOCs including benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX) at cumulative concentrations that ranged from 39.446 microgram per cubic meter (µg/m^3) to 92.558 µg/m^3. Benzene was detected in three of the four soil vapor samples, and toluene, ethylbenzene, and xylenes were detected in all four soil vapor samples. Petroleum-related VOCs including 1,2,4-trimethylbenzene (13.6 µg/m^3– 17.9 µg/m^3) and 1,3,5-trimethylbenzene (3.5 µg/m^3 – 3.75 µg/m^3) were also detected.

The CVOCs tetrachloroethene (PCE) and 1-1-1-trichloroethane, which are included in the NYSDOH Final Guidance for Evaluation of Soil Vapor Intrusion Matrix B, were detected in soil vapor samples collected at the site. PCE was detected in all four soil vapor samples collected and 1-1-1-trichloroethane was detected in one soil vapor sample collected. PCE (189 µg/m^3 - 345 µg/m^3) was detected at concentrations above the recommended threshold for monitoring and/or mitigation identified in the NYSDOH Soil Vapor Intrusion Matrix B; 1-1-1-trichloroethane was not detected at concentrations above this threshold.

Ambient atmospheric pressure ranged from 29.85 to 29.87 in Hg during the sampling timeframe.

LNAPL:

Two petroleum identification (fingerprint) samples were collected and submitted for analysis. The product was determined to be a combination of material similar to Diesel Fuel/Fuel Oil #2 and material which is similar to a hydraulic, lubricating, motor, or waste oil type product.

Based on the observations of LNAPL during the Phase II Environmental Investigation, NYSDEC was notified of a release and Spill No. 1902392 was assigned on 6 June 2019.

Conclusions and Recommendations

Based on the results of the investigation, three Areas of Concern (AOCs) related to historical site operations, discussed in detail in Section 5.0, were identified:

petroleum impacts from historical site operations, CVOC impacts from historical site operations, and historical filling associated with the Harlem River.

4.5 June 2020 Remedial Investigation Work Plan – Langan (2020)

A Remedial Investigation Work Plan dated 3 June 2020 was prepared by Langan for 280 W 155 ST OWNER LLC. The RIWP was prepared to investigate and characterize "the nature and extent of the contamination at and/or emanating from the brownfield site" per ECL Article 27-1415(2) (Brownfield Cleanup Program) including the horizontal delineation of NAPL within the southeastern portion of the Site as previously documented in Langan's 19 July 2019 Phase II EI Report and to evaluate potential exposure via soil vapor intrusion at the buildings immediately adjacent to the site as required by the 24 April 2020 NYSDEC Draft RIWP Comment Letter for the Draft RIWP submitted to the NYSDEC on 19 March 2020.

The scope of work for the RI presented in the RIWP consisted of:

- A geophysical survey throughout the Site;
- Advancement of 18 soil borings (LSB-36 through LSB-50 and LSB-52 through LSB-54) and collection of 38 soil samples (including two duplicate samples);
- Installation of four permanent monitoring wells (LMW-6 through LMW-9) and collection of 10 groundwater samples (including one duplicate sample) from LMW-1 through LMW-9;
- Survey and gauging of monitoring wells to evaluate groundwater elevation and flow directions; and,
- Installation of 14 soil vapor points (LSV-5 through LSV-18) and collection of 15 soil vapor samples (including one duplicate sample) and two ambient air samples.

4.6 Phase I ESA - Langan (2020)

Langan prepared a Phase I Environmental Site Assessment (ESA) dated 13 August 2020 for the subject property on behalf of CSP Self Storage II, LLC.

The Phase I ESA identified the following RECs and BERs:

- Open Spill No. 1902392 in the area of the historical automotive repair and associated fuel storage and in the vicinity of the boiler room associated with the former steam laundry facility was identified as a REC;
- CVOC impacts in soil vapor associated with historical site use as a steam laundry facility and for automotive repair was identified as a REC;
- Historical fill material associated with the filling of the former extents of the Harlem River on the Site was identified as a REC; and,
- The potential presence of undocumented underground storage tanks (USTs) based on historical Site operations for commercial purposes and historical approval for fuel oil use was identified as a BER.

4.7 Draft Interim Remedial Measures Work Plan (2020)

A Draft Interim Remedial Measures (IRM) Work Plan dated 7 December 2020 was prepared by Langan for 280 W 155 St Owner LLC. The IRM Work Plan describes the procedures for decommissioning monitoring wells, excavation and disposal of historic fill material impacted with VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), and metals to between 3 and 5 feet bgs, installation of SOE along the perimeter of the site, and drilling of piles as part of the initial foundation construction. Implementation of the IRM will support the execution of the future remedy through the excavation and removal of shallow hotspots containing elevated concentrations of lead and initiation of SOE installation. SOE installation is necessary for future excavation and removal of deep hotspots, which are impacted up to 15 feet bgs with elevated concentrations of metals and polycyclic aromatic hydrocarbons (PAHs). SOE installation also is necessary for the future excavation and removal of petroleum impacts for the remediation of Spill No. 1902392 up to 15 feet bgs.

The IRM activities will include continuous screening of soil/fill disturbed during the removal of the building slab and foundation elements and work zone and perimeter air monitoring for dust, vapor, and nuisance odors.

It is not anticipated that petroleum impacted soil will be encountered or disturbed during implementation of the IRM Work Plan; however, contingencies were provided to address unforeseen contamination that may be discovered during the soil disturbance activities, including removal of grossly and/or petroleum-impacted soil hotspots and closure of any underground storage tanks (USTs) encountered during soil disturbance activities, in advance of implementation of a Remedial Action Work Plan (RAWP) for the remediation of the Site. Post-excavation end-point soil samples will be collected following removal of any identified impacted soil or impacted subgrade structures such as USTs. The IRM Work Plan scope is scheduled to be implemented in May 2021.

5.0 SUMMARY OF AREAS OF CONCERN

Based on the results of the Phase II EI, three Areas of Concern (AOCs) related to historical site operations were identified and are described in detail below. AOC locations are provided on Figure 5.

5.1 AOC-1: Petroleum Impacts from Historical Site Operations

Historical records indicate the adjacent property to the south was operated as an automotive repair garage and that these operations potentially included gasoline storage and automotive repair in the central-eastern portion of the Site. Additionally, historical records identified that a steam laundry building with a large boiler room operated on the easternmost portion of the site and that fuel oil use was historically approved for the entire site.

Environmental investigation results of this AOC identified physical evidence of contamination including elevated PID readings, odors, and observations of LNAPL in soil at LSB-24, LSB-27, LSB-28, and LSB-32 at depths between 5 and 11.5 feet bgs and on groundwater at LMW-5. Sheen and LNAPL observations are provided in Figure 11. Laboratory analysis of the LNAPL determined the sample to be a combination of material similar to Diesel Fuel/Fuel Oil #2 and material which is similar to a hydraulic, lubricating, motor, or waste oil type product. Laboratory analytical results from soil samples also identified SVOCs including PAHs above the NYSDEC SCOs, indicative of petroleum impacts and the presence of historic fill. PAHs detected in soil were also detected in groundwater above the NYSDEC SGVs. Based on the observations of LNAPL during the investigation, NYSDEC was notified of a release and Spill No. 1902392 was assigned on 6 June 2019.

Soil vapor results from within this area identified elevated concentrations of petroleum-related VOCs (BTEX). Petroleum-related VOCs including 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were also detected.

5.2 AOC-2: Chlorinated VOC Impacts from Historical Site Operations

Historic operations included a laundry facility and automotive repair shop. In order to assess the potential for these historical operations to have adversely impacted environmental conditions at the Site, soil vapor sampling was completed and the laboratory analytical results identified that PCE was detected in all soil vapor samples collected at concentrations above the monitoring and/or mitigation threshold according to NYSDOH Soil Vapor Intrusion Matrix B.

5.3 AOC-3: Historical Filling Associated with the Harlem River

According to the 1874 Sanitary & Topographical Map of the City and Island of New York by Egbert L. Viele, the site is located within the historical extents of the Harlem River and consists of created land, indicating that the area was subject to historical filling using material of an unknown origin to raise grades. Soil borings and monitoring wells were advanced throughout the entirety of the site to assess for the potential subsurface impacts from historical filling.

PAHs commonly associated with historic fill were detected at concentrations exceeding the Commercial RUSCOs.

Based on the results of soil, groundwater, and soil vapor sampling completed during the 2019 Phase II EI, petroleum impacts in soil, groundwater, and soil vapor and chlorinated VOC impacts in soil vapor are present in the subsurface which may be the result of historical site operations as an automotive repair facility, gasoline station, and a laundry facility. PAH and metal impacts in soil and groundwater are also likely the result of historical filling of the site using material of an unknown origin to raise grades.

6.0 REMEDIAL INVESTIGATION

The RI was completed to further investigate potential on-site sources and extents of impacts identified in the 19 July 2019 Phase II Environmental Investigation Report and address the requirements for additional investigation and reporting provided in the 24 April 2020 NYSDEC letter. These requirements were subsequently addressed in the RIWP dated 3 June 2020 prepared by Langan and approved by the NYSDEC on 12 June 2020.

The objectives of the RI included:

- Supplementing the investigation activities and results provided in the 2019 Phase II EI;
- Delineating NAPL within the central-eastern portion of the site as identified in the 2019 Phase II EI;
- Confirming the assumed groundwater flow direction;
- Characterizing the nature and vertical and lateral extents of the impacts in soil and groundwater;
- Evaluating contaminants in soil as a potential source of groundwater impacts;
- Based on the groundwater flow direction and groundwater analytical results, determining if groundwater impacts are confined within the Site boundaries or have the potential to migrate off-Site; and
- Completing a Site-wide assessment of soil vapor, including a perimeter investigation to evaluate potential exposure via soil vapor intrusion at the buildings immediately adjacent to the site

The scope of work for the RI consisted of:

- A site-wide geophysical survey, including clearance in the vicinity of soil boring locations, AOCs, and former site features to investigate the location of subsurface structures and utilities;
- Advancement of 18 soil borings (LSB-36 through LSB-50 and LSB-52 through LSB-54) and collection of 32 soil samples (including two duplicate samples);
- Installation of 4 permanent monitoring wells (LMW-6 through LMW-9) and collection of 19 groundwater samples (including three duplicate samples);

- Survey and gauging of monitoring wells to evaluate groundwater elevation and flow direction; and
- Installation of 14 soil vapor sampling points (LSV-5 through LSV-18) and collection of 15 soil vapor samples (including one duplicate sample) and two ambient air samples.

The results of the geophysical survey are discussed in Section 6.1. Soil, groundwater, and soil vapor sampling procedures are discussed in Sections 6.2, 6.3, and 6.4, respectively. Quality assurance procedures implemented during this investigation and data validation (Data Usability Summary Reports [DUSRs]) that were completed are discussed in Section 6.5 and results of soil, groundwater, and soil vapor sampling are discussed in Section 6.6. The locations of all soil, groundwater, and soil vapor samples collected during this investigation are shown on Figure 5. A summary of the laboratory analytical data provided for this investigation are summarized in Tables 5A through 7 and are shown on Figures 9 through 10. All samples were analyzed by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. Daily Reports of work performed are provided in Appendix G.

6.1 Geophysical Survey Investigation

A site-wide geophysical survey was completed from 27, 28, and 31 August 2020 by Hager-Richter Geoscience, Inc. of Fords, New Jersey using electromagnetic surveying equipment (i.e., the Radiodetection RD 8000 series precision utility location [PUL] instrument, Geonics EM61-MK2 time domain electromagnetic induction metal detector) and ground penetrating radar (i.e., the Geophysical Survey Systems, Inc. UtilityScan HS system). The purpose of the survey was to provide utility clearance for the investigation and to investigate AOCs and former site features. A copy of the geophysical investigation report is provided in Appendix A.

The Site was operated as an active parking lot at the time at which the geophysical survey was completed; as such, access to areas of the Site was limited by parked vehicles which could not be re-located. Areas of the Site which were inaccessible to the geophysical survey equipment are presented on Figures 2 and 3 in Appendix A.

The geophysical survey identified the presence of linear anomalies attributed to unidentified subsurface utilities, and a large anomaly determined to at least partially consist of an unidentified buried reinforced structure. Other anomalies were attributed to the presence of buried debris containing metal. Electrical utilities were identified within the vicinity of boring locations. Subsurface metallic anomalies consistent with the presence of USTs or drums were not identified.

6.2 Soil Investigation

Eighteen soil borings (LSB-36 through LSB-50 and LSB-52 through LSB-54) were completed between 27 August and 2 September 2020 by AARCO Environmental Services Corp. of Lindenhurst, New York (AARCO). LSB-51 was a proposed contingent delineation soil boring that was to be advanced if NAPL was observed at LSB-48. As no NAPL was observed in LSB-48, LSB-51 was not completed. Soil borings were completed in areas of concern that were identified during the previous Phase II EI and in areas not previously investigated, to evaluate the extents of impacts and potential remedial options based on subsurface conditions.

A sampling plan identifying the location, depth and sampling rationale for the completed borings is provided in Table 1 and boring locations are shown on Figure 5. Subsurface profiles are provided in Figures 2A and 2B.

6.2.1 Soil Boring Investigation Methodology

Soil borings were completed using a GeoProbe®7822DT track-mounted direct push drill rig to 15 feet bgs. Soil borings were completed for the purpose of Site-wide characterization, AOC and former site feature investigation, and/or NAPL delineation as described below and in Table 1:

Soil Boring(s)	Investigation Rationale
LSB-36 through LSB-39	AOC-3 Investigation and Site-wide characterization
LSB-40	Site-wide characterization, AOC-1 investigation, AOC-3 investigation, and NAPL delineation

Soil Boring(s)	Investigation Rationale
LSB-41 and LSB-42	Site-wide characterization, AOC-1 investigation, AOC-2 investigation, AOC-3 investigation, and NAPL delineation
LSB-43 and LSB-44	Site-wide characterization, AOC-1 investigation, AOC-2 investigation, and AOC-3 investigation
LSB-45 through LSB-50 and LSB-52 through LSB-54	AOC-1 investigation and NAPL delineation

Discrete soil samples were collected from the surface to the final depth of each boring and were visually classified for soil type, grain size, texture, and moisture content. At the locations completed with the direct push drill rig, continuous macrocore samples were collected in 5-foot long acetate liners to the bottom of each boring. Soil cuttings exhibiting no gross impacts were placed back into boreholes after completion of the investigation.

Field screening of soil during sample collection for VOCs using a field calibrated PID equipped with a 10.6-electron volt (eV) lamp was completed during the installation of all 18 test borings. Elevated PID readings above background were detected in soil borings as shown in the table below:

Soil Boring	Maximum PID Reading (ppm)	Depth Interval (ft bgs)
LSB-41	16.6	7.5 to 9.0
LSB-42	14.6	8.0 to 11.0
LSB-47	4.5	8.5 to 10.0
LSB-49	0.6	9.75 to 11.0
LSB-50	1.2	10.0 to 10.5

Soil Boring	Maximum PID Reading (ppm)	Depth Interval (ft bgs)
LSB-53	3.6	9.5 to 10.5
LMW-7	3.0	13.0 to 15.0

No PID readings above background were measured in LSB-36 through LSB-40, LSB-43 through LSB-46, LSB-48, LSB-52, LSB-54, and LMW-9. Petroleum-like impacts, as evidenced by odors and/or sheen, were encountered in soil borings located within AOC-1 and AOC-2 including LSB-41, LSB-42, LSB-47, LSB-49, LSB-50, and LSB-53. Soil boring logs are provided in Appendix B. Sheen and LNAPL observations are provided on Figure 11.

6.2.2 Soil Sampling Methodology

A total of 32 discrete soil samples (including two blind duplicate samples) were collected for laboratory analysis. All samples were collected from the historic fill layer with the exception of the sample from 12 to 14 feet at LSB-42, collected at the fill/native interface at 13 feet bgs.

Samples for the Site-wide assessment were collected from nine borings (LSB-36 through LSB-44) from a two-foot interval ground surface (or immediately below surficial concrete/brick) and 12 to 14 feet bgs corresponding to the two-foot interval below the proposed development depth. Soil samples for the characterization of site-wide conditions were submitted for laboratory analysis of VOCs, SVOCs, PCBs, herbicides, pesticides, Target Analyte List (TAL) Metals, hexavalent chromium, per- and polyfluoroalkyl substances (PFAS), and 1,4-dioxane.

In order to delineate the NAPL impacts detected during the 2019 Phase II EI, twelve soil borings (LSB-40 through LSB-42, LSB-45 through LSB-50, and LSB-52 through LSB-54) were advanced in the central-eastern portion of the Site. Soil samples were collected from the most impacted two-foot interval based on visual observation of NAPL or from the depth interval corresponding to nearby NAPL impacts at depths ranging from 6 to 11.5 feet bgs. Due to evidence of petroleum impacts including elevated

PID readings, odor, sheen and/or NAPL, additional samples were collected from LSB-41 from 7.5 to 9.5 feet bgs, and LSB-42 from 7.5 to 9.5 feet bgs. Soil samples collected for NAPL delineation were submitted for laboratory analysis of VOCs, SVOCs, and PCBs.

Samples submitted for VOC analysis were collected from a discrete six-inch interval directly from the acetate liner via laboratory-supplied Terra Core soil samplers. PFAS samples were also collected directly from the acetate liner using dedicated nitrile gloves to limit the potential for cross contamination and placed in appropriate laboratory-supplied containers. The remaining two-foot sample interval volume was homogenized and placed in appropriate laboratory-supplied containers for all additional analyses. The sample containers were labeled, placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of 4±2°C). The sample coolers were picked up and delivered via courier under standard chain-of-custody protocol to by Alpha Analytical, Inc. (Alpha), a NYSDOH ELAP-certified analytical laboratory (NYSDOH ELAP certification number 11148 [Westboro Laboratory] and 11627 [Mansfield Laboratory]). In addition, QA/QC samples including two duplicate samples, two matrix spike/matrix spike duplicate (MS/MSD) samples, two field blanks, and four trip blanks were collected. A sample summary is provided as Table 1.

6.3 Groundwater Investigation

A Langan field engineer documented the installation of permanent groundwater monitoring wells LMW-6 through LMW-9 by AARCO between 27 August and 1 September 2020. Monitoring well locations are provided on Figure 5, and construction logs are included in Appendix B.

6.3.1 Monitoring Well Installation and Development Methodology

Monitoring wells LMW-6 through LMW-9 were installed via direct-push drilling to between 13 and 15 feet bgs. All wells were constructed with 10 feet of 2-inch diameter 0.020-inch slot schedule 40 PVC well screen, and the remainder of the well was constructed of 2-inch diameter schedule 40 PVC riser. The well annulus around the screen of both wells was backfilled with No. 2 sand to a depth corresponding to approximately 2-feet above the screened interval. A minimum 2-foot thick hydrated bentonite seal was installed above the sand pack at all well locations with the exception of LMW-7 (0.5 feet) and LMW-9 (0.5 feet) due to the proximity of the 2-foot sand pack to the ground surface. At locations where the seal was not in contact with ground surface, the remaining annulus was backfilled with non-impacted soil cuttings and/or clean sand. The monitoring wells were finished with flush-mount metal protective casings and concrete.

Following well construction completion, each newly installed well on Site was developed using surge pumping techniques across the well screen to agitate and remove fine particles. The whale pump was surged across the submerged well screen in 2- to 3-foot increments for approximately 2 minutes per increment. After surging, the well was purged until the water became clear. No impacts (odor, sheen, and/or product) were observed in the newly installed wells. One-inch wells previously installed during the 2019 Phase II EI were developed using a check valve and surging method across the screened interval to purge greater than three well volumes or until water became clear. Product was observed in LMW-2 and LMW-5 prior to development; as such, these wells were not developed, purged, or sampled. Purged groundwater from development activities was containerized in 55-gallon UN/DOT approved drums.

All groundwater monitoring wells were surveyed by a licensed surveyor on 11 September 2020. Due to a vehicle that could not be moved at the time of the survey, the elevation of PVC casing at LMW-2 could not be surveyed. Synoptic groundwater levels were measured on 2 September 2020 and 26 February 2021 and all groundwater monitoring wells were gauged with an oil/water interface probe prior to sample collection at each well on 10 and 11 September 2020 and on 26 February 2021. Groundwater was encountered at depths corresponding to between el 4.82 to 6.4 NAVD88 during the September 2020 sampling event and between el 5.3 to 6.82 NAVD88 during the February 2021 sampling event. The gradient at the Site is generally flat, and groundwater flow appears to be to the southeast toward the Harlem River. A potentiometric surface map generated from measurements taken during the September 2020 sampling event is provided as Figure 3.

Groundwater monitoring well locations are shown on Figure 3. Well construction details are provided in Appendix B.

6.3.2 Groundwater Sampling Methodology

Groundwater samples were collected on 10 September 2020 and 11 September 2020, greater than one week following the well development activities completed between 27 August 2020 and 2 September 2020. Monitoring wells were sampled for the purpose of site-wide characterization, AOC-investigation, former site feature investigation, and/or delineation of previously collected samples as described below and in Table 1:

Groundwater Monitoring Well(s)	Investigation Rationale
LMW-1	Site-wide characterization, AOC-1 investigation, AOC-2 investigation, and AOC-3 investigation
LMW-3, LMW-4, LMW-8 and LMW-9	Site-wide characterization and AOC-3 investigation
LMW-6 and LMW-7	Side-Wide Characterization, NAPL Delineation, AOC-1 Investigation, AOC-2 Investigation, and AOC-3 Investigation
LMW-2 and LMW-5*	AOC-1 investigation and NAPL delineation

*LMW-2 and LMW-5 were not sampled due to the presence of product (NAPL). Product samples (fingerprint analysis, viscosity, density) were collected.

Following the review of the analytical results, a second round of groundwater sample collection was completed on 26 February 2021 to further investigate AOC-3 and to evaluate contaminants in soil as a potential source of groundwater impacts. Samples were collected from LMW-1, LMW-3, LMW-4, LMW-6, LMW-7, LMW-8, and LMW-9; LMW-2 and LMW-5 were not sampled due to the presence of free phase product (NAPL).

Samples were collected in accordance with the procedures in the USEPA's low-flow groundwater sampling procedure ("Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", EQASOP-GW 001, 19 January 2010) to allow for collection of a representative sample. Monitoring wells were purged and physical/chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, and turbidity) were allowed to stabilize to ranges specified in the USEPA guidance before sampling, or until one hour of parameter readings were obtained if stabilization did not occur. Monitoring wells were purged and sampled using a peristaltic pump with dedicated high density polyethylene tubing and VOC samples were collected using a dedicated Teflon bailer. PFAS samples were collected using dedicated nitrile gloves to limit cross contamination. No notable field observations of impacts were identified during groundwater sampling procedures. Purge water was placed in 55-gallon, United Nations/ Department of Transportation (UN/DOT)-approved drums. Low flow groundwater sampling parameter sheets are provided in Appendix C.

Sixteen groundwater samples were collected into laboratory-supplied glassware, packed with ice to maintain a temperature of ±4°C, and transported via courier service to Alpha under chain-of-custody protocol. QA/QC samples including three duplicate samples, two MS/MSD samples, two field blanks, and two trip blanks were collected. Groundwater samples collected on 10 and 11 September 2020 for site-wide characterization and AOC investigation were analyzed for VOCs, SVOCs, PCBs, herbicides, pesticides, total and dissolved TAL metals, hexavalent chromium, PFAS, and 1,4-dioxane; samples collected on 26 February 2021 to further investigation AOC-3 and to evaluate if PAH impacts in soil are a source of groundwater impacts were analyzed for total and dissolved PAHs.

LMW-2 and LMW-5 were not sampled during either sampling event for groundwater analysis due to the presence of LNAPL. Product samples were collected in September 2020 from these locations using a dedicated Teflon bailer. Two product samples were collected into laboratory-supplied glassware, packed with ice to maintain a temperature of ±4°C, and transported via courier service to Alpha under chain-of-custody protocol. Product samples collected were analyzed for fingerprint analysis, density, and viscosity. Boiling point analysis was not performed due to high viscosity of product which could result in laboratory instrumentation failure.

6.4 Soil Vapor Investigation

Fourteen soil vapor sampling points (LSV-5 through LSV-18) were installed in the interval corresponding to the capillary fringe zone located one to two feet above observed moisture or groundwater interface. One duplicate soil vapor and two ambient air samples were collected for QA/QC purposes. Sampling was conducted in general accordance with the NYSDOH October 2006 Final Guidance for Evaluating Soil Vapor Intrusion in New York.

6.4.1 Soil Vapor Implant Installation and Sampling Procedures

Temporary soil vapor sampling points LSV-5 through LSV-18 were installed between 27 August 2020 and 2 September 2020 by AARCO and sampled on 14 and 15 September 2020 by Langan. Soil vapor points were installed in the capillary fringe zone located one to two feet above observed moisture or the groundwater interface corresponding to a depth between 3 to 8 feet bgs. Each of the soil vapor points was installed via direct push drilling using Teflon-lined polyethylene tubing connected to a dedicated expendable six-inch stainless steel screen. No. 2 sand was used to backfill up to approximately one-foot above the screened interval followed by a hydrated granular bentonite clay seal to the ground surface.

Soil Vapor Sampling Point(s)	Investigation Rationale
LSV-5 through LSV-9	Site-wide characterization and AOC-3 investigation
LSV-10	Site-wide characterization, AOC-1 investigation, and AOC-3 investigation
LSV-11 through LSV-13	Site-wide characterization, AOC-1 investigation, AOC-2 investigation, and AOC-3 investigation
LSV-14 through LSB-18	Site-wide characterization, investigation of adjacent property impacts, and AOC-3 investigation

Prior to sampling, each soil vapor sampling point was tightness tested using the helium tracer gas method and purged at a flow rate of <200-ml per minute. No evidence of helium breakthrough (i.e., helium concentrations above 5%) was observed in any of the sample locations before sample collection. PID readings for VOCs collected from the purged soil vapor were measured at concentrations ranging from 1.4 ppm (LSV-9) to 14.29 ppm (LSV-8) during field screening of each location. Soil vapor sampling locations are shown on Figure 5 and soil vapor sampling field logs are provided in Appendix D.

Soil vapor samples were collected in laboratory-cleaned and certified evacuated 6-L stainless steel summa canisters with regulators supplied by Alpha and were laboratory analyzed for VOCs via USEPA TO-15 Method. The regulators were set to collect each sample over a 2-hour sampling period (a flow-rate of <200-ml per minute) as per USEPA/ITRC soil vapor sampling guidance. Each soil vapor sample was numbered and recorded in a field log book. Samples were transferred to the laboratory immediately after field sampling was completed, and stored at a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis. Ambient atmospheric pressure ranged from 30.05 to 30.34 in Hg during the sampling timeframe.

6.4.2 Ambient Air Sampling Procedures

Concurrent with soil vapor sampling, two ambient air samples were collected to evaluate external influences on soil vapor quality for quality assurance purposes.

The ambient air samples were collected in laboratory-cleaned and certified evacuated 6-L stainless steel summa canisters with regulators supplied by Alpha and were laboratory analyzed for VOCs via USEPA TO-15 Method. The regulators were set to collect the sample over an 8-hour sampling period (a flow-rate of <200-ml per minute). The samples were numbered and recorded in a field log book and subsequently transferred to the laboratory immediately after field sampling was completed, and stored at a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis.

6.5 Quality Assurance Samples and Data Validation

All soil, groundwater, and soil vapor sampling devices were properly decontaminated according to NYSDEC and ASTM (ASTM D-5088-90) guidelines prior to each sampling location. For soil sampling, this included the use of a dedicated acetate liner within a stainless steel macrocore sampling device. Soil samples were then placed in glassware supplied by the laboratory. For groundwater, dedicated high density polyethylene tubing was used. Groundwater samples were collected directly into glassware supplied by the laboratory. For soil vapor, dedicated expendable six-inch stainless steel screens and tubing were used.

Each sample was numbered and recorded in a field log book. Soil and groundwater samples were transferred to the laboratory immediately after field sampling was completed and were stored at a maximum of 4° Celsius. Soil vapor samples were transferred to the laboratory immediately after field sampling was completed, and were stored at a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession and analysis.

Quality assurance (trip blanks) and quality control samples (field blank samples, duplicate samples, matrix spike/matrix spike duplicate [MS/MSD] samples, and ambient air samples) were incorporated into the sampling events and consisted of four field blanks (two for soil and two for groundwater), six duplicate samples (two for soil, three for groundwater, and one for soil vapor), 7 trip blanks (five for soil and two for groundwater), four MS/MSD samples (two for soil and two for groundwater), and two ambient air samples for soil vapor.

One soil duplicate sample was collected from the LSB-44 location from 12 to 14 feet bgs for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, mercury, PFAS, and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LSB-44_12.0-14.0 sample with the exception of calcium, copper, fluroanthene, lead, mercury, phenathrene, pyrene, and zinc which were compared to precision criteria and subsequently qualified. One soil duplicate sample was collected from the LSB-39 location from 1 to 3 feet bgs for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, mercury, PFAS, and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LSB-39_1.0-3.0 with the exception of 4,4'-DDD, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, total calcium, total chromium, trivalent chromium, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, total mercury, total nickel, perfluorodecanoic acid, pyrene, total vanadium, and total zinc which were compared to precision criteria and subsequently qualified.

Two soil sampling field blank was also collected and analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, total TAL metals, hexavalent chromium, mercury, PFAS, and 1,4-dioxane. The SVOCS naphthalene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, benzo(ghi)perylene, phenanthrene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, 2-methylnapthalene the metal aluminum, and the PFAS compound perflurohexanoic acid (PFHxA) were detected. Four trip blanks were collected and analyzed for VOCs; no VOCs were detected in any of the four trip blank samples collected. Data usability is discussed in Section 6.6.4.

During the September 2020 sampling event, one groundwater duplicate sample was collected from the LMW-1 location for VOCs, SVOCs, PCBs, pesticides, herbicides, total and dissolved TAL metals, mercury, hexavalent chromium, PFAS, and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LMW-1 sample with the exception of perfluorobutanesulfonic acid, which was compared to precision criteria and subsequently qualified. During the February 2021 sampling event, one groundwater duplicate sample was collected from the LMW-9 location for total PAHs; the analytical results were consistent with those reported for the LMW-9 sample. One groundwater duplicate sample was also collected from the LMW-9 location for dissolved PAHs; the analytical results were consistent with those reported for the LMW-9 sample with the exception of benzo(a)anthracene, benzo(b)fluoranthene, and phenanthrene which were compared to precision criteria and subsequently qualified.

During the September 2020 sampling event, one field blank was also collected and analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, total and dissolved TAL metals, mercury, hexavalent chromium, PFAS, and 1,4-dioxane analysis. The dissolved metal antimony was detected. During the February 2021 sampling event, an additional field blank was collected and analyzed for total PAHs; no PAHs were detected in the sample collected. Two trip blanks were collected and analyzed for VOCs; no VOCs were detected in either of the samples. Data usability is discussed in Section 6.6.4.

A soil vapor duplicate sample was collected from sampling point LSV-13 for VOC analysis; the analytical results were consistent with those reported for the LSV-13 sample with the exception of carbon disulfide, which was compared to precision criteria and subsequently qualified. Two ambient air samples were collected for VOCs. Compounds detected in the samples include 1,2,4-trimethylbenzene, 1,3-butadiene, 2,2,4-trimethylpentane, acetone, benzene, chloromethane, cyclohexane, dichlorodifluoromethane, ethanol, ethylbenzene, isopropanol, m,p-xylene, n-heptane, n-hexane, o-xylene, toluene, and total xylenes. These compounds were also detected in corresponding soil vapor samples collected with the exception of 1,3-butadiente, ethylbenzene, m,p-xylene, o-xylene, and total xylenes for samples collected on 14 September 2020 and chloromethane for samples collected on 14 and 15 September 2020. Data usability is discussed in Section 6.6.4.

Analytical data was submitted to a Langan validator for review in accordance with USEPA and NYSDEC validation protocols. A DUSR was prepared for each delivery group following data validation. The 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 precision, accuracy, representativeness, comparability, and completeness for each analytical method. For each of the organic analytical methods, the following was assessed:

- Holding times
- Instrument tuning
- Instrument calibrations
- Blank results
- System monitoring compounds or surrogate recovery compounds (as applicable)
- Internal standard recovery results
- MS/MSD results
- Target compound identification
- Chromatogram quality
- Compound quantization and reported detection limits
- System performance

- Results verification

DUSRs are provided in Appendix F. 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:

- **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.

After data validation was complete, validated data was used to prepare the tables and figures included in this report.

6.6 Laboratory Analytical Results

Summaries of the laboratory analytical results for soil, groundwater, and soil vapor are provided in Tables 5A, 5B, 6A, 6B, and 7, respectively, and are shown on Figures 9, 10, and 8, respectively. Analytical results are discussed in detail below. The complete laboratory analytical packages are provided in Appendix E.

6.6.1 Soil Analytical Results

All soil analytical results were compared to the NYSDEC Unrestricted Use SCOs, Commercial RUSCOs, and Protection of Groundwater SCOs and are summarized in Table 5A; PFAS soil analytical results are summarized on Table 5B. All soil analytical results are summarized on Figure 9. Duplicate soil samples results are not included in the discussion as these samples are collected for quality assurance/quality control verification of the laboratory results only and are discussed in Section 6.5.

VOCs

Analytical results revealed exceedances of the NYSDEC Unrestricted Use SCOs and/or Protection of Groundwater SCOs for acetone (0.067 milligram per kilogram [mg/kg] – 0.11 mg/kg). No exceedances of the Commercial RUSCOs were identified for VOCs.

SVOCs

Analytical results revealed exceedances of the NYSDEC Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs for PAHs.

Compounds detected in exceedance of the Unrestricted Use SCOs and/or the Protection of Groundwater SCOs include 3 and 4 methylphenol (0.46 mg/kg – 3.6 mg/kg), acenaphthene (100 mg/kg), anthracene (220 mg/kg), benzo(a)anthracene (1.1 mg/kg – 200 mg/kg), benzo(a)pyrene (1.2 mg/kg – 170 mg/kg), benzo(b)fluoranthene (1.2 mg/kg – 180 mg/kg), benzo(k)fluoranthene (0.92 mg/kg – 64 mg/kg), chrysene (1.2 mg/kg – 170 mg/kg), dibenzo(a,h)anthracene (0.34 mg/kg – 22 mg/kg), dibenzofuran (110 mg/kg), fluoranthene (570 mg/kg), fluorene (140 mg/kg), indeno(1,2,3-c,d)pyrene (0.53 mg/kg – 86 mg/kg), naphthalene (200 mg/kg), phenanthrene (810 mg/kg), phenol (2 mg/kg), and pyrene (500 mg/kg). Compounds detected at concentrations also exceeding the Commercial RUSCOs include benzo(a)anthracene (6.2 mg/kg – 200 mg/kg), benzo(a)pyrene (1.2 mg/kg – 170 mg/kg), benzo(b)fluoranthene (6.7 mg/kg – 180 mg/kg), benzo(b)fluoranthene (64 mg/kg), chrysene (170 mg/kg), dibenzo(a,h)anthracene (0.92 mg/kg – 22 mg/kg), fluoranthene (570 mg/kg), indeno(1,2,3-c,d)pyrene (12 mg/kg – 86 mg/kg), and phenanthrene (810 mg/kg). The sample collected from LSB-37, located in the northwestern portion of the Site, from 12 to 14 feet bgs exhibited the highest concentrations of PAHs exceeding the NYSDEC SCOs.

PCBs

Analytical results revealed exceedances of the NYSDEC Unrestricted Use SCOs for total PCBs in LSB-38 located in the central portion of the

Site from 2 to 4 feet bgs (0.112 mg/kg) and in LSB-53 located in the southeastern portion of the site from 9.5 to 11.5 feet bgs (0.221 mg/kg). No exceedances of the NYSDEC Commercial RUSCOs or Protection of Groundwater SCOs were identified for PCBs.

Pesticides

Analytical results revealed exceedances of the NYSDEC Unrestricted Use SCOs for pesticides including 4,4'-DDD (0.00692 mg/kg – 0.00971 mg/kg), 4,4'-DDE (0.00989 mg/kg - 0.0118 mg/kg), and 4,4'-DDT (0.00692mg/kg – 0.0372 mg/kg) were identified in exceedances on the Unrestricted Use SCOs. The sample collected from LSB-36, located in the northwestern portion of the Site, from 1 to 3 feet bgs exhibited the highest concentrations of pesticides. No exceedances of the NYSDEC Commercial RUSCOs or Protection of Groundwater SCOs were identified for pesticides.

Herbicides

Analytical results revealed no exceedances of the NYSDEC SCOs for herbicides.

Inorganics

Analytical results revealed exceedances of the NYSDEC Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs for metals.

Compounds detected in exceedance of the Unrestricted Use SCOs and/or the Protection of Groundwater SCOs include arsenic (15.5 mg/kg – 51 mg/kg), barium (586 mg/kg), cadmium (4.34 mg/kg – 21 mg/kg), hexavalent chromium (2.52 mg/kg), trivalent chromium (120 mg/kg), copper (62.8 mg/kg – 3,220 mg/kg), lead (63.1 mg/kg – 9,450 mg/kg), mercury (0.181 mg/kg – 2.44 mg/kg), nickel (31 mg/kg – 252 mg/kg), selenium (25.2 mg/kg), silver (10.2 mg/kg), and zinc (137 mg/kg - 5,310 mg/kg). Compounds detected at concentrations also exceeding the Commercial RUSCOs include arsenic (23.7 mg/kg – 51 mg/kg), barium (586 mg/kg), cadmium (21 mg/kg) copper (323 mg/kg – 3,220 mg/kg), and lead (1,230 mg/kg – 9,450 mg/kg).

The sample collected from LSB-39, located in the central portion of the Site, from 12 to 14 feet bgs exhibited the highest concentrations of metals exceeding the NYSDEC SCOs.

Emerging Contaminants (PFAS: 21-Compound List)

Soil sample analytical results are compared to the Unrestricted Use, Protection of Groundwater, and Commercial SCOs identified in the NYSDEC Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) for dated October 2020. Analytical results are summarized in Table 5B and on Figure 9.

Perfluorooctanesulfonic acid (PFOS) was detected above the Unrestricted Use SCO (1.02 µg/kg – 2.02 µg/kg) from 1 to 5 feet bgs. Perfluorooctanoic Acid (PFOA) was detected above the Unrestricted Use SCO (0.784 µg/kg) and above the Unrestricted Use and Protection of Groundwater SCOs (1.58 µg/kg) from 1 to 3.5 feet bgs. No PFAS compounds were detected above the Commercial RUSCOs. The highest concentration of PFAS detected was 10.9 ppb in LSB-39, located in the central portion of the Site, from 1 to 3 feet bgs.

Conclusions

Impacts indicative of contaminated historic fill are present throughout the Site footprint. Exceedances of the analytes associated with contaminated historic fill, including PAHs, pesticides, and metals, were detected within the historic fill layer. The highest concentrations of PAHs were detected in the western portion of the Site and the highest concentrations of metals were detected in the western and central portions of the Site. Elevated concentrations of PCBs were also detected in one sample collected from LSB-53 from 9.5 to 11.5-feet bgs where elevated PID readings and petroleum-like impacts including sheen, odor, and NAPL were identified. Concentrations of PFOS and PFOA were detected above the Unrestricted Use SCOs in the central and eastern portions of the Site, although not above the Commercial RUSCOs.

Elevated concentrations of PAHs, pesticides, metals, and PCBs above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Commercial RUSCOs are attributed to the presence of urban fill of unknown origin. The presence of PFOS and PFOA in shallow fill material in the eastern portion of the Site may be attributable to fill of unknown origin or may be attributable to releases from the historical laundry facility.

6.6.2 Groundwater Analytical Results

All groundwater analytical results were compared to the NYSDEC SGVs and are summarized in Table 6A; PFAS analytical results are summarized in Table 6B. All groundwater analytical results are presented on Figure 10. Duplicate groundwater samples results are not included in the discussion as these results are discussed in detail in Section 6.5.

VOCs

Analytical results revealed exceedances of the NYSDEC SGVs for the VOC tert-butyl methyl ether (MTBE) (12 micrograms per liter [µg/L] - 18 µg/L) in LMW-3 and LMW-9 located in the central and west-central portions of the Site, respectively. No other VOCs were detected above the SGVs.

SVOCs

Analytical results for samples collected in September 2020 revealed exceedances of the NYSDEC SGVs for the PAHs benzo(a)anthracene (0.09 µg/L - 2.2 µg/L), benzo(a)pyrene (0.09 µg/L – 2 µg/L), benzo(b)fluoranthene (0.1 µg/L – 2.2 µg/L), benzo(k)fluoranthene (0.03 µg/L – 0.77 µg/L), chrysene (0.08 µg/L – 2.1 µg/L), and indeno(1,2,3-c,d)pyrene (0.04 µg/L – 1.2 µg/L) in three of seven groundwater samples collected for SVOC analysis during the investigation. The highest concentrations of SVOCs exceeding the SGVs identified during the investigation were observed at LMW-8 located in the western portion of the Site.

Analytical results for samples collected in February 2021 revealed exceedances of the NYSDEC SGVs for PAHs compounds including total benzo(a)anthracene (0.07 µg/L), total benzo(a)pyrene (0.05 µg/L), total benzo(b)fluoranthene (0.05 µg/L), and total chysene (0.06 µg/L) at LMW-8. Dissolved concentrations of these compounds were not detected at this location. Dissolved benzo(a)anthracene (0.02 µg/L) and dissolved benzo(b)fluoranthene (0.02 µg/L) were detected in exceedance of the SGVs at LMW-9, although these compounds were not detected at this location for total PAH analysis.

PCBs

Analytical results revealed no exceedances of the NYSDEC SGVs.

Pesticides

Analytical results revealed no exceedances of the NYSDEC SGVs.

Herbicides

Analytical results revealed no exceedances of the NYSDEC SGVs.

Inorganics

Analytical results revealed exceedances of the NYSDEC SGVs for metals in all groundwater samples collected during the investigation. Exceedances include total antimony (4.2 µg/L), dissolved antimony (6.38 µg/L), total iron (1,880 µg/L – 12,600 µg/L), dissolved iron (896 µg/L – 2,320 µg/L), total lead (117.6 µg/L), total magnesium (96,100 µg/L – 118,000 µg/L), dissolved magnesium (104,000 µg/L – 117,000 µg/L), total manganese (425.7 µg/L – 669 µg/L), dissolved manganese (422.1 µg/L – 671 µg/L), total mercury (0.77 µg/L – 2.63 µg/L), total sodium (36,800 µg/L – 139,000 µg/L), and dissolved sodium (37,400 µg/L – 182,000 µg/L).

Emerging Contaminants (1,4-dioxane and PFAS: 21-Compound List)

All seven groundwater samples were analyzed for PFAS and 1,4-dioxane. Analytical results for 1,4-dioxane were compared to NYSDEC Volume A (Title 10) Subpart 5-1.51 Public Water Systems Maximum Contaminant Levels (MCLs) dated August 2020. PFAS results were compared to screening values provided in the NYSDEC Part 375 Remedial Programs Guidelines for Sampling and Analysis of PFAS (October 2020). Analytical results are summarized in Table 6B and on Figure 10.

1,4-dioxane was not detected above the MCL in any samples collected. PFAS compounds were detected in all seven groundwater samples collected; however, only PFOS and PFOA were detected above the applicable screening level of 10 ng/L.

PFOS (30.9 ng/L – 62.8 ng/L) was detected above the guidance value of 10 ng/L in three groundwater samples and PFOA (21.2 ng/L – 43.4 ng/L) was detected above the guidance value of 10 ng/L in four groundwater samples collected. The highest concentrations of PFOS and PFOA were detected in LMW-7 and LMW-8, respectively.

LNAPL

Two LNAPL samples were collected from LMW-2 (Product-3) and LMW-5 (Product-4) and submitted for petroleum identification (fingerprint) analysis. LMW-2 and LMW-5 are located in the eastern portion of the site, which was historically approved for automotive repair and fuel storage, and in the vicinity of the boiler room associated with the former steam laundry facility. The product in both samples was determined to be similar to Fuel Oil No. 6. The samples were analyzed for total petroleum hydrocarbons which revealed concentrations between 495,000 mg/kg and 516,000 mg/kg. The samples were also analyzed for density and viscosity. Density was reported to be between 0.9952 and 0.9979 grams per milliliter (g/mL). Viscosity ranged from 485 to 516 Seconds Saybolt Furol (SSF). Boiling point analysis was not performed due to thickness of product.

Conclusions

The petroleum-related VOC MTBE were detected in exceedance of the NYSDEC SGVs in two wells located in the western and central portion of the Site. MTBE in groundwater may be attributed to historical Site operation for automotive repair and/or petroleum storage or an unidentified offsite source. PAHs and metals (antimony, lead, mercury) commonly associated with historic fill were identified in groundwater in exceedance of the SGVs primarily in the western portion of the Site. Based on the results of total PAHs and dissolved PAHs collected during the February 2021 sampling event, elevated concentrations of PAHs and metals in groundwater are attributed to sediment entrainment of historic fill of unknown origin in the samples and are not indicative of any discrete releases to the subsurface; PAHs in soil are not considered to be an ongoing source of groundwater contamination. Other metals (total and/or dissolved iron, manganese, magnesium and sodium) detected in exceedance of NYSDEC SGVs were identified throughout the Site footprint and are likely attributable to naturally occurring background concentrations. LNAPL was identified in LMW-2 and LMW-5 in the eastern portion of the Site; fingerprint analysis of the product determined that it was similar to No. 6 Fuel Oil. The presence of NAPL at the Site is attributable to historical Site operations including the former boiler room of the historical laundry facility and/or former automotive repair. PFOS and/or PFAS was detected above the guidance screening level of 10 ng/L in six of the seven groundwater samples collected throughout the Site footprint. The presence of PFOS and PFOA in groundwater may be attributable to releases from the historical laundry facility.

6.6.3 Soil Vapor Analytical Results

Soil vapor analytical results were compared to NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion Matrices A through C dated October 2006 and revised in May 2017. These results are summarized in Table 7 and are shown on Figure 18. Duplicate soil vapor samples results are not included in the discussion as these results are discussed in detail in Section 6.5.

The soil vapor results identified detections of petroleum-related VOCs including BTEX compounds in 5 of 14 soil vapor sampling locations; cumulative BTEX concentrations ranged from 0.765 microgram per cubic meter (µg/m^3) at LSV-6 to 18.985 µg/m^3 at LSV-10. Additional petroleum-related VOCs including 1,2,4-trimethylbenzene (1 µg/m^3 – 3.53 µg/m^3), 1,3,5-trimethylbenzene (1.12 µg/m^3), and MTBE (0.937 µg/m^3 – 1.69 µg/m^3) were also detected. The highest concentrations of petroleum related compounds were identified in LSV-10 located in the central-eastern portion of the Site within the area of petroleum impacts from the historical former boiler room. No exceedances of the NYSDOH Soil Vapor Intrusion matrices for chlorinated VOCs were identified during this investigation.

Conclusions

The soil vapor evaluation identified BTEX and other petroleum-related compounds in LSV-6, LSV-7, LSV-9, LSV-10, LSV-12, and LSV-13. These petroleum related VOCs were not identified above applicable SCOs or SGVs in soil or groundwater samples collected during this investigation with the exception of MTBE in groundwater. The highest concentrations of petroleum related compounds in soil vapor were identified in LSV-10 located in the central-eastern portion of the Site. The presence of petroleum-related VOCs in soil vapor may be attributed to historical site operations including automotive repair and fuel storage or to an unknown offsite source. No exceedances of the NYSDOH Soil Vapor Intrusion matrices were identified during this investigation.

6.6.4 Data Usability

The DUSRs were prepared in accordance with DER-10 and reviewed by Langan's in-house validator before issuance. The DUSRs presented 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 deficiencies for each analytical method. DUSRs for the RI are provided in Appendix F.

All data are considered usable, as qualified. Some data qualifiers were appended to the reported results, which have been included in the respective data summary tables (Tables 5A through 7). Copies of the DUSRs are included in Appendix F.

6.7 Evaluation of Areas of Concern

This section discusses the results of the RI with respect to the AOCs described in detail in Section 5.0.

6.7.1 AOC-1: Petroleum Impacts from Historical Site Operations

Historical records indicate that historical Site operations may have included automotive repair and gasoline. Additionally, historical records identified that a steam laundry building with a large boiler room operated on the easternmost portion of the site and that fuel oil use was historically approved for the entire site.

As discussed in Section 5.0, the 2019 Phase II EI results for this AOC identified petroleum impacts including elevated PID readings, odors, and observations of LNAPL Sheen and LNAPL observations are provided on Figure 11. Laboratory analysis of the LNAPL determined the sample to be a combination of material similar to Diesel Fuel/Fuel Oil #2 and material which is similar to a hydraulic, lubricating, motor, or waste oil type product. Laboratory analytical results from soils samples also identified PAHs above the NYSDEC SCOs indicative of petroleum impacts and the presence of historic fill. PAHs detected in soil were also detected in groundwater above the NYSDEC SGVs. Based on the observations of LNAPL during the investigation, NYSDEC was notified of a release and Spill No. 1902392 was assigned on 6 June 2019. Historical soil vapor results from within this area identified elevated concentrations of petroleum-related VOCs.

Soil

In order to further characterize the petroleum impacts identified in the 2019 Phase II EI and to delineate the NAPL observations, fourteen soil borings (LSB-40 through LSB-50 and LSB-52 through LSB-54) were advanced at the Site. Ten discrete soil samples were collected from a two-foot interval immediately below ground surface or immediately below encountered concrete/brick and from 12 to 14 feet bgs corresponding to the two-foot interval below the proposed development depth from LSB-40 to LSB-44 Twelve samples were also collected from the most impacted two-foot interval or the interval delineating subsurface impacts at depths ranging from 6 to 11.5 feet bgs in all soil borings within the AOC. All samples were collected from the historic fill layer with the exception of the sample from 12 to 14 feet at LSB-42, collected at the fill/native interface at 13 feet bgs. A summary of the soil analytical results for AOC-1 is summarized as follows:

- Elevated PID readings and petroleum-like impacts, as evidenced by odors, NAPL, and/or sheen, were observed in soil between 7.5 and 11 feet bgs in LSB-41, LSB-42, LSB-47, LSB-49, LSB-50, LSB-53, and the soil boring drilled for the installation of monitoring well LMW-7.
- The VOC acetone was detected in exceedance of the Unrestricted Use SCO and Protection of Groundwater SCO in LSB-47 from 8.5 to 10.5 feet bgs and LSB-50 from 9.5 to 11.5 feet bgs. Acetone is a common laboratory artifact and is likely not associated with historical site uses. No other VOCs were detected above the Unrestricted Use SCOs.
- Eight SVOCs (3 and 4 methylphenol, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) were detected above the Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs in 11 of 22

samples collected at depths ranging from 1.5 to 14 feet bgs in the historic fill layer in AOC-1.

- The metals arsenic, copper, and lead were detected above the Commercial RUSCOs in the sample collected from LSB-40 from 1 to 3 feet bgs and cadmium was detected above the Commercial RUSCO in the sample collected from LSB-41 from 12 to 14 feet bgs. No other metals were detected above the Commercial RUSCOs in this AOC. Six metals, including hexavalent chromium, trivalent chromium, mercury, nickel, selenium, and zinc were detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs.
- Two pesticides, including 4,4'-DDE and 4,4'-DDT, were detected above the Unrestricted Use SCOs in the sample collected from LSB-42 from 1.5 to 3.5 feet bgs and the sample collected from LSB-43 from 2.5 to 4.5 feet bgs. No other pesticides were detected above the Unrestricted Use SCOs, Commercial RUSCOs, or Protection of Groundwater SCOs in this AOC.
- Total PCBs were detected above Unrestricted Use SCO in one sample collected from LSB-53 from 9.5 to 11.5 feet bgs. No other PCBs were detected above the Unrestricted Use SCOs, Commercial RUSCOs, or Protection of Groundwater SCOs in this AOC.
- Herbicides were not detected above the Unrestricted Use SCOs, Protection of Groundwater SCOs, or Commercial RUSCOs in this AOC.
- PFOS was detected above the Unrestricted Use SCO in LSB-43 and LSB-44 from 2.5 to 5 feet bgs. PFOA was detected above the Unrestricted Use SCO in LSB-42 from 1.5 to 3.5 feet bgs. No PFAS compounds were detected above the Commercial RUSCOs or Protection of Groundwater SCOs in this AOC.
- Evidence of petroleum impacts was identified in neither LSB-45 nor LSB-46 to the west of AOC-1, nor in LSB-48 and LSB-52 to the east of AOC-1; therefore, the NAPL observations are horizontally delineated by these borings.

Groundwater

In order to further characterize the petroleum impacts and to delineate the NAPL observations, three groundwater samples were collected from three monitoring wells (LMW-1, LMW-6, and LMW-7). NAPL was detected in two monitoring wells (LMW-2 and LMW-5) which were not sampled; however, product samples were collected from these wells. Monitoring wells LMW-1, LMW-2, and LMW-5 were installed during the 2019 Phase II EI and LMW-6 and LMW-7 were installed during the 2020 RI. LMW-1, LMW-2, and LMW-5 were installed in the area of the historical boiler room of the former laundry facility. LMW-6 was installed adjacent to the east of this area and LMW-7 was installed in the downgradient portion of the site. A summary of the groundwater analytical results for AOC-1 is summarized as follows:

- LNAPL was identified in LMW-2 and LMW-5
- VOCs were not identified above SGVs in the three wells sampled for this AOC.
- The SVOC indeno(1,2,3-c,d)pyrene was detected above the SGV in LMW-1. SVOCs were not detected above the SGVs in LMW-6 or LMW-7.
- Three total and two dissolved metals, including iron, manganese, and sodium were detected above the SGVs in LMW-1, LMW-6, and LMW-7.
- Pesticides, herbicides, and PCBs were not detected above the SGVs in any groundwater samples collected in AOC-1.
- PFAS compounds were detected in all groundwater samples collected within this AOC. PFOS was detected above the guidance value of 10 ng/L in all three groundwater samples collected from this AOC and PFOA was detected above the guidance value of 10 ng/L in LMW-1.
- Two fingerprint samples were collected and submitted from LNAPL present in LMW-2 and LMW-5. The product in both samples was determined to be similar to Fuel Oil No. 6. Total petroleum hydrocarbons were detected between 495,000 mg/kg and 516,000 mg/kgDensity was reported to be between 0.9952 and 0.9979 grams per milliliter (g/mL) and viscosity ranged from 485 to 516 Seconds Saybolt Furol (SSF).

Soil Vapor

Four soil vapor points (LSV-10 through LSV-12 and LSV-17) were installed in or in close proximity to AOC-1. LSV-10 and LSV-11 were installed in the footprint of the historical boiler room of the former laundry facility, LSV-12 was installed to the east of this area, and LSV-17 was installed to the southeast of this area. A summary of the soil vapor analytical results for samples collected within the vicinity AOC-1 is summarized as follows:

- NYSDOH Soil Vapor Intrusion Matrix compounds were not identified above the monitoring and/or mitigation thresholds in samples collected from this AOC
- Petroleum-related VOCs including BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and/or MTBE were detected in LSV-10 and LSV-12. The highest concentrations of petroleum related compounds were identified in LSV-10 located in the southwestern portion of the AOC.

AOC-1 Conclusions

Field observations of petroleum impacts including elevated PID readings, odors, sheen, and/or NAPL were observed in fill in soil borings located within AOC-1 and are likely associated with historical site use as a potential automotive repair facility with fuel storage and the former boiler room associated with the historical steam laundry facility. The horizontal extents of petroleum impacts were defined to the east and to the west during this investigation; the extent of petroleum impacts to the north and south are defined by the Site boundary. Vertically, petroleum impacts were identified between 7.5 and 11 feet bgs in AOC-1. The VOC acetone, a common laboratory artifact, was detected in soil above regulatory criteria although is likely not associated with historical site uses. Elevated concentrations of PAHs, pesticides, metals, and PCBs above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Commercial RUSCOs are attributed to the presence of urban fill of unknown origin

Detections of metals in groundwater in AOC-1 are attributed to naturally occurring background concentrations and the detection of the PAH indeno(1,2,3-cd)pyrene in LMW-1 is likely attributed to the presence of fill material in contact with groundwater. Although NYSDOH Soil Vapor

Intrusion Matrix CVOCs were not identified above the monitoring and/or mitigation thresholds in samples collected from this AOC, petroleum-related VOCs including BTEX compounds, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and/or MTBE were detected in AOC-1.

6.7.2 AOC-2: Chlorinated VOCs from Historical Site Operations

Historical Site operations included a laundry facility and potential automotive repair. As discussed in Section 5.0, soil vapor sampling was completed during the 2019 Phase II EI and the laboratory analytical results identified that PCE was detected in all soil vapor samples collected at concentrations above the monitoring and/or mitigation threshold according to NYSDOH Soil Vapor Intrusion Matrix B. Additional investigation was completed to further evaluate CVOC impacts.

Soil

In order to further characterize CVOC impacts, eight discrete soil samples were collected from four borings (LSB-41 through LSB-44) from the two-foot interval immediately below ground surface or immediately below encountered concrete/brick and from 12 to 14 feet bgs, which corresponds to the two-foot interval below the proposed development depth. CVOCs were not detected in any of the soil samples collected. Analytical results for these samples were also collected to characterize AOC-1 and are discussed in Section 6.7.1.

Groundwater

In order to further characterize CVOC impacts, three groundwater samples were collected from three monitoring wells (LMW-1, LMW-6, and LMW-7). CVOCs were not detected in any of the groundwater samples collected. Analytical results for these samples were also collected to characterize AOC-1 and are discussed in Section 6.7.1.

Soil Vapor

In order to further characterize CVOC impacts, five soil vapor points (LSV-11 through LSV-13, LSV-17, and LSV-18) were installed to assess AOC-2. Analytical results for LSV-11, LSV-12, and LSV-17 were also collected to characterize AOC-1 as discussed in Section 6.7.1 and are excluded from discussion below. LSV-13 was installed in the northeastern portion of the AOC and LSV-18 was installed along the eastern portion of the AOC. Samples were also collected to address the 24 April 2020 NYSDEC Draft RIWP Comment Letter request for further investigation to evaluate potential exposure via soil vapor intrusion at the buildings immediately adjacent to the Site. In addition to LSV-13, LSV-17, and LSV-18, soil vapor points installed along the perimeter of the property include LSV-14 through LSV-16. A summary of soil vapor analytical results are summarized below:

- NYSDOH Soil Vapor Intrusion Matrix compounds were not identified above the monitoring and/or mitigation thresholds in samples collected from this AOC or for the adjacent site soil vapor intrusion investigation.
- Petroleum-related VOCs including 1,2,4-trimethylbenzene in LSV-13 and LSV-16 and toluene in LSV-13 were detected.

AOC-2 Conclusions

Petroleum impacts and contaminated fill material were identified in soil and are discussed in detail in Section 6.7.1. No CVOCs were detected in soil above the SCOs.

Detections of metals in groundwater re attributed to naturally occurring background concentrations and the detection of the PAH indeno(1,2,3-cd)pyrene in LMW-1 is likely attributed to the presence of fill material in contact with groundwater. No CVOCs were detected in groundwater above SGVs.

Although CVOCs were not detected in exceedance of the NYSDOH Soil Vapor Intrusion Matrix monitoring and/or mitigation threshold value during the 2020 RI, PCE was detected in exceedance of the threshold during the 2019 Phase II EI. The disparity in soil vapor concentrations of PCE between the 2019 and 2020 investigations may be the result of differences in barometric pressure between the two sampling events; barometric pressure during the sample collection timeframe during the 2019 Phase II EI ranged from 29.95 to 29.87 in Hg and barometric pressure during the sampling collection timeframe during the two days of the 2020 RI ranged from 30.05 to 30.08 in Hg and 30.32 to 30.34 in Hg. The lower barometric pressure during the 2019 Phase II EI may have resulted in the higher PCE concentrations detected in those samples. Weather records from each day of soil vapor sampling are provided in Appendix D.

PCE was not detected in exceedance of NYSDEC SCOs or SGVs in soil or groundwater samples collected during the 2019 and 2020 investigations. As such, the presence of PCE in soil vapor is attributed to an off-Site source.

6.7.3 AOC-3: Historical Filling Associated with the Harlem River and Site-Wide Assessment

The Site is located within the historical extents of the Harlem River and consists of created land; as such, it is likely that the area was subject to historical filling using material of an unknown origin to raise grades. Soil borings and monitoring wells were advanced throughout the entirety of the site to assess for the potential subsurface impacts from historical filling.

Based on the results of soil, groundwater, and soil vapor sampling completed during the 2019 Phase II EI, petroleum impacts in soil, groundwater, and soil vapor and chlorinated VOC impacts in soil vapor are present in the subsurface which may be the result of historical site uses as an automotive repair facility, gasoline station and a laundry facility. PAH and metal impacts in soil and groundwater are also likely the result of historical filling of the site using material of an unknown origin to raise grades.

The results of this investigation were also used to perform a Site-wide assessment of soil, groundwater, and soil vapor.

<u>Soil</u>

In order to further characterize site-wide conditions and impacts associated with former site use, a total of 18 discrete soil samples were collected from 9 borings for laboratory analysis. Of these, 10 samples collected from list of borings were previously discussed as part of the AOC-1 assessment in Section 6.7.1 and are excluded from discussion below.

Samples collected from outside the extents of AOC-1 and not previously discussed were collected from four borings (LSB-36 through LSB-39) from a two-foot interval immediately below ground surface or immediately below encountered concrete/brick, and from 12 to 14 feet bgs corresponding to the two-foot interval below the proposed development depth. All samples were collected from the historic fill layer.

Soil analytical results collected at the site for further characterization of AOC-3 and the Site-wide assessment and not previously discussed as part of the AOC-1 assessment in Section 6.7.1 are summarized as follows:

- Elevated PID readings were observed in the soil boring drilled for the installation of monitoring well LMW-7. No other petroleum-like impacts, including odors, NAPL and/or sheen, were encountered.
- No VOCs were detected above the Unrestricted Use SCOs.
- Seventeen SVOCs (3 and 4 methylphenol, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, phenol, and pyrene) were detected above the Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs in all samples collected with the exception of the sample collected from LSB-37 from 1 to 3 feet bgs. The highest SVOC concentrations were observed in LSB-37 from 12 to 14 feet bgs located in the northwestern portion of the site.
- The metals arsenic, barium, and lead in LSB-36 from 1 to 3 feet bgs and copper and lead in LSB-39 from 12 to 14 feet bgs were detected above the Commercial RUSCOs. No other metals were detected above the Commercial RUSCOs. The metals = mercury and/or zinc were detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in all samples for which metals were analyzed with the exception of LSB-37 from 1 to 3 feet bgs.
- Three pesticides, including 4,4’-DDD, 4,4’-DDE, and 4,4’-DDT were detected above Unrestricted Use SCOs in samples

collected from LSB-36 from 1 to 3 feet bgs and LSB-39 from 1 to 3 and 12 to 14 feet bgs. .

- Total PCBs were detected above the Unrestricted Use SCOs in LSB-38 from 2 to 4 feet bgs and LSB-53 from 9.5 to 11.5 feet bgs.
- No herbicides were detected in exceedance of the Unrestricted Use SCOs, Industrial RUSCOs, or Protection of Groundwater SCOs in any samples collected from the fill layer on the Site.
- PFOS was detected above the Unrestricted Use SCO in LSB-39 from 1 to 3 feet bgs. PFOA was detected above the Unrestricted Use and Protection of Groundwater SCO in LSB-39 from 1 to 3 feet bgs. No PFAS compounds were detected above the Commercial RUSCOs. Total PFAS concentrations ranged from 0.073 ppb in LSB-39 from 12 to 14 feet bgs to 10.9 ppb in LSB-39 from 1 to 3 feet bgs.

Groundwater

Monitoring wells LMW-1 through LMW-5, which were installed during the 2019 Phase II EI, and wells LMW-6 through LMW-9, which were installed during the 2020 RI, were sampled to characterize site-wide conditions during the September 2020 sampling event. Following the review of the analytical results, a second round of groundwater sample collection was completed in February 2021 to further investigate AOC-3 and to evaluate contaminants in soil as a potential source of groundwater impacts; samples for total and dissolved PAHs were collected from LMW-1, LMW-3, LMW-4, and LMW-6 through LMW-9. September 2020 analytical results and field observations for LMW-1, LMW-2, and LMW-5 through LMW-7 were previously discussed as part of the AOC-1 assessment in Section 6.7.1 and are excluded from discussion below. The remaining groundwater analytical results (LMW-3, LMW-4, LMW-8, and LMW-9 from September 2020 and February 2021) for AOC-3 and the Site-Wide Assessment are summarized as follows:

- The VOC MTBE was detected above the SGVs in LMW-3 and LMW-9 located in the central and west-central portions of the Site, respectively. No other VOCs were detected above the SGVs.

- The SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene) were detected above the SGVs in LMW-4 and LMW-8 during the September 2020 sampling event.
- PAHs including total benzo(a)anthracene, total benzo(a)pyrene, total benzo(b)fluoranthene, and total chrysene were detected above the SGVs in LMW-8 during the February 2021 sampling event. Dissolved benzo(a)anthracene and dissolved benzo(b)fluoranthene were detected above the SGVs in LMW-9 during the February 2021 sampling event.
- Metals including total iron, total and dissolved manganese, and total and dissolved sodium were detected above the SGVs in all four samples. Total and dissolved antimony in LMW-4, dissolved iron in LMW-3 and LMW-9, total lead in LMW-4 and LMW-8, total and dissolved magnesium in LMW-4 and LMW-8, and total mercury in LMW-4 and LMW-8 were also detected above the SGVs.
- Pesticides, herbicides, and PCBs were not detected above the SGVs in any groundwater samples collected.
- PFAS compounds were detected in all groundwater samples collected. PFOA was detected above the guidance screening value of 10 ng/L in LMW-3, LMW-4, and LMW-8.

Soil Vapor

Soil vapor points LSV-5 through LSV-18 were installed as part of the site-wide soil vapor assessment. Analytical results for samples also collected to characterize AOC-1 (LSV-10 through LSV-12 and LSV-17) and AOC-2 (LSV-11 through LSV-13 and LSV-17 through LSV-18) are addressed in Sections 6.7.1 and 6.7.2, respectively, and are excluded from discussion below. A summary of the remaining soil vapor analytical results (LSV-5 through LSV-9, LSV-14 through LSV-16) are summarized as follows:

- NYSDOH Soil Vapor Intrusion Matrix compounds were not identified above the monitoring and/or mitigation thresholds in samples collected on the Site.

- Petroleum-related VOCs including 1,2,4-trimethylbenzene in LSV-9 and LSV-16, benzene in LSV-9, and toluene and MTBE in LSV-6 were detected.

AOC-3 and Site-Wide Assessment Conclusions

Field observations of petroleum impacts including elevated PID readings, odors, sheen, and/or NAPL were observed in fill in soil borings located within AOC-1 and are likely associated with historical site use as a potential automotive repair facility with fuel storage and the former boiler room associated with the historical steam laundry facility. The VOC acetone, a common laboratory artifact, was detected in soil above regulatory criteria although it is not attributed to historical site uses. Elevated concentrations of PAHs, metals, pesticides, and PCBs in fill material are attributable to fill material of unknown origin. The presence of total PAHs and metals (lead and mercury) in groundwater are attributed to sediment entrainment of fill material of unknown origin in the sample and are not indicative of any discrete releases to the subsurface. As dissolved concentrations of lead, mercury, and PAHs were not detected in groundwater above the SGVs or were only detected in limited wells, the total concentrations are attributed to turbidity during sample collection. PAHs in soil are not considered to be an ongoing source of groundwater contamination. Other metals detected in groundwater above the SGVs (total and/or dissolved iron, manganese, magnesium and sodium) are attributed to naturally occurring background concentrations.

Petroleum-related VOCs including BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and MTVE were detected on Site. As detailed in Section 2.3.2.2, CVOCs were not detected in exceedance of the NYSDOH Soil Vapor Intrusion Matrix monitoring and/or mitigation threshold value during the 2020 RI, although PCE was detected in exceedance of the threshold during the 2019 Phase II EI (LSV-1 through LSV-4). PCE was not detected in exceedance of NYSDEC SCOs or SGVs in soil or groundwater samples collected during the 2019 and 2020 investigations. As such, the presence of PCE in soil vapor is attributed to an unknown off-Site source.

7.0 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 May 2010 NYSDEC Final DER-10 Technical Guidance for Site Investigation and Remediation. The assessment includes 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, completion of an FWRIA was not required for the Site.

7.1 Current Conditions

The Site is located in the Harlem neighborhood of Manhattan, New York and is identified as Lot 48. The Site is an approximately 37,500-square foot parcel and is bound to the north by West 155th Street and the elevated 155th Street Viaduct associated with the Macomb’s Dam Bridge followed by Holcombe Rucker Park; an asphalt-paved parking lot to the east; two single-story commercial/industrial buildings including a Toyota Automotive Repair facility and Ferguson Plumbing Supply store, two four-story mixed-use residential/commercial buildings, and two four- to six-story residential buildings to the south; and by Frederick Douglass Boulevard followed by a two-story mixed-use residential/commercial building to the west. The Site was vacated in November 2020, but was most recently used as an at-grade asphalt paved parking lot.

7.2 Proposed Conditions

The Site is proposed to be developed with a 3-story commercial self-storage building with a cellar level. The cellar and first floor will occupy approximately 31,930-square-feet and approximately 25,795-square-feet, respectively, of the approximate 37,500-square-foot property. The northwestern portion of the site will be used as a paved driveway / parking area with the proposed building constructed overhead. Excavation for the construction of the cellar slab is anticipated to be completed to el 6.5 feet NAVD88.

7.3 Summary of Environmental Conditions

Petroleum impacts as evidenced by elevated PID readings, odors, sheen, and/or NAPL were detected within the historic fill and are attributed to former Site use. SVOCs, metals, pesticides, and PCBs were detected at concentrations above the NYSDEC Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs in soil samples collected from historic fill. The compound distribution and contaminant concentrations detected are typical of fill material in New York City.

VOCs, SVOCs, and metals were detected in groundwater at concentrations above the NYSDEC SGVs. Exceedances of VOCs are attributed to historical Site use. Exceedances of SVOCs are attributable to historic fill conditions. Detections of metals are likely attributable to naturally occurring background concentrations with the exception of lead, antimony, and mercury which are attributed to historic fill conditions. Soil vapor sample analytical results revealed CVOCs at concentrations above the NYSDOH guidance levels which would trigger monitoring or mitigation if detected as part of a soil vapor intrusion evaluation; in addition, petroleum-related VOCs were detected for which there are no NYSDOH guidance values. CVOCs were not detected in exceedance of NYSDEC SCOs or SGVs in any soil or groundwater samples collected during the 2019 and 2020 investigations. As such, PCE in soil vapor is likely attributed to an unknown off-Site source.

7.4 Conceptual Site Model

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

7.4.1 Potential Sources of Contamination

Potential sources of contamination have been identified and include past uses of the Site and contaminated historic fill material. Historical on-Site use such as a steam laundry building with an associated boiler room and potential automotive repair and fuel storage are potential sources of VOCs in groundwater and soil vapor. The Site-wide presence of historic fill as a result of filling associated with the Harlem River extents which historically included into the Site and has been established as a source of SVOCs and metals in soil and groundwater, and pesticides and PCBs in soil. Detection of CVOCs, specifically PCE, in soil vapor throughout the site during the 2019 Phase II EI are likely attributed to an unknown offsite source. Detections of metals in groundwater are likely attributable to naturally occurring background concentrations.

7.4.2 Exposure Media

Impacted media include soil, groundwater, and soil vapor. Analytical data indicates that historic fill material contains SVOCs, pesticides, PCBs and metals at concentrations greater than the Unrestricted Use SCOs, Commercial RUSCOs, and/or the Protection of Groundwater SCOs. Groundwater contains VOCs, SVOCs, and metals above the SGVs. Soil vapor at the Site is impacted with petroleum-related VOCs (BTEX and other compounds) and PCE which were detected at concentrations above the NYSDOH guidance levels which would trigger monitoring or mitigation if detected as part of a soil vapor intrusion evaluation.

7.4.3 Receptor Populations

The Site is currently vacant and consists of an asphalt paved lot. The Site is enclosed in fencing and access is restricted to personnel completing site investigations and other authorized guests. During Site development and remediation, human receptors will be limited to construction and remediation workers, authorized guests, design team members visiting the Site, and the public adjacent to the Site. Under future conditions, receptors will include the new building tenants, visitors to the building, and building management/maintenance employees.

7.5 Potential Exposure Pathways – On-Site

7.5.1 Current Conditions

Human exposure to contaminated soil is currently limited to individuals with access to the Site, including project team members, personnel completing site investigations, and other authorized guests. In areas where human exposure to contaminated soil is possible, the potential exposure pathway for dermal absorption, inhalation and ingestion is controlled by limiting Site access and activities to those noted above.

Due to the depth of groundwater, and the fact that groundwater in New York City is not used as a potable water source, there is no complete exposure pathway to groundwater under current Site conditions. However, there is a potential exposure pathway through dermal absorption, inhalation, and ingestion during investigative groundwater sampling, but it is controlled through the implementation of the HASP during sampling.

Because the Site consists of asphalt cover, there are minimal current on-Site exposure pathways for soil vapor intrusion. Impacted soil vapor may migrate vertically through the subsurface and dissipate and dilute with ambient air; as such, there is no potential exposure pathway under current conditions. Any remaining potential exposure pathways through dermal absorption and inhalation is controlled through the implementation of a HASP during ground-intrusive work.

7.5.2 Construction/Remediation Conditions

Construction and remediation may result in potential exposures to Site contaminants in the absence of a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP). Construction and remedial activities will likely include excavation, off-Site disposal of impacted soil, dewatering, and construction of foundation components. In the absence of a HASP and CAMP, this scenario presents the potential for exposure of soil, groundwater, and soil vapor contaminants to construction and remediation workers via dermal absorption, ingestion, and inhalation of vapors and particulate matter. This exposure pathway will be mitigated through the implementation of the HASP, CAMP, and vapor and dust suppression techniques.

7.5.3 Proposed Future Conditions

Currently, the contemplated project includes industrial commercial self-storage building with parking. The proposed building will have a full cellar occupying approximately 85% of the Site footprint.

A soil vapor intrusion evaluation was completed. Based on the soil vapor sample analytical results, CVOCs have been detected at concentrations that require monitoring and/or mitigation according to NYSDOH Soil Vapor Intrusion Matrices A and B. Petroleum compounds were also detected in soil vapor; however, there are no SCGs currently in-place for VOCs in soil vapor. New development will incorporate a cover system across the Site and the potential pathway for soil vapor intrusion into the buildings will be minimized for occupied portions of the building by vapor mitigation measures such as a vapor barrier and sub-slab depressurization system, which may be proposed as part of the remedy.

Construction of a building slab and installation of a vapor mitigation system will prevent human exposure to impacted soil and groundwater and potential soil vapor intrusion.

There is no pathway for ingesting groundwater contaminants, as the Site and surrounding areas obtain their drinking water supply from surface water reservoirs located upstate and not from groundwater.

Based on results of the previous investigations and this RI and the proposed development plan which includes excavation to a depth between approximately 5 to 10 feet bgs (corresponding to el +6.5 feet NAVD88) across approximately 85% of the Site, it is anticipated that a Track 4 cleanup will be achieved; institutional controls and/or engineering controls will be included in the remedy to reach Track 4 cleanup and to prevent exposure to any remaining residual contamination.

7.6 Potential Exposure Pathways – Off-Site

Soil vapor may migrate off-Site vertically through the subsurface and dissipate and dilute with ambient air in instances where the Site surface is compromised or during Site construction/remediation.

The potential off-Site migration of Site soil contaminants is not expected to result in a complete exposure pathway for current, construction and remediation, or future conditions for the following reasons:

- The Site is located in an urban area and predominantly covered with continuous relatively impervious surface covering (i.e., building foundations and concrete paving).
- During Site redevelopment remediation and construction, the following protective measures will be implemented:

- A Site-specific HASP including a CAMP will be implemented to protect on-Site personnel and to monitor the perimeter of the site to mitigate off-Site migration of particulates and VOCs during construction.
- Air monitoring will be conducted for particulates (i.e., dust) and VOCs during 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.
- Vehicle tires and undercarriages will be washed as necessary prior to leaving 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.

7.7 Evaluation of Human Health Exposure

Based upon the CSM and the review of environmental data, partial on-Site exposure pathways appear to be present under current conditions, and in the absence of institutional and engineering controls, complete on-Site exposure pathways could potentially exist in construction/remediation and future conditions.

Complete exposure pathways have the following five elements: 1) a contaminant source; 2) a contaminant release and transport mechanism; 3) a point of exposure; 4) a route of exposure; and 5) a receptor population.

7.7.1 Current Conditions

Contaminant sources include contaminated historic fill with elevated levels of SVOCs, metals, pesticides, and PCBs; groundwater with elevated levels of VOCs, SVOCs, and metals; and, soil vapor with elevated levels of VOCs.

Contaminant release and transport mechanisms include contaminated soil transported as dust (dermal, ingestion, inhalation) and existing soil vapor contaminants (inhalation). Under current conditions, the likelihood of human exposure is limited, as 1) site access is restricted to project team members and authorized personnel; 2) impermeable asphalt surfaces cover the site; 3) the site is an open-air vacant lot and impacted soil vapor that migrates vertically would be diluted with ambient air; and, 4) the site is not a source of drinking water.

7.7.2 Construction/Remediation Activities

During remedial construction, points of exposure include disturbed and exposed soil during excavation and dust, contaminated groundwater that will be encountered during dewatering, and organic vapors generated during soil excavation and off-Site disposal. Routes of exposure include ingestion and dermal absorption of contaminated soil and groundwater, inhalation of organic vapors arising from contaminated soil, and inhalation of dust arising from contaminated soil. The receptor population includes construction and remediation workers and, to a lesser extent, the public adjacent to the Site.

The potential for completed exposure pathways is present since all five elements exist; however, the risk will be minimized by limiting Site access and through implementation of appropriate health and safety measures, such as monitoring the air for organic vapors and dust, using vapor and dust suppression measures, cleaning truck undercarriages before they leave the Site to prevent off-Site soil tracking, maintaining Site security, and wearing the appropriate personal protective equipment (PPE).

7.7.3 Proposed Future Conditions

Remedial construction is expected to remove on-Site contaminants located within the proposed basement footprint, as excavation will be performed as part of the site remediation to a depth between approximately 5 to 10 feet bgs (corresponding to el +6.5 feet NAVD88) across approximately 85% of the Site. After construction, residual contaminants will remain on-Site beneath the building slab and the exterior parking area. Contaminant release and transport mechanisms include penetrations through the building and parking area. If protective measures and remediation are not implemented, points of exposure include potential cracks in the proposed building foundation and the parking lot and exposure during any future soil-disturbing activities. Routes of exposure may include inhalation of vapors entering the buildings or dust during any soil-disturbing work. The receptor population includes the building tenants, visitors to the building, and building management/maintenance employees. The possible routes of exposure can be avoided or mitigated by proper installation of soil vapor mitigation measures, construction and maintenance of a composite cover system (i.e., concrete or at least one foot of clean soil), and implementation of a Site Management Plan.

7.7.4 Human Health Exposure Assessment Conclusions

1. Under current conditions, there is a marginal risk for exposure. The primary exposure pathways are for dermal contact, ingestion and inhalation of soil or soil vapor by authorized site personnel in instances where the integrity of the impermeable site cover is compromised or during site investigation. Exposure to groundwater is limited to those completing investigation activities. The exposure risks can be avoided or minimized by limiting Site access and implementing the appropriate health and safety and vapor and dust suppression measures outlined in a Site-specific HASP and CAMP during ground-intrusive activities.
2. In the absence of protective measures, there is a moderate risk of exposure during the construction and remediation activities. The primary exposure pathways are:
    a. Dermal contact, ingestion and inhalation of contaminated soil, groundwater, or soil vapor by Site visitors and construction and remediation workers.
    b. Dermal contact, ingestion and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the Site.

    These exposure pathways can be avoided or minimized by performing community air monitoring and by following the appropriate health and safety plans, implementing vapor and dust suppression techniques, and using Site security to control access.

3. A complete exposure pathway is possible for the migration of Site contaminants to off-Site human receptors during the remedial construction phase. During this phase, Site access will be limited to authorized personnel and workers and protective measures will be used during construction to prevent completion of this pathway,

including following a Site-specific HASP and implementation of a CAMP.

4. The existence of a complete exposure pathway for Site contaminants to human receptors during proposed future conditions is unlikely, as on-Site sources of contamination will be excavated and transported for off-Site disposal across approximately 85% of the Site footprint, in addition to construction of a composite cover (i.e., concrete building slab paved parking area). Regional groundwater is not used as a potable water source in this part of New York City. The potential pathway for soil vapor intrusion into the buildings will be minimized for occupied portions of the building basement by a vapor barrier.

8.0 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, historical analytical data from the 2019 Phase II EI discussed in Section 4.0, and analytical data from the 2020 RI that was discussed in Section 6.6.

8.1 Petroleum Impacted Soil and Groundwater

Petroleum impacts are present in soil and on groundwater in an approximately 9,700 SF area in the central-eastern portion of the Site within the eastern most portion of former Lot 61 and a majority of former Lot 48. Lot 48 was historically approved for automotive repair and associated fuel storage, and in the vicinity of the boiler room associated with the former steam laundry facility. The petroleum impacted area is identified as AOC-1 and as associated with NYSDEC Spill No. 1902392.

Evidence of petroleum impacts were encountered in soil at 10 of 42 soil boring locations and within one monitoring well drilled as evidenced by the presence of sheen, odor, LNAPL and elevated PID readings. During the 2019 Phase II EI and 2020 RI, monitoring wells were installed in three soil borings in which petroleum impacts were present; these wells were gauged to evaluate for the presence of NAPL during the 2020 RI which revealed the presence of LNAPL in two monitoring wells (LMW-2 and LMW-5). Product present in the wells was determined to be too viscous to obtain thickness measurements.

The horizontal extents of petroleum impacts were defined to the east (LSB-48, LSB-52, and LSB-54) and to the west (LSB-45 and LSB-46) during the RI; the extent of petroleum impacts to the north and south are defined by the Site boundary. The lack of NAPL in LSB-55 and LSB-56 confirms that these impacts do not extend beyond the eastern property boundary. Vertically, petroleum impacts were identified between 4 and 12 feet bgs in AOC-1.

Samples for fingerprint analysis were collected from the soil in which the presence of product was observed during the 2019 Phase II EI and from monitoring wells LMW-2 and LMW-5 during the 2020 RI. Laboratory analysis determined the 2019 sample to be a combination of material similar to Diesel Fuel/Fuel Oil #2 and material which is similar to a hydraulic, lubricating, motor, or waste oil type product; product in both samples collected during the 2020 RI was determined to be similar to Fuel Oil No. 6. As such, a mixture of petroleum products from historical operations including potential automotive repair and fuel storage and the former boiler room of the historical laundry facility may be present.

A total of 10 soil samples were collected for laboratory analysis from soil borings in which NAPL was observed during the 2019 Phase II EI and 2020 RI. Of these, no gasoline-related VOCs at concentrations exceeding the Unrestricted Use SCOs were identified and only five samples revealed concentrations of PAHs at concentration exceeding the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Commercial RUSCOs. Two monitoring wells were installed in soil borings where NAPL was observed. One of these wells was sampled for groundwater during the 2019 Phase II EI. Although PAHs were detected above NYSDEC SGVs, gasoline-related VOCs were not detected above NYSDEC SGVs at these locations; however, MTBE was detected in upgradient well locations. Analytical results for samples collected from within the NAPL-impacted area of the Site reveal that the presence of NAPL has not resulted in greater impacts to soil and groundwater than those identified throughout the remainder of the Site where only historic fill was encountered.

As discussed in Section 4.7, an IRM will be implemented at the Site which will include excavation and disposal of historic fill to between 3 and 5 feet bgs. Implementation of the IRM will support the execution of the future remedy through the excavation and removal of shallow hotspots containing elevated concentrations of lead and initiation of SOE installation. SOE installation is necessary for the future excavation and removal of deep hotspots impacted with elevated concentrations of metals and PAH hotspots to 15 feet bgs. SOE installation also is necessary for the future excavation and removal of petroleum impacts for the remediation of Spill No. 1902392 up to 15 feet bgs. The disturbance of petroleum-impacted soil is not proposed in the IRMWP and all petroleum impacts between 4 and 15 feet bgs as presented in Figures 2A, 2B, and 11 will remain in place to be addressed via the forthcoming Remedial Action Work Plan.

8.2 Soil Contamination – Historic Fill

During environmental and geotechnical investigations completed by Langan in 2019 and 2020, a fill layer consisting of fine to coarse sand with varying proportions of silt and gravel and miscellaneous debris, including brick, wood, asphalt, plastic, and metal extending from surface grade to between 12 and 25 feet bgs was observed. Forty-two fill samples were collected from between 1 and 14 feet bgs during the 2019 and 2020 investigations.

The VOC acetone was detected in exceedance of the Unrestricted Use SCO and Protection of Groundwater SCO. Acetone is a common laboratory artifact and is likely not associated with historical site uses. No other VOCs were detected above the Unrestricted Use SCOs, Commercial RUSCOs, or Protection of Groundwater SCOs in any fill samples collected.

SVOCs commonly associated with the presence of historic fill material 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, were detected from 1 to 14 feet bgs in 26 of 42 fill samples collected for SVOC analysis throughout the Site footprint at concentrations exceeding the Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs. SVOCs 3 and 4 methylphenol, acenaphthene, anthracene, dibenzofuran, fluoranthene, fluorene, naphthalene, phenanthrene, phenol, and pyrene were also detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in select fill samples throughout the site footprint. Fluoranthene and phenanthrene were also detected above Commercial RUSCOs at one location.

Metals including arsenic, barium, cadmium, hexavalent chromium, trivalent chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc were detected from 1 to 14 feet bgs in 28 of 30 soil samples collected for metals analysis throughout the Site footprint at concentrations exceeding Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs.

Pesticides including 4,4’-DDD, 4,4’-DDE, and 4,4’-DDT were detected from 1 to 14 feet bgs at concentrations exceeding the Unrestricted Use SCOs in 5 of 18 fill samples collected for pesticides analysis.Total PCBs were detected from 2 to 11.5 feet bgs at concentrations exceeding the Unrestricted Use SCOs in in 2 of 37 fill samples collected for PCB analysis.

PFAS compounds were detected from 1 to 14 feet bgs in 14 of the 19 soil samples collected for which it was analyzed during the 2020 RI. PFOS was detected in exceedance of the Unrestricted Use SCO and PFOA was detected in exceedance of the Unrestricted Use and Protection of Groundwater SCOs. PFAS was not analyzed for samples collected during the 2019 Phase II EI.

Elevated concentrations of PAHs, metals, pesticides, and PCBs in fill material are attributed to fill material of unknown origin. The presence of PFAS compounds in fill material may be attributable to historical Site operations as a laundry facility or to fill material of unknown origin.

8.3 Groundwater Contamination

Groundwater was encountered between 8.08 and 10.98 feet bgs at depths corresponding to el 4.82 to 6.4 NAVD88 during the RI. Four monitoring wells were sampled during the 2019 Phase II EI and seven monitoring wells were sampled during the 2020 RI; two monitoring wells (LMW-2 and LMW-5) could not be sampled during the 2019 and 2020 investigations due to the presence of LNAPL. Product fingerprint samples were collected from LMW-5 during the 2019 Phase II EI and from both LMW-2 and LMW-5 during the 2020 RI as discussed in Section 8.1.

The VOC MTBE was detected above the SGVs in LMW-3 and LMW-9 located in the western-central portion of the Site and cross-gradient of petroleum impacts in AOC-1. MTBE is a common fuel additive. As such, these detections are attributed to historical Site use as an automotive repair facility with fuel storage. No other VOCs were detected above the SGVs.

Total SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and/or indeno(1,2,3-cd)pyrene were detected at concentrations exceeding the SGVs in five of eight monitoring wells sampled for groundwater throughout the Site footprint. Dissolved SVOCs including benzo(a)anthracene and benzo(a)pyrene were detected at concentrations exceeding the SGVs in one of seven wells sampled for groundwater throughout the Site footprint. Elevated concentrations of PAHs in groundwater are attributed to sediment entrainment of fill material of unknown origin in the unfiltered samples and are not indicative of any discrete releases to the subsurface. PAHs in soil are not considered to be an ongoing source of groundwater contamination.

Metals including total iron, total and dissolved manganese, and total and dissolved sodium were detected at concentrations exceeding the SGVs in seven of eight monitoring wells samples for groundwater collection throughout the Site footprint. Total lead was detected at three monitoring well locations in exceedance of the SGVs; however, dissolved lead concentrations were detected below the SGVs. Total and dissolved magnesium, dissolved iron, and mercury were detected in exceedance of the SGVs in two monitoring well locations; however, dissolved mercury concentrations were detected below the SGVs. Total and dissolved antimony were detected in exceedance of the SGVs at one monitoring well location. Metals including total and/or dissolved lead, antimony, and mercury in groundwater are attributable to sediment entrainment of fill material of unknown origin in the unfiltered samples. Other metals detected in groundwater above the SGVs (total and/or dissolved iron, manganese, magnesium and sodium) are attributed to naturally occurring background concentrations.

PFAS compounds were detected in all groundwater samples for which it was analyzed during the 2020 RI. PFOS was detected in three monitoring wells and PFOA was detected in four monitoring wells above the guidance value of 10 ng/L. PFAS was not analyzed for samples collected during the 2019 Phase II EI. The presence of PFAS compounds in groundwater may be attributable to historical Site operations as a laundry facility or to fill material of unknown origin.

Groundwater sample analytical results did not identify the presence of pesticides, herbicides, or PCBs at concentrations above the SGVs in any samples for which it was analyzed.

8.4 Soil Vapor Contamination

Four soil vapor samples were collected during the 2019 Phase II EI and 14 soil vapor samples were collected during the 2020 RI. Analytical results revealed the CVOC PCE at concentrations which would be above the monitoring and/or mitigation threshold according to NYSDOH Soil Vapor Intrusion Guidance Matrix B if detected as part of a soil vapor intrusion evaluation at all four samples collected throughout the Site footprint during the 2019 Phase II EI. PCE was not detected above the referenced monitoring and/or mitigation threshold in any of the 14 soil vapor samples collected during the 2020 RI. Soil vapor sample analytical results also identified elevated concentrations of petroleum-related VOCs including BTEX compounds, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and/or MTBE at 10 of 18 sample locations throughout the site footprint.

CVOCs were not detected in exceedance of NYSDEC SCOs or SGVs in any soil or groundwater samples collected during the 2019 and 2020 investigations. As such, PCE in soil vapor is attributed to an off-Site source. Petroleum compounds detected in soil vapor and are attributed to the historical site as an automotive repair facility with fuel storage and/or former boiler room associated with a steam laundry facility.

9.0 CONCLUSIONS

Stratigraphy: A historic fill layer as deep as 25 feet is generally underlain by a clay layer. Bedrock was not encountered in any of the soil borings advanced during the 2019 Phase II EI or this RI.

Hydrogeology: Groundwater was encountered at elevations ranging from el 4.82 to 6.4 NAVD88. Based on area topography, observed water level measurements, and the proximity of the Site to the Harlem River, groundwater is inferred to flow to the southeast towards the Harlem River.

NAPL Impacts: LNAPL impacts in fill associated with historical Site operations including potential automotive repair and fuel storage and the former boiler room of the historical laundry facility are present across an approximately 9,700 SF area located in the eastern portion of the Site as observed in 8 soil borings and two monitoring wells.

Historic Fill Quality: Up to 25 feet of fill material was identified below surface cover. Contaminants identified within the fill material include SVOCs, metals, pesticides, PCBs, PFOA, and PFOS which were detected at concentrations above Unrestricted Use SCOs, Commercial RUSCOs, and/or Protection of Groundwater SCOs within this layer. Elevated concentrations of PAHs, metals, pesticides, and PCBs in fill material are attributable to fill material of unknown origin.

Groundwater Quality: Elevated concentrations of PAHs and metals (antimony, lead, and mercury) are attributed to sediment entrainment of fill material of unknown origin in the unfiltered samples. Other metals detected in groundwater above the SGVs (total and/or dissolved iron, manganese, magnesium and sodium) are attributed to naturally occurring background concentrations. The presence of PFOA and PFOS in groundwater may be attributable to historical Site operations as a laundry facility or to fill material of unknown origin.

Soil Vapor Quality: Results of the soil vapor evaluation completed as part of the 2019 Phase II EI identified concentrations of PCE that would require monitoring and/or mitigation per the NYSDOH Soil Vapor Intrusion Matrix guidance values. PCE was not detected above the NYSDOH guidance values in soil vapor during the 2020 RI or within soil or groundwater samples collected during both the 2019 and 2020 investigations above corresponding criteria. As such, PCE in soil vapor is likely attributed to an unknown off-Site source. Petroleum compounds including BTEX compounds, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and MTBE were also detected in soil vapor and are attributed to the historical Site operations.

Sufficient analytical data were gathered during the RI and previous studies to establish soil cleanup levels and to develop a remedy for the Site. The final remedy will be detailed in the forthcoming Remedial Action Work Plan (RAWP) to be prepared in accordance with NYS BCP guidelines. The remedy will need to address contaminated historic fill impacted with SVOCs, metals, pesticides, and PCBs; groundwater impacted with VOCs, SVOCs, and metals; and VOC-impacted soil vapor.

TABLES

Table 1
Remedial Investigation Report
Sample Summary Rationale

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Matrix	Sample Location	Sample Name	Sample Depth (ft bgs)	Analysis	Material	Rationale
Soil	LSB-36	060_LSB-36_1.0-3.0	1.0 - 3.0	VOCs SVOCs PCBs Herbicides Pesticides TAL Metals Hexavalent Chromium Mercury PFAS & 1,4-Dioxane	Fill	Site-Wide Characterization and AOC-3 Investigation
		061_LSB-36_12.0-14.0	12.0 - 14.0			
	LSB-37	050_LSB-37_1.0-3.0	1.0 - 3.0			
		051_LSB-37_12.0-14.0	12.0 - 14.0			
	LSB-38	062_LSB-38_2.0-4.0	2.0 - 4.0			
		063_LSB-38_12.0-14.0	12.0 - 14.0			
	LSB-39	065_LSB-39_1.0-3.0	1.0 - 3.0			
		066_LSB-39_12.0-14.0	12.0 - 14.0			
	LSB-40	053_LSB-40_1.0-3.0	1.0 - 3.0			Site-Wide Characterization, AOC-1 Investigation, and AOC-3 Investigation
		054_LSB-40_12.0-14.0	12.0 - 14.0			
	LSB-41	047_LSB-41_4.0-6.0	4.0 - 6.0			Site-Wide Characterization, AOC-1 Investigation, AOC-2 Investigation, and AOC-3 Investigation
		048_LSB-41_12.0-14.0	12.0 - 14.0			
	LSB-42	040_LSB-42_1.5-3.5	1.5 - 3.5			
		041_LSB-42_12.0-14.0	12.0 - 14.0		Fill/Native Interface	
	LSB-43	037_LSB-43_2.5-4.5	2.5 - 4.5		Fill	
		038_LSB-43_12.0-14.0	12.0 - 14.0			
	LSB-44	030_LSB-44_3.0-5.0	3.0 - 5.0			
		031_LSB-44_12.0-14.0	12.0 - 14.0			
	LSB-40	058_LSB-40_6.0-8.0	6.0 - 8.0	VOCs, SVOCs, PCBs	Fill	AOC-1 Investigation and NAPL Delineation
	LSB-41	057_LSB-41_7.5-9.5	7.5 - 9.5			
	LSB-42	044_LSB-42_7.5-9.5	7.5 - 9.5			
	LSB-45	056_LSB-45_7.5-9.5	7.5 - 9.5			
	LSB-46	055_LSB-46_6.0-8.0	6.0 - 8.0			
	LSB-47	049_LSB-47_8.5-10.5	8.5 - 10.5			
	LSB-48	039_LSB-48_8.0-10.0	8.0 - 10.0			
	LSB-49	033_LSB-49_9.5-11.5	9.5 - 11.5			
	LSB-50	042_LSB_50_9.5-11.5	9.5 - 11.5			
	LSB-52	035_LSB-52_9.5-11.5	9.5 - 11.5			
	LSB-53	043_LSB-53_9.5-11.5	9.5 - 11.5			
	LSB-54	045_LSB-54_9.5.-11.5	9.5 - 11.5			
Groundwater	LMW-1		10	VOCs SVOCs PCBs Herbicides Pesticides Total and Dissolved TAL Metals Hexavalent Chromium Mercury PFAS & 1,4-Dioxane (2020) Total PAHs Dissolved PAHs (2021)^	Fill	Site-Wide Characterization, AOC-1 Investigation, AOC-2 Investigation, AOC-3 Investigation, and evaluation of contaminants in soil as a potential source of groundwater impacts
	LMW-2*		--			NAPL Delineation and AOC-1 Investigation
	LMW-3		12			Site-Wide Characterization, AOC-3 Investigation, and evaluation of contaminants in soil as a potential source of groundwater impacts
	LMW-4		13			
	LMW-5*		--			NAPL Delineation and AOC-1 Investigation
	LMW-6		12			Side-Wide Characterization, NAPL Delineation, AOC-1 Investigation, AOC-2 Investigation, AOC-3 Investigation, and evaluation of contaminants in soil as a potential source of groundwater impacts
	LMW-7		11			
	LMW-8		13			Side-Wide Characterization, AOC-3 Investigation, and and evaluation of contaminants in soil as a potential source of groundwater impacts
	LMW-9		11			
Soil Vapor	LSV-5		3.5	VOCs	Fill	Site-Wide Characterization and AOC-3 Investigation
	LSV-6		3.5			
	LSV-7		7			
	LSV-8		7			
	LSV-9		3			
	LSV-10		6			Site-Wide Characterization , AOC-1 Investigation, and AOC-3 Investigation
	LSV-11		7.5			Site-Wide Characterization, AOC-1 Investigation, AOC-2 Investigation, and AOC-3 Investigation
	LSV-12		8			
	LSV-13		3			Site-Wide Characterization, AOC-2 Investigation, and AOC-3 Investigation
	LSV-14		4			Site-Wide Characterization, Investigation of Adjacent Property Impacts, AOC-2 Investigation, and AOC-3 Investigation
	LSV-15		3			
	LSV-16		3.5			
	LSV-17		7.5			Site-Wide Characterization, Investigation of Adjacent Property Impacts, AOC-1 Investigation, AOC-2 Investigation, and AOC-3 Investigation
	LSV-18		4			Site-Wide Characterization, Investigation of Adjacent Property Impacts, AOC-2 Investigation, and AOC-3 Investigation

^ Monitoring wells sampled for total and dissolved PAHs only during the February 2021 sampling event for AOC-3 Investigation and evaluation of contaminants in soil as a potential source of groundwater impacts.
* Monitoring wells not sampled due to product in well. Fingerprint samples collected during the 2020 sampling

AOC-1:	Petroleum Impacts from Historical Site Operations
AOC-2:	Chlorinated VOC Impacts from Historical Site Operations
AOC-3:	Historical Filling Associated with the Harlem River

Table 2
Remedial Investigaton Report
Phase II Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-23 001_LSB-23 L1922862-01 5/30/2019 3.5-5.5		LSB-24 002_LSB-24 L1922862-02 5/30/2019 7.5-9.5		LSB-24 003_DUP-1 L1922862-03 5/30/2019 7.5-9.5		LSB-25 004_LSB-25 L1922862-04 5/30/2019 7.5-9.5		LSB-26 005_LSB-26 L1922862-05 5/30/2019 8.5-10.5		LSB-27 006_LSB-27 L1922862-06 5/30/2019 6-8		LSB-28 008_LSB-28 L1923220-01 5/30/2019 6-8		LSB-29 012_LSB-29 L1923220-05 5/31/2019 3-5		LSB-30 013_LSB-30 L1923220-06 5/31/2019 6-8		LSB-31 014_LSB-31 L1923220-07 5/31/2019 7-9		LSB-32 015_LSB-32 L1923220-08 5/31/2019 10-12		LSB-33 016_LSB-33 L1923220-09 5/31/2019 5-7		LSB-34 017_LSB-34 L1923220-10 5/31/2019 6-8	
Volatile Organic Compounds (mg/kg)																													
1,1,1,2-Tetrachloroethane	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
1,1,1-Trichloroethane	0.68	500	0.68	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
1,1,2,2-Tetrachloroethane	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
1,1,2-Trichloroethane	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
1,1-Dichloroethane	0.27	240	0.27	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
1,1-Dichloroethene	0.33	500	0.33	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
1,1-Dichloropropene	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
1,2,3-Trichlorobenzene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,2,3-Trichloropropane	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,2,4,5-Tetramethylbenzene	~	~	~	0.0019	U	4		4.6		0.0026	U	0.0018	U	1.2		4.4		0.003	U	0.0019	U	0.026	J	0.0024	U	0.00025	J	0.0033	U
1,2,4-Trichlorobenzene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,2,4-Trimethylbenzene	3.6	190	3.6	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.032	J	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,2-Dibromo-3-Chloropropane	~	~	~	0.0028	U	0.22	U	0.26	U	0.0039	U	0.0027	U	0.17	U	0.24	U	0.0044	U	0.0029	U	0.32	U	0.0036	U	0.0039	U	0.0049	U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
1,2-Dichlorobenzene	1.1	500	1.1	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.013	J	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,2-Dichloroethane	0.02	30	0.02	0.00095	U	*0.075*	U	*0.087*	U	0.0013	U	0.00091	U	*0.056*	U	*0.08*	U	0.0015	U	0.00097	U	*0.11*	U	0.0012	U	0.0013	U	0.0016	U
1,2-Dichloropropane	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	8.4	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,3-Dichlorobenzene	2.4	280	2.4	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,3-Dichloropropane	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,4-Dichlorobenzene	1.8	130	1.8	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
1,4-Diethyl Benzene	~	~	~	0.0019	U	0.15	U	0.044	J	0.0026	U	0.0018	U	0.24		1.2		0.003	U	0.0019	U	0.22	U	0.0024	U	0.00026	J	0.0033	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.076	UJ	*6*	UJ	*6.9*	UJ	0.1	UJ	0.073	UJ	*4.5*	UJ	*6.4*	UJ	*0.12*	UJ	0.077	UJ	*8.6*	UJ	0.097	UJ	0.1	UJ	*0.13*	UJ
2,2-Dichloropropane	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
2-Chlorotoluene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
2-Hexanone	~	~	~	0.0095	UJ	0.75	UJ	0.87	UJ	0.013	UJ	0.0091	UJ	0.56	UJ	0.8	U	0.015	U	0.0097	U	1.1	U	0.012	U	0.013	U	0.016	U
4-Chlorotoluene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
4-Ethyltoluene	~	~	~	0.0019	U	0.034	J	0.038	J	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Acetone	0.05	500	0.05	0.0093	J	*0.75*	U	*0.87*	U	0.037		0.0063	J	*0.56*	U	**0.48**	J	0.015	UJ	0.0086	J	*1.1*	UJ	0.032	J	0.021	J	0.019	J
Acrylonitrile	~	~	~	0.0038	U	0.3	U	0.35	U	0.0052	U	0.0036	U	0.22	U	0.32	U	0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.0065	U
Benzene	0.06	44	0.06	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
Bromobenzene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Bromochloromethane	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Bromodichloromethane	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
Bromoform	~	~	~	0.0038	U	0.3	U	0.35	U	0.0052	U	0.0036	U	0.22	U	0.32	U	0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.0065	U
Bromomethane	~	~	~	0.0019	UJ	0.15	U	0.17	U	0.0026	UJ	0.0018	UJ	0.11	UJ	0.16	UJ	0.003	UJ	0.0019	UJ	0.22	UJ	0.0024	UJ	0.0026	U	0.0033	UJ
Carbon Disulfide	~	~	~	0.0095	U	0.75	U	0.87	U	0.013	U	0.0091	U	0.56	U	0.8	UJ	0.015	UJ	0.0097	UJ	1.1	UJ	0.012	UJ	0.013	UJ	0.016	UJ
Carbon Tetrachloride	0.76	22	0.76	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Chlorobenzene	1.1	500	1.1	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00013	J	0.054	U	0.0002	J	0.00065	U	0.00022	J
Chloroethane	~	~	~	0.0019	UJ	0.15	UJ	0.17	UJ	0.0026	UJ	0.0018	UJ	0.11	UJ	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Chloroform	0.37	350	0.37	0.0014	U	0.11	U	0.13	U	0.0019	U	0.0014	U	0.084	U	0.12	U	0.0022	U	0.0014	U	0.16	U	0.0018	U	0.002	U	0.0024	U
Chloromethane	~	~	~	0.0038	U	0.3	U	0.35	U	0.0052	U	0.0036	U	0.22	U	0.32	U	0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.0065	U
Cis-1,2-Dichloroethene	0.25	500	0.25	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Cis-1,3-Dichloropropene	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
Cymene	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.03	J	0.08	U	0.0015	U	0.00097	U	0.026	J	0.00014	J	0.0013	U	0.0016	U
Dibromochloromethane	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Dibromomethane	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Dichlorodifluoromethane	~	~	~	0.0095	UJ	0.75	UJ	0.87	UJ	0.013	UJ	0.0091	UJ	0.56	UJ	0.8	UJ	0.015	UJ	0.0097	UJ	1.1	UJ	0.012	UJ	0.013	UJ	0.016	UJ
Diethyl Ether (Ethyl Ether)	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Ethylbenzene	1	390	1	0.00095	U	0.039	J	0.037	J	0.0013	U	0.00091	U	0.01	J	0.024	J	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Hexachlorobutadiene	~	~	~	0.0038	U	0.3	U	0.35	U	0.0052	U	0.0036	U	0.22	U	0.32	U	0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.0065	U
Isopropylbenzene (Cumene)	~	~	~	0.00095	U	0.44		0.52		0.0013	U	0.00091	U	0.064		1.6		0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
M,P-Xylene	~	~	~	0.0019	U	0.15	U	0.17	U	0.0026	U	0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.12	0.0095	U	*0.75*	U	*0.87*	U	0.013	U	0.0091	U	*0.56*	U	*0.8*	UJ	0.015	UJ	0.0097	UJ	*1.1*	UJ	0.012	UJ	0.013	UJ	0.016	UJ
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.0095	UJ	0.75	UJ	0.87	UJ	0.013	UJ	0.0091	UJ	0.56	UJ	0.8	UJ	0.015	UJ	0.0097	UJ	1.1	UJ	0.012	UJ	0.013	UJ	0.016	UJ
Methylene Chloride	0.05	500	0.05	0.0048	U	*0.38*	U	*0.43*	U	0.0064	U	0.0046	U	*0.28*	U	*0.4*	U	0.0074	U	0.0048	U	*0.54*	U	0.006	U	0.0065	U	0.0082	U
Naphthalene	12	500	12	0.0038	U	0.55		0.6		0.0052	U	0.0036	U	0.22	U	0.38		0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.002	J
n-Butylbenzene	12	500	12	0.00095	U	0.064	J	0.056	J	0.0013	U	0.00091	U	0.15		1.6		0.0015	U	0.00097	U	0.026	J	0.0012	U	0.0013	U	0.0016	U
n-Propylbenzene	3.9	500	3.9	0.00095	U	0.077		0.072	J	0.0013	U	0.00091	U	0.085		2.3		0.0015	U	0.00097	U	0.02	J	0.0012	U	0.0013	U	0.0016	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.00095	U	0.022	J	0.087	U	0.0013	U	0.00091	U	0.031	J	0.21		0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Sec-Butylbenzene	11	500	11	0.00095	U	1.6		1.7		0.0013	U	0.00091	U	0.14		1.3		0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Styrene	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
T-Butylbenzene	5.9	500	5.9	0.0019	U	0.14	J	0.14	J	0.0026	U	0.0018	U	0.11	U	0.083	J	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Tert-Butyl Methyl Ether	0.93	500	0.93	0.0019	U	0.15	U	0.17	U	0.0026		0.0018	U	0.11	U	0.16	U	0.003	U	0.0019	U	0.22	U	0.0024	U	0.0026	U	0.0033	U
Tetrachloroethene (PCE)	1.3	150	1.3	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
Toluene	0.7	500	0.7	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Total Xylenes	0.26	500	1.6	0.00095	U	0.022	J	0.087	U	0.0013	U	0.00091	U	0.031	J	0.21		0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Total, 1,3-Dichloropropene (Cis And Trans)	~	~	~	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	U	0.00074	U	0.00048	U	0.054	U	0.0006	U	0.00065	U	0.00082	U
Trans-1,2-Dichloroethene	0.19	500	0.19	0.0014	U	0.11	U	0.13	U	0.0019	U	0.0014	U	0.084	U	0.12	U	0.0022	U	0.0014	U	0.16	U	0.0018	U	0.002	U	0.0024	U
Trans-1,3-Dichloropropene	~	~	~	0.00095	U	0.075	U	0.087	U	0.0013	U	0.00091	U	0.056	U	0.08	U	0.0015	U	0.00097	U	0.11	U	0.0012	U	0.0013	U	0.0016	U
Trans-1,4-Dichloro-2-Butene	~	~	~	0.0048	U	0.38	U	0.43	U	0.0064	U	0.0046	U	0.28	U	0.4	U	0.0074	U	0.0048	U	0.54	U	0.006	U	0.0065	U	0.0082	U
Trichloroethene (TCE)	0.47	200	0.47	0.00048	U	0.038	U	0.043	U	0.00064	U	0.00046	U	0.028	U	0.04	UJ	0.00074	UJ	0.00048	UJ	0.054	UJ	0.0006	UJ	0.00065	UJ	0.00082	UJ
Trichlorofluoromethane	~	~	~	0.0038	U	0.3	U	0.35	U	0.0052	U	0.0036	U	0.22	U	0.32	U	0.0059	U	0.0039	U	0.43	U	0.0048	U	0.0052	U	0.0065	U
Vinyl Acetate	~	~	~	0.0095	U	0.75	U	0.87	U	0.013	U	0.0091	U	0.56	U	0.8	U	0.015	U	0.0097	U	1.1	U	0.012	U	0.013	U	0.016	U
Vinyl Chloride	0.02	13	0.02	0.00095	U	*0.075*	U	*0.087*	U	0.0013	U	0.00091	U	*0.056*	U	*0.08*	U	0.0015	U	0.00097	U	*0.11*	U	0.0012	U	0.0013	U	0.0016	U

Notes provided on Page 4.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 2
Remedial Investigaton Report
Phase II Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Commercial SCOs**	**NYSDEC Part 375 Protection of Groundwater SCOs**	**LSB-23**		**LSB-24**		**LSB-24**		**LSB-25**		**LSB-26**		**LSB-27**		**LSB-28**		**LSB-29**		**LSB-30**		**LSB-31**		**LSB-32**		**LSB-33**		**LSB-34**	
Sample ID				**001_LSB-23**		**002_LSB-24**		**003_DUP-1**		**004_LSB-25**		**005_LSB-26**		**006_LSB-27**		**008_LSB-28**		**012_LSB-29**		**013_LSB-30**		**014_LSB-31**		**015_LSB-32**		**016_LSB-33**		**017_LSB-34**	
Laboratory ID				**L1922862-01**		**L1922862-02**		**L1922862-03**		**L1922862-04**		**L1922862-05**		**L1922862-06**		**L1923220-01**		**L1923220-05**		**L1923220-06**		**L1923220-07**		**L1923220-08**		**L1923220-09**		**L1923220-10**	
Sample Date				**5/30/2019**		**5/30/2019**		**5/30/2019**		**5/30/2019**		**5/30/2019**		**5/30/2019**		**5/30/2019**		**5/31/2019**		**5/31/2019**		**5/31/2019**		**5/31/2019**		**5/31/2019**		**5/31/2019**	
Sample Depth (feet bgs)				**3.5-5.5**		**7.5-9.5**		**7.5-9.5**		**7.5-9.5**		**8.5-10.5**		**6-8**		**6-8**		**3-5**		**6-8**		**7-9**		**10-12**		**5-7**		**6-8**	
Semivolatile Organic Compounds (mg/kg)																													
1,2,4,5-Tetrachlorobenzene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
1,2,4-Trichlorobenzene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
1,2-Dichlorobenzene	1.1	500	1.1	0.2	U	1	U	1	U	0.6	U	0.2	U	*2.9*	U	*4.1*	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
1,3-Dichlorobenzene	2.4	280	2.4	0.2	U	1	U	1	U	0.6	U	0.2	U	*2.9*	U	*4.1*	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
1,4-Dichlorobenzene	1.8	130	1.8	0.2	U	1	U	1	U	0.6	U	0.2	U	*2.9*	U	*4.1*	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.029	U	*0.15*	U	*0.15*	U	0.09	U	0.029	U	*0.44*	U	*0.61*	U	0.032	U	*0.13*	U	0.032	U	*0.16*	U	0.031	U	*0.15*	U
2,4,5-Trichlorophenol	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2,4,6-Trichlorophenol	~	~	~	0.12	U	0.61	U	0.62	U	0.36	U	0.12	U	1.8	U	2.4	U	0.13	U	0.54	U	0.13	U	0.65	U	0.12	U	0.61	U
2,4-Dichlorophenol	~	~	~	0.18	U	0.92	U	0.92	U	0.54	U	0.18	U	2.6	U	3.7	U	0.19	U	0.81	U	0.19	U	0.98	U	0.19	U	0.92	U
2,4-Dimethylphenol	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2,4-Dinitrophenol	~	~	~	0.94	UJ	4.9	UJ	4.9	UJ	2.9	UJ	0.94	UJ	14	UJ	20	U	1	UJ	4.3	U	1	U	5.2	U	1	U	4.9	U
2,4-Dinitrotoluene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2,6-Dinitrotoluene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2-Chloronaphthalene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2-Chlorophenol	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2-Methylnaphthalene	~	~	~	0.24	U	0.59	J	0.4	J	0.13	J	0.049	J	3.5	U	36		0.25	U	1.2		0.26	U	1.3	U	0.25	U	0.36	J
2-Methylphenol (o-Cresol)	0.33	500	0.33	0.2	U	*1*	U	*1*	U	*0.6*	U	0.033	J	*2.9*	U	*4.1*	U	0.21	U	*0.9*	U	0.22	U	*1.1*	U	0.21	U	*1*	U
2-Nitroaniline	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
2-Nitrophenol	~	~	~	0.42	U	2.2	U	2.2	U	1.3	U	0.42	U	6.4	U	8.8	U	0.46	U	1.9	U	0.47	U	2.3	U	0.45	U	2.2	U
3 & 4 Methylphenol (m&p Cresol)	0.33	500	0.33	0.28	U	*1.5*	U	*1.5*	U	*0.86*	U	0.18	J	*4.2*	U	*5.8*	U	0.3	U	0.22	J	0.31	U	*1.6*	U	0.3	U	*1.5*	U
3,3'-Dichlorobenzidine	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
3-Nitroaniline	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4,6-Dinitro-2-Methylphenol	~	~	~	0.51	U	2.7	U	2.7	U	1.6	U	0.51	U	7.6	U	10	U	0.55	U	2.3	U	0.56	U	2.8	U	0.54	U	2.7	U
4-Bromophenyl Phenyl Ether	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4-Chloro-3-Methylphenol	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4-Chloroaniline	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4-Chlorophenyl Phenyl Ether	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4-Nitroaniline	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
4-Nitrophenol	~	~	~	0.27	U	1.4	U	1.4	U	0.84	U	0.27	U	4.1	U	5.7	U	0.3	U	1.2	U	0.3	U	1.5	U	0.29	U	1.4	U
Acenaphthene	20	500	98	0.16	U	1.2		1		0.1	J	0.068	J	0.47	J	5		0.052	J	1		0.17	U	0.87	U	0.028	J	0.8	J
Acenaphthylene	100	500	107	0.16	U	0.82	U	0.82	U	0.52		1.8		2.4	U	3.2	U	0.04	J	0.95		0.17	U	0.32	J	0.23		1.9	
Acetophenone	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Anthracene	100	500	1,000	0.12	U	0.68		0.56	J	0.57		0.64		1.8	U	3.3		0.11	J	3.9		0.13	U	0.22	J	0.25		4.5	
Benzo(a)anthracene	1	5.6	1	0.051	J	0.48	J	0.39	J	**3.6**		0.58		0.56	J	**2.8**		0.53		**7.1**		0.062	J	0.43	J	0.97		**14**	
Benzo(a)pyrene	1	1	22	0.1	J	0.41	J	0.36	J	**4.5**		**4**		*2.4*	U	**2**	J	0.58		**5.6**		0.065	J	0.46	J	**1.1**		**16**	
Benzo(b)fluoranthene	1	5.6	1.7	0.14		0.29	J	0.24	J	**5.2**		**3.4**		*1.8*	U	**1.5**	J	0.75		**7.3**		0.083	J	0.5	J	**1.3**		**20**	
Benzo(g,h,i)Perylene	100	500	1,000	0.1	J	0.33	J	0.29	J	3		4.7		0.37	J	1.5	J	0.45		2.8		0.046	J	0.41	J	0.78		12	
Benzo(k)fluoranthene	0.8	56	1.7	0.044	J	0.61	U	0.62	U	**1.6**		**0.85**		*1.8*	U	*2.4*	U	0.22		**2.6**		0.13	U	0.65	U	0.35		**5.5**	
Benzoic Acid	~	~	~	0.63	UJ	3.3	UJ	3.3	UJ	1.9	UJ	0.64	UJ	9.5	UJ	13	U	0.69	U	2.9	U	0.7	U	3.5	U	0.68	U	3.3	U
Benzyl Alcohol	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Benzyl Butyl Phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Biphenyl (Diphenyl)	~	~	~	0.45	U	2.3	U	2.3	U	1.4	U	0.45	U	6.7	U	9.3	U	0.48	U	0.38	J	0.49	U	2.5	U	0.48	U	2.3	U
Bis(2-chloroethoxy) methane	~	~	~	0.21	U	1.1	U	1.1	U	0.65	U	0.21	U	3.2	U	4.4	U	0.23	U	0.97	U	0.23	U	1.2	U	0.23	U	1.1	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.18	U	0.92	U	0.92	U	0.54	U	0.18	U	2.6	U	3.7	U	0.19	U	0.81	U	0.19	U	0.98	U	0.19	U	0.92	U
Bis(2-chloroisopropyl) ether	~	~	~	0.24	U	1.2	U	1.2	U	0.72	U	0.24	U	3.5	U	4.9	U	0.25	U	1.1	U	0.26	U	1.3	U	0.25	U	1.2	U
Bis(2-ethylhexyl) phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.27		0.9	U	0.22	U	1.1	U	0.09	J	1	U
Carbazole	~	~	~	0.2	U	1	U	1	U	0.1	J	0.11	J	2.9	U	4.1	U	0.07	J	2.2		0.22	U	1.1	U	0.022	J	0.51	J
Chrysene	1	56	1	0.056	J	1		0.91		**3.3**		0.72		**1.1**	J	**5.4**		0.51		**6.5**		0.06	J	0.44	J	0.79		**13**	
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.12	U	*0.61*	U	*0.62*	U	**0.57**		**0.61**		*1.8*	U	*2.4*	U	0.091	J	**0.84**		0.13	U	*0.65*	U	0.15		**2.5**	
Dibenzofuran	7	350	210	0.2	U	0.72	J	0.6	J	0.17	J	0.063	J	0.28	J	4.1	U	0.027	J	1.8		0.22	U	1.1	U	0.029	J	0.71	J
Dibutyl phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Diethyl phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Dimethyl phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Dioctyl phthalate	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Fluoranthene	100	500	1,000	0.037	J	0.41	J	0.28	J	5.7		0.8		0.41	J	2.7		1		14		0.12	J	0.5	J	1.6		27	
Fluorene	30	500	386	0.2	U	1.8		1.5		0.086	J	0.061	J	0.93	J	6.9		0.036	J	2.1		0.22	U	1.1	U	0.026	J	0.79	J
Hexachlorobenzene	0.33	6	3.2	0.12	U	*0.61*	U	*0.62*	U	*0.36*	U	0.12	U	*1.8*	U	*2.4*	U	0.13	U	*0.54*	U	0.13	U	*0.65*	U	0.12	U	*0.61*	U
Hexachlorobutadiene	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
Hexachlorocyclopentadiene	~	~	~	0.56	U	2.9	U	2.9	U	1.7	U	0.56	U	8.4	U	12	U	0.61	U	2.6	UJ	0.62	U	3.1	UJ	0.6	U	2.9	U
Hexachloroethane	~	~	~	0.16	U	0.82	U	0.82	U	0.48	U	0.16	U	2.4	U	3.2	U	0.17	U	0.72	U	0.17	U	0.87	U	0.17	U	0.82	U
Indeno(1,2,3-cd)pyrene	0.5	5.6	8.2	0.1	J	*0.82*	U	*0.82*	U	**3.1**		**4.5**		*2.4*	U	**1.5**	J	0.43		**3**		0.09	J	**0.58**	J	**0.73**		**11**	
Isophorone	~	~	~	0.18	U	0.92	U	0.92	U	0.54	U	0.18	U	2.6	U	3.7	U	0.19	U	0.81	U	0.19	U	0.98	U	0.19	U	0.92	U
Naphthalene	12	500	12	0.024	J	0.28	J	0.19	J	0.68		0.41		2.9	U	1.4	J	0.044	J	4.5		0.22	U	0.15	J	0.12	J	1.9	
Nitrobenzene	~	~	~	0.18	U	0.92	U	0.92	U	0.54	U	0.18	U	2.6	U	3.7	U	0.19	U	0.81	U	0.19	U	0.98	U	0.19	U	0.92	U
n-Nitrosodi-N-Propylamine	~	~	~	0.2	U	1	U	1	U	0.6	U	0.2	U	2.9	U	4.1	U	0.21	U	0.9	U	0.22	U	1.1	U	0.21	U	1	U
n-Nitrosodiphenylamine	~	~	~	0.16	U	0.82	U	0.82	U	0.48	U	0.16	U	2.4	U	3.2	U	0.17	U	0.72	U	0.17	U	0.87	U	0.17	U	0.82	U
Pentachlorophenol	0.8	6.7	0.8	0.16	U	*0.82*	U	*0.82*	U	0.48	U	0.16	U	*2.4*	U	*3.2*	U	0.17	U	0.72	U	0.17	U	*0.87*	U	0.17	U	*0.82*	U
Phenanthrene	100	500	1,000	0.12	U	0.21	J	0.62	U	1.6		0.41		0.92	J	19		0.63		16		0.058	J	0.26	J	0.56		14	
Phenol	0.33	500	0.33	0.2	U	*1*	U	*1*	U	*0.6*	U	0.08	J	*2.9*	U	*4.1*	U	0.21	U	0.17	J	0.22	U	*1.1*	U	0.21	U	*1*	U
Pyrene	100	500	1,000	0.037	J	1.4		1.3		5.4		0.67		1.3	J	8.2		0.87		11		0.1	J	0.67		1.4		25	

Notes provided on Page 4.

Concentrations above Unrestricted Use SCOs are bolded.

Concentrations above Restricted Use Commercial SCOs are shaded.

Concentrations above Protection of Groundwater SCOs are underlined.

Table 2
Remedial Investigaton Report
Phase II Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-23	LSB-24	LSB-24	LSB-25	LSB-26	LSB-27	LSB-28	LSB-29	LSB-30	LSB-31	LSB-32	LSB-33	LSB-34
Sample ID				001_LSB-23	002_LSB-24	003_DUP-1	004_LSB-25	005_LSB-26	006_LSB-27	008_LSB-28	012_LSB-29	013_LSB-30	014_LSB-31	015_LSB-32	016_LSB-33	017_LSB-34
Laboratory ID				L1922862-01	L1922862-02	L1922862-03	L1922862-04	L1922862-05	L1922862-06	L1923220-01	L1923220-05	L1923220-06	L1923220-07	L1923220-08	L1923220-09	L1923220-10
Sample Date				5/30/2019	5/30/2019	5/30/2019	5/30/2019	5/30/2019	5/30/2019	5/30/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019
Sample Depth (feet bgs)				3.5-5.5	7.5-9.5	7.5-9.5	7.5-9.5	8.5-10.5	6-8	6-8	3-5	6-8	7-9	10-12	5-7	6-8
Pesticides (mg/kg)																
4,4'-DDD	0.0033	92	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	62	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	47	136	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	0.68	0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	3.4	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Chlordane	0.094	24	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	2.4	200	102	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	3	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Endosulfan	2.4	200	102	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (alpha and gamma)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	500	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	1.4	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	200	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	89	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	0.1	9.2	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordane	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	15	0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (mg/kg)																
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silvex (2,4,5-Tp)	3.8	500	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (mg/kg)																
PCB-1016 (Aroclor 1016)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1221 (Aroclor 1221)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1232 (Aroclor 1232)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1242 (Aroclor 1242)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1248 (Aroclor 1248)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.0593	0.0398 U
PCB-1254 (Aroclor 1254)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1260 (Aroclor 1260)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1262 (Aroclor 1262)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
PCB-1268 (Aroclor 1268)	~	~	~	NA	0.0411 UJ	NA	NA	NA	NA	0.806 U	0.0413 U	0.0364 U	0.0425 U	NA	0.04 U	0.0398 U
Total PCBs	0.1	1	3.2	NA	0.0411 UJ	NA	NA	NA	NA	*0.806* U	0.0413 U	0.0364 U	0.0425 U	NA	0.0593	0.0398 U
Inorganics (mg/kg)																
Aluminum	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	16	8.49	2.03	1.61	3.46	0.462 U	2.95	**18.7**	9.98	5.04	9.62	7.13	**14.4**	3.62
Barium	350	400	820	135	150	111	136	75.4	104	132	222	60.8	116	142	153	113
Beryllium	7.2	590	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	9.3	7.5	1.27	0.669	0.679	1.39	0.837	0.304 J	**5.6**	1.06	0.432 U	0.523 U	0.52 U	0.491 U	0.492 U
Calcium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent	1	400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Total	30	1,500	~	14.1	**34.1**	**32.2**	12.3	16.5	9.04	12.2	11.1	13.5 J	11.3 J	**39.6** J	9.6 J	11.9 J
Chromium, Trivalent	30	1,500	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	270	1,720	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	1,000	450	**291**	**477**	**421**	**395**	15.5	**136**	**648**	**650**	**158**	**153**	**175**	**225**	**225**
Magnesium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	2.8	0.73	**0.881**	**1.39** J	0.083 J	**0.324**	0.096 U	**11.6**	**0.188**	**2.5**	**0.319**	0.106	**0.709** J	**0.438** J	**0.444**
Nickel	30	310	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	1,500	4	1.69	0.697 J	0.944 J	2.91	0.402 J	0.664 J	**31.7**	3.29	0.125 J	0.508 J	2.9	1.1	0.182 J
Silver	2	1,500	8.3	0.272 J	0.19 J	0.148 J	0.143 J	0.462 U	0.177 J	0.283 J	0.318 J	0.432 U	0.523 U	0.229 J	0.491 U	0.143 J
Sodium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	2,480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (%)																
Total Solids	~	~	~	83.4	79.5	79.4	80.5	83.8	83.4	81.9	78	90.3	76.2	76.7	79.1	79.8

Notes provided on Page 4.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 2
Remedial Investigaton Report
Phase II Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and
3. Criterion comparisons for total chromium are provided for reference for the 2019 data. Promulgated SCOs shown are for trivalent chromium.
4. Detected analytical results above Unrestricted Use SCOs are bolded.
5. Detected analytical results above Restricted Use Commercial SCOs are shaded.
6. Detected analytical results above Protection of Groundwater SCOs are underlined.
7. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
8. Sample 003_DUP-1 is a duplicate sample of 002_LSB-24
9. ~ = Regulatory limit for this analyte does not exist
10. bgs = below grade surface
11. mg/kg = milligrams per kilogram
12. % = percent
13. NA = Not analyzed

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 3
Remedial Investigation Report
Phase II Groundwater Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC SGVs**	**LMW-1**		**LMW-2**		**LMW-3**		**LMW-4**		**LMW-4**	
Sample ID		**019_LMW-1**		**018_LMW-2**		**020_LMW-3**		**021_LMW-4**		**023_DUP-2**	
Laboratory ID		**L1923415-02**		**L1923415-01**		**L1923415-03**		**L1923415-04**		**L1923415-05**	
Sample Date		**6/3/2019**		**6/3/2019**		**6/3/2019**		**6/3/2019**		**6/3/2019**	
Volatile Organic Compounds (µg/L)											
1,1,1,2-Tetrachloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,1,1-Trichloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	*1.5*	U	*1.5*	U	*1.5*	U	*1.5*	U	*1.5*	U
1,1-Dichloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,1-Dichloroethene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2,3-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2,3-Trichloropropane	0.04	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U
1,2,4,5-Tetramethylbenzene	5	2	U	1.6	J	2	U	2	U	2	U
1,2,4-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2,4-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dibromo-3-Chloropropane	0.04	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	*2*	U	*2*	U	*2*	U	*2*	U	*2*	U
1,2-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene (Mesitylene)	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,3-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,3-Dichloropropane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,4-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,4-Diethyl Benzene	~	2	U	2	U	2	U	2	U	2	U
1,4-Dioxane (P-Dioxane)	~	250	UJ	250	UJ	250	UJ	250	UJ	250	UJ
2,2-Dichloropropane	5	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
2-Chlorotoluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2-Hexanone	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
4-Chlorotoluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
4-Ethyltoluene	~	2	U	2	U	2	U	2	U	2	U
Acetone	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Acrylonitrile	5	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Bromochloromethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	50	2	U	2	U	2	U	2	U	2	U
Bromomethane	5	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Carbon Disulfide	60	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Chloroethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Chloroform	7	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Chloromethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Cis-1,2-Dichloroethene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Cis-1,3-Dichloropropene	0.4	*0.5*	UJ	*0.5*	UJ	*0.5*	UJ	*0.5*	UJ	*0.5*	UJ
Cymene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Dibromochloromethane	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	5	5	U	5	U	5	U	5	U	5	U
Dichlorodifluoromethane	5	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Diethyl Ether (Ethyl Ether)	~	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Ethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Hexachlorobutadiene	0.5	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U	*2.5*	U
Isopropylbenzene (Cumene)	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
M,P-Xylene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Methyl Ethyl Ketone (2-Butanone)	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Methylene Chloride	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Naphthalene	10	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
n-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
n-Propylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
o-Xylene (1,2-Dimethylbenzene)	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Sec-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Styrene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
T-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Tert-Butyl Methyl Ether	10	1.2	J	2.9		**17**		2.5	U	2.5	U
Tetrachloroethene (PCE)	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Total 1,2-Dichloroethene (Cis and Trans)	~	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Total Xylenes	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Total, 1,3-Dichloropropene (Cis And Trans)	0.4	*0.5*	U	*0.5*	U	*0.5*	U	*0.5*	U	*0.5*	U
Trans-1,2-Dichloroethene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Trans-1,3-Dichloropropene	0.4	*0.5*	U	*0.5*	U	*0.5*	U	*0.5*	U	*0.5*	U
Trans-1,4-Dichloro-2-Butene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Trichloroethene (TCE)	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Vinyl Acetate	~	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U

Notes provided on Page 4.

Table 3
Remedial Investigation Report
Phase II Groundwater Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location		**LMW-1**		**LMW-2**		**LMW-3**		**LMW-4**		**LMW-4**	
Sample ID	**NYSDEC SGVs**	**019_LMW-1**		**018_LMW-2**		**020_LMW-3**		**021_LMW-4**		**023_DUP-2**	
Laboratory ID		**L1923415-02**		**L1923415-01**		**L1923415-03**		**L1923415-04**		**L1923415-05**	
Sample Date		**6/3/2019**		**6/3/2019**		**6/3/2019**		**6/3/2019**		**6/3/2019**	
Semivolatile Organic Compounds (µg/L)											
1,2,4,5-Tetrachlorobenzene	5	*10*	U	*10*	U	*10*	U	*10*	U	*10*	U
1,2,4-Trichlorobenzene	5	5	U	5	U	5	U	5	U	5	U
1,2-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U
1,3-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U
1,4-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U
2,4,5-Trichlorophenol	~	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
2,4,6-Trichlorophenol	~	5	U	5	U	5	U	5	U	5	U
2,4-Dichlorophenol	1	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U
2,4-Dimethylphenol	1	*5*	UJ	*5*	UJ	*5*	UJ	*5*	UJ	*5*	UJ
2,4-Dinitrophenol	1	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U
2,4-Dinitrotoluene	5	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
2,6-Dinitrotoluene	5	5	U	5	U	5	U	5	U	5	U
2-Chloronaphthalene	10	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
2-Chlorophenol	~	2	U	2	U	2	U	2	U	2	U
2-Methylnaphthalene	~	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
2-Methylphenol (o-Cresol)	~	5	U	5	U	5	U	5	U	5	U
2-Nitroaniline	5	5	U	5	U	5	U	5	U	5	U
2-Nitrophenol	~	10	U	10	U	10	U	10	U	10	U
3 & 4 Methylphenol (m&p Cresol)	~	5	U	5	U	5	U	5	U	5	U
3,3'-Dichlorobenzidine	5	5	U	5	U	5	U	5	U	5	U
3-Nitroaniline	5	5	U	5	U	5	U	5	U	5	U
4,6-Dinitro-2-Methylphenol	~	10	U	10	U	10	U	10	U	10	U
4-Bromophenyl Phenyl Ether	~	2	U	2	U	2	U	2	U	2	U
4-Chloro-3-Methylphenol	~	2	U	2	U	2	U	2	U	2	U
4-Chloroaniline	5	5	U	5	U	5	U	5	U	5	U
4-Chlorophenyl Phenyl Ether	~	2	U	2	U	2	U	2	U	2	U
4-Nitroaniline	5	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
4-Nitrophenol	~	10	U	10	U	10	U	10	U	10	U
Acenaphthene	20	0.1	U	0.57		0.02	J	0.04	J	0.1	U
Acenaphthylene	~	0.1	U	0.07	J	0.1	U	0.02	J	0.03	J
Acetophenone	~	5	U	5	U	5	U	5	U	5	U
Anthracene	50	0.03	J	0.1	U	0.02	J	0.08	J	0.1	U
Benzo(a)anthracene	0.002	**0.02**	J	**0.06**	J	**0.04**	J	**0.09**	J	**0.1**	J
Benzo(a)pyrene	0	**0.03**	J	**0.05**	J	**0.03**	J	**0.09**	J	**0.12**	
Benzo(b)fluoranthene	0.002	*0.1*	U	**0.07**	J	*0.1*	U	*0.11*	U	**0.14**	
Benzo(g,h,i)Perylene	~	0.03	J	0.03	J	0.03	J	0.07	J	0.1	
Benzo(k)fluoranthene	0.002	*0.1*	U	**0.02**	J	*0.1*	U	*0.1*	U	**0.05**	J
Benzoic Acid	~	50	U	50	U	50	U	50	U	50	U
Benzyl Alcohol	~	2	U	2	U	2	U	2	U	2	U
Benzyl Butyl Phthalate	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Biphenyl (Diphenyl)	5	2	U	2	U	2	U	2	U	2	U
Bis(2-chloroethoxy) methane	5	5	U	5	U	5	U	5	U	5	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	1	*2*	U	*2*	U	*2*	U	*2*	U	*2*	U
Bis(2-chloroisopropyl) ether	5	2	U	2	U	2	U	2	U	2	U
Bis(2-ethylhexyl) phthalate	5	3	UJ	3	UJ	3	UJ	3	UJ	3.3	J
Carbazole	~	2	U	2	U	2	U	2	U	2	U
Chrysene	0.002	*0.1*	U	**0.07**	J	*0.1*	U	*0.1*	U	**0.09**	J
Dibenz(a,h)anthracene	~	0.02	J	0.1	U	0.1	U	0.02	J	0.02	J
Dibenzofuran	~	2	U	2	U	2	U	2	U	2	U
Dibutyl phthalate	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Diethyl phthalate	50	5	U	5	U	5	U	5	U	5	U
Dimethyl phthalate	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Dioctyl phthalate	50	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
Fluoranthene	50	0.04	J	0.11	U	0.08	J	0.22		0.2	U
Fluorene	50	0.1	U	0.46		0.1	U	0.1	U	0.1	U
Hexachlorobenzene	0.04	*0.8*	U	*0.8*	U	*0.8*	U	*0.8*	U	*0.8*	U
Hexachlorobutadiene	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorocyclopentadiene	5	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U
Hexachloroethane	5	0.8	U	0.8	U	0.8	U	0.8	U	0.8	U
Indeno(1,2,3-cd)pyrene	0.002	**0.03**	J	**0.03**	J	**0.03**	J	**0.08**	J	**0.11**	J
Isophorone	50	5	U	5	U	5	U	5	U	5	U
Naphthalene	10	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nitrobenzene	0.4	*2*	U	*2*	U	*2*	U	*2*	U	*2*	U
n-Nitrosodi-N-Propylamine	~	5	U	5	U	5	U	5	U	5	U
n-Nitrosodiphenylamine	50	2	U	2	U	2	U	2	U	2	U
Pentachlorophenol	1	0.8	UJ	0.8	UJ	0.8	UJ	0.8	UJ	0.8	UJ
Phenanthrene	50	0.1	U	0.1	U	0.1	U	0.24	U	0.1	U
Phenol	1	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U
Pyrene	50	0.04	J	0.19	U	0.1	J	0.19		0.12	U

Notes provided on Page 4.

Table 3
Remedial Investigation Report
Phase II Groundwater Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC SGVs	LMW-1		LMW-2		LMW-3		LMW-4		LMW-4	
Sample ID		019_LMW-1		018_LMW-2		020_LMW-3		021_LMW-4		023_DUP-2	
Laboratory ID		L1923415-02		L1923415-01		L1923415-03		L1923415-04		L1923415-05	
Sample Date		6/3/2019		6/3/2019		6/3/2019		6/3/2019		6/3/2019	
Pesticides (µg/L)											
4,4'-DDD	0.3	NA		NA		NA		NA		NA	
4,4'-DDE	0.2	NA		NA		NA		NA		NA	
4,4'-DDT	0.2	NA		NA		NA		NA		NA	
Aldrin	0	NA		NA		NA		NA		NA	
Alpha BHC (Alpha Hexachlorocyclohexane)	0.01	NA		NA		NA		NA		NA	
Alpha Chlordane	~	NA		NA		NA		NA		NA	
Alpha Endosulfan	~	NA		NA		NA		NA		NA	
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	NA		NA		NA		NA		NA	
Beta Endosulfan	~	NA		NA		NA		NA		NA	
Chlordane (alpha and gamma)	0.05	NA		NA		NA		NA		NA	
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	NA		NA		NA		NA		NA	
Dieldrin	0.004	NA		NA		NA		NA		NA	
Endosulfan Sulfate	~	NA		NA		NA		NA		NA	
Endrin	0	NA		NA		NA		NA		NA	
Endrin Aldehyde	5	NA		NA		NA		NA		NA	
Endrin Ketone	5	NA		NA		NA		NA		NA	
Gamma Bhc (Lindane)	0.05	NA		NA		NA		NA		NA	
Gamma Chlordane	~	NA		NA		NA		NA		NA	
Heptachlor	0.04	NA		NA		NA		NA		NA	
Heptachlor Epoxide	0.03	NA		NA		NA		NA		NA	
Methoxychlor	35	NA		NA		NA		NA		NA	
Toxaphene	0.06	NA		NA		NA		NA		NA	
Herbicides (µg/L)											
2,4,5-T (Trichlorophenoxyacetic Acid)	35	NA		NA		NA		NA		NA	
2,4-D (Dichlorophenoxyacetic Acid)	50	NA		NA		NA		NA		NA	
Silvex (2,4,5-Tp)	0.26	NA		NA		NA		NA		NA	
Polychlorinated Biphenyls (µg/L)											
PCB-1016 (Aroclor 1016)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1221 (Aroclor 1221)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1232 (Aroclor 1232)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1242 (Aroclor 1242)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1248 (Aroclor 1248)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1254 (Aroclor 1254)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1260 (Aroclor 1260)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1262 (Aroclor 1262)	~	NA		0.083	U	0.083	U	NA		NA	
PCB-1268 (Aroclor 1268)	~	NA		0.083	U	0.083	U	NA		NA	
Total PCBs	0.09	NA		0.083	U	0.083	U	NA		NA	
Inorganics (µg/L)											
Aluminum	~	NA		NA		NA		NA		NA	
Aluminum (Dissolved)	~	NA		NA		NA		NA		NA	
Antimony	3	NA		NA		NA		NA		NA	
Antimony (Dissolved)	3	NA		NA		NA		NA		NA	
Arsenic	25	0.57		2.07		1.64		0.84		0.83	
Arsenic (Dissolved)	25	NA		NA		NA		NA		NA	
Barium	1,000	333.6		302.8		154.7		87.24		79.73	
Barium (Dissolved)	1,000	NA		NA		NA		NA		NA	
Beryllium	3	NA		NA		NA		NA		NA	
Beryllium (Dissolved)	3	NA		NA		NA		NA		NA	
Cadmium	5	0.2	U	0.2	U	0.2	U	0.53		0.51	
Cadmium (Dissolved)	5	NA		NA		NA		NA		NA	
Calcium	~	NA		NA		NA		NA		NA	
Calcium (Dissolved)	~	NA		NA		NA		NA		NA	
Chromium, Hexavalent	50	NA		NA		NA		NA		NA	
Chromium, Total	50	1	U	2.32	U	1	U	1.05	U	1	U
Chromium, Total (Dissolved)	50	NA		NA		NA		NA		NA	
Chromium, Trivalent	~	NA		NA		NA		NA		NA	
Cobalt	~	NA		NA		NA		NA		NA	
Cobalt (Dissolved)	~	NA		NA		NA		NA		NA	
Copper	200	NA		NA		NA		NA		NA	
Copper (Dissolved)	200	NA		NA		NA		NA		NA	
Iron	300	NA		NA		NA		NA		NA	
Iron (Dissolved)	300	NA		NA		NA		NA		NA	
Lead	25	5.6		**27.93**		3.19		5.62	J	4.2	J
Lead (Dissolved)	25	NA		NA		NA		NA		NA	
Magnesium	35,000	NA		NA		NA		NA		NA	
Magnesium (Dissolved)	35,000	NA		NA		NA		NA		NA	
Manganese	300	NA		NA		NA		NA		NA	
Manganese (Dissolved)	300	NA		NA		NA		NA		NA	
Mercury	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Mercury (Dissolved)	0.7	NA		NA		NA		NA		NA	
Nickel	100	NA		NA		NA		NA		NA	
Nickel (Dissolved)	100	NA		NA		NA		NA		NA	
Potassium	~	NA		NA		NA		NA		NA	
Potassium (Dissolved)	~	NA		NA		NA		NA		NA	
Selenium	10	5	U	5	U	5	U	5.52		5.34	
Selenium (Dissolved)	10	NA		NA		NA		NA		NA	
Silver	50	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Silver (Dissolved)	50	NA		NA		NA		NA		NA	
Sodium	20,000	NA		NA		NA		NA		NA	
Sodium (Dissolved)	20,000	NA		NA		NA		NA		NA	
Thallium	0.5	NA		NA		NA		NA		NA	
Thallium (Dissolved)	0.5	NA		NA		NA		NA		NA	
Vanadium	~	NA		NA		NA		NA		NA	
Vanadium (Dissolved)	~	NA		NA		NA		NA		NA	
Zinc	2,000	NA		NA		NA		NA		NA	
Zinc (Dissolved)	2,000	NA		NA		NA		NA		NA	

Notes provided on Page 4.

Table 3
Remedial Investigation Report
Phase II Groundwater Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

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 (herein collectively referenced as "NYSDEC SGVs").
2. Detected analytical results above NYSDEC SGVs are bolded and shaded.
3. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
4. Sample 074_DUP-1 is a duplicate sample of 073_LMW-1.
5. ~ = Regulatory limit for this analyte does not exist
6. µg/l = micrograms per liter
7. NA = Not analyzed

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 4
Remedial Investigation Report
Phase II Soil Vapor Sample Analytical Results Summary

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDOH Decision Matrices Minimum Concentrations**	**LSV-1**		**LSV-2**		**LSV-3**		**LSV-4**	
Sample ID		**025_LSV-1**		**026_LSV-2**		**027_LSV-3**		**028_LSV-4**	
Laboratory ID		**L1923449-01**		**L1923449-02**		**L1923449-03**		**L1923449-04**	
Sample Date		**6/3/2019**		**6/3/2019**		**6/3/2019**		**6/3/2019**	
Sample Depth (feet bgs)		**5**		**3**		**6**		**7**	
Sample Type		**SV**		**SV**		**SV**		**SV**	
Volatile Organic Compounds (µg/m³)									
1,1,1-Trichloroethane	100	2.22		1.09	U	1.09	U	5.46	U
1,1,2,2-Tetrachloroethane	~	1.37	U	1.37	U	1.37	U	6.87	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	1.53	U	1.53	U	1.53	U	7.66	U
1,1,2-Trichloroethane	~	1.09	U	1.09	U	1.09	U	5.46	U
1,1-Dichloroethane	~	0.809	U	0.809	U	0.809	U	4.05	U
1,1-Dichloroethene	6	0.793	U	0.793	U	0.793	U	3.96	U
1,2,4-Trichlorobenzene	~	1.48	U	1.48	U	1.48	U	7.42	U
1,2,4-Trimethylbenzene	~	13.6		13.9		14		17.9	
1,2-Dibromoethane (Ethylene Dibromide)	~	1.54	U	1.54	U	1.54	U	7.69	U
1,2-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	6.01	U
1,2-Dichloroethane	~	0.809	U	0.809	U	0.809	U	4.05	U
1,2-Dichloropropane	~	6.61		0.924	U	0.924	U	4.62	U
1,2-Dichlorotetrafluoroethane	~	1.4	U	1.4	U	1.4	U	6.99	U
1,3,5-Trimethylbenzene (Mesitylene)	~	3.75		3.5		3.56		4.92	U
1,3-Butadiene	~	0.442	U	0.442	U	0.442	U	2.21	U
1,3-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	6.01	U
1,4-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	6.01	U
1,4-Dioxane (P-Dioxane)	~	0.721	U	0.721	U	0.721	U	3.6	U
2,2,4-Trimethylpentane	~	0.934	U	0.934	U	2.9		285	
2-Hexanone	~	1.08		10		3.16		25.9	
4-Ethyltoluene	~	3.9		3.49		3.88		4.92	U
Acetone	~	36.1		162		96.7		530	
Allyl Chloride (3-Chloropropene)	~	0.626	U	0.626	U	0.626	U	3.13	U
Benzene	~	0.888		0.856		1.22		3.19	U
Benzyl Chloride	~	1.04	U	1.04	U	1.04	U	5.18	U
Bromodichloromethane	~	1.34	U	1.34	U	1.34	U	6.7	U
Bromoethene	~	0.874	U	0.874	U	0.874	U	4.37	U
Bromoform	~	2.07	U	2.07	U	2.07	U	10.3	U
Bromomethane	~	0.777	U	0.777	U	0.777	U	3.88	U
Carbon Disulfide	~	4.08		5.04		6.45		8.59	
Carbon Tetrachloride	6	1.26	U	1.26	U	1.26	U	*6.29*	U
Chlorobenzene	~	0.921	U	0.921	U	0.921	U	4.61	U
Chloroethane	~	0.528	U	0.528	U	0.528	U	2.64	U
Chloroform	~	3.47		6.74		1.85		4.88	U
Chloromethane	~	0.413	U	0.413	U	0.413	U	2.07	U
Cis-1,2-Dichloroethene	6	0.793	U	0.793	U	0.793	U	3.96	U
Cis-1,3-Dichloropropene	~	0.908	U	0.908	U	0.908	U	4.54	U
Cyclohexane	~	0.688	U	0.871		0.688	U	3.86	
Dibromochloromethane	~	1.7	U	1.7	U	1.7	U	8.52	U
Dichlorodifluoromethane	~	1.03		0.989	U	1.47		4.94	U
Ethanol	~	14.5	J	13.1	J	15	J	109	J
Ethyl Acetate	~	1.8	U	1.8	U	1.8	U	9.01	U
Ethylbenzene	~	5.73		3.6		5.86		5.47	
Hexachlorobutadiene	~	2.13	U	2.13	U	2.13	U	10.7	U
Isopropanol	~	1.23	U	1.23	U	7.64		6.15	U
M,P-Xylene	~	26.9		17.6		26.5		25.5	
Methyl Ethyl Ketone (2-Butanone)	~	4.31		27		22.2		92.3	
Methyl Isobutyl Ketone (4-Methyl-2-Pentan	~	2.05	U	2.05	U	2.05	U	10.2	U
Methylene Chloride	100	1.74	U	1.74	U	1.74	U	8.69	U
n-Heptane	~	4.03		3.02		3.71		9.1	
n-Hexane	~	1.47		1.74		1.82		24.7	
o-Xylene (1,2-Dimethylbenzene)	~	9.34		6.39		9.08		10.8	
Styrene	~	0.852	U	0.852	U	0.852	U	4.26	U
Tert-Butyl Alcohol	~	1.69		6.21		3		13.1	
Tert-Butyl Methyl Ether	~	0.721	U	0.721	U	0.721	U	1,130	
Tetrachloroethene (PCE)	100	**345**		**189**		**308**		**309**	
Tetrahydrofuran	~	1.47	U	1.55		1.47	U	7.37	U
Toluene	~	49.7		11		21.8		26.2	
Trans-1,2-Dichloroethene	~	0.793	U	0.793	U	0.793	U	3.96	U
Trans-1,3-Dichloropropene	~	0.908	U	0.908	U	0.908	U	4.54	U
Trichloroethene (TCE)	6	1.07	U	1.07	U	1.07	U	5.37	U
Trichlorofluoromethane	~	93.3		20.6		5.01		5.62	U
Vinyl Chloride	6	0.511	U	0.511	U	0.511	U	2.56	U

Notes:
1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Only detected analytes are shown in the table.
3. Detected analytical results above the minimum soil vapor concentrations recommending mitigation are bolded and shaded.
4. Analytical results with reporting limits (RL) above the minimum soil vapor concentrations recommending mitigation are italicized.
5. ~ = Regulatory limit for this analyte does not exist
6. ug/m3= micrograms per cubic meter
7. SV = Soil Vapor
8. bgs = below ground surface

Qualifiers:
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
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 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-36		LSB-36		LSB-37		LSB-37		LSB-38		LSB-38		LSB-39		LSB-39		LSB-39		LSB-40		LSB-40		LSB-40	
Sample ID				060_LSB-36_1.0-3.0		061_LSB-36_12.0-14.0		050_LSB-37_1.0-3.0		051_LSB-37_12.0-14.0		062_LSB-38_2.0-4.0		063_LSB-38_12.0-14.0		065_LSB-39_1.0-3.0		067_DUP-2		066_LSB-39_12.0-14.0		053_LSB-40_1.0-3.0		058_LSB-40_6.0-8.0		054_LSB-40_12.0-14.0	
Laboratory ID				L2035280-31		L2035280-32		L2035280-21		L2035280-22		L2035280-33		L2035280-34		L2035280-36		L2035280-38		L2035280-37		L2035280-24		L2035280-29		L2035280-25	
Sample Date				9/1/2020		9/1/2020		8/31/2020		8/31/2020		9/1/2020		9/1/2020		9/2/2020		9/2/2020		9/2/2020		8/31/2020		8/31/2020		8/31/2020	
Sample Depth (feet bgs)				1-3		12-14		1-3		12-14		2-4		12-14		1-3		1-3		12-14		1-3		6-8		12-14	
Volatile Organic Compounds (mg/kg)																											
1,1,1,2-Tetrachloroethane	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00072	UJ	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
1,1,1-Trichloroethane	0.68	500	0.68	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
1,1,2,2-Tetrachloroethane	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00072	UJ	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
1,1,2-Trichloroethane	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,1-Dichloroethane	0.27	240	0.27	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,1-Dichloroethene	0.33	500	0.33	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,1-Dichloropropene	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
1,2,3-Trichlorobenzene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2,3-Trichloropropane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2,4,5-Tetramethylbenzene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.00041	J	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2,4-Trichlorobenzene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2,4-Trimethylbenzene	3.6	190	3.6	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2-Dibromo-3-Chloropropane	~	~	~	0.0026	U	0.003	U	0.003	U	0.0026	U	0.0028	U	0.0026	U	0.0043	UJ	0.0049	U	0.0029	U	0.0036	U	0.003	U	0.0028	U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,2-Dichlorobenzene	1.1	500	1.1	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,2-Dichloroethane	0.02	30	0.02	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,2-Dichloropropane	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	8.4	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,3-Dichlorobenzene	2.4	280	2.4	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,3-Dichloropropane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,4-Dichlorobenzene	1.8	130	1.8	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,4-Diethyl Benzene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.069	UJ	0.079	UJ	0.081	UJ	0.071	UJ	0.075	UJ	0.069	UJ	*0.15*	UJ	*0.13*	UJ	0.077	UJ	0.096	UJ	0.08	UJ	0.075	UJ
2,2-Dichloropropane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
2-Chlorotoluene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
2-Hexanone	~	~	~	0.0087	U	0.0099	U	0.01	U	0.0088	U	0.0094	U	0.0086	U	0.014	UJ	0.016	U	0.0096	U	0.012	U	0.01	U	0.0094	U
4-Chlorotoluene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
4-Ethyltoluene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Acetone	0.05	500	0.05	0.0087	U	0.0077	J	0.01	U	0.0068	J	0.0094	U	0.018		0.014	J	0.016	UJ	0.028		0.012	U	0.01	U	0.0073	J
Acrylonitrile	~	~	~	0.0035	U	0.004	U	0.004	U	0.0035	U	0.0038	U	0.0034	U	0.0074	UJ	0.0065	U	0.0038	U	0.0048	U	0.004	U	0.0038	U
Benzene	0.06	44	0.06	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00039	J	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Bromobenzene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Bromochloromethane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Bromodichloromethane	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Bromoform	~	~	~	0.0035	U	0.004	U	0.004	UJ	0.0035	UJ	0.0038	U	0.0034	U	0.0057	UJ	0.0065	U	0.0038	U	0.0048	UJ	0.004	UJ	0.0038	UJ
Bromomethane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Carbon Disulfide	~	~	~	0.0087	U	0.0099	U	0.01	U	0.0088	U	0.0094	U	0.0086	U	0.018	UJ	0.016	U	0.0072	J	0.012	U	0.01	U	0.0094	U
Carbon Tetrachloride	0.76	22	0.76	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	UJ	0.0016	U	0.00096	UJ	0.0012	U	0.001	U	0.00094	U
Chlorobenzene	1.1	500	1.1	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00072	UJ	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Chloroethane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Chloroform	0.37	350	0.37	0.0013	U	0.0015	U	0.0015	U	0.0013	U	0.0014	U	0.0013	U	0.0028	U	0.0024	U	0.0014	U	0.0018	U	0.0015	U	0.0014	U
Chloromethane	~	~	~	0.0035	U	0.004	U	0.004	UJ	0.0035	UJ	0.0038	U	0.0034	U	0.0074	U	0.0065	U	0.0038	U	0.0048	UJ	0.004	UJ	0.0038	UJ
Cis-1,2-Dichloroethene	0.25	500	0.25	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Cis-1,3-Dichloropropene	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Cymene	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Dibromochloromethane	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Dibromomethane	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Dichlorodifluoromethane	~	~	~	0.0087	U	0.0099	U	0.01	UJ	0.0088	UJ	0.0094	U	0.0086	U	0.018	UJ	0.016	U	0.0096	UJ	0.012	UJ	0.01	UJ	0.0094	UJ
Diethyl Ether (Ethyl Ether)	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Ethylbenzene	1	390	1	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Hexachlorobutadiene	~	~	~	0.0035	U	0.004	U	0.004	U	0.0035	U	0.0038	U	0.0034	U	0.0074	UJ	0.0065	U	0.0038	U	0.0048	U	0.004	U	0.0038	U
Isopropylbenzene (Cumene)	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
M,P-Xylene	~	~	~	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.12	0.0087	U	0.0099	U	0.01	U	0.0088	U	0.0094	U	0.0086	U	0.018	UJ	0.016	U	0.0082	J	0.012	U	0.01	U	0.0094	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.0087	U	0.0099	U	0.01	U	0.0088	U	0.0094	U	0.0086	U	0.014	UJ	0.016	U	0.0096	U	0.012	U	0.01	U	0.0094	U
Methylene Chloride	0.05	500	0.05	0.0043	U	0.005	U	0.005	U	0.0044	U	0.0047	U	0.0043	U	0.0093	U	0.0082	U	0.0048	U	0.006	U	0.005	U	0.0047	U
Naphthalene	12	500	12	0.0035	U	0.004	U	0.004	U	0.0012	J	0.0038	U	0.0012	J	0.0057	UJ	0.0065	UJ	0.00096	J	0.0048	U	0.004	U	0.0038	U
n-Butylbenzene	12	500	12	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
n-Propylbenzene	3.9	500	3.9	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Sec-Butylbenzene	11	500	11	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Styrene	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
T-Butylbenzene	5.9	500	5.9	0.0017	U	0.002	U	0.002	U	0.0018	U	0.0019	U	0.0017	U	0.0029	UJ	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0019	U
Tert-Butyl Methyl Ether	0.93	500	0.93	0.0017	U	0.00046	J	0.002	U	0.0014	J	0.0019	U	0.0022		0.0037	U	0.0033	U	0.0019	U	0.0024	U	0.002	U	0.0011	J
Tetrachloroethene (PCE)	1.3	150	1.3	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00072	UJ	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Toluene	0.7	500	0.7	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Total Xylenes	0.26	500	1.6	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Total, 1,3-Dichloropropene (Cis And Trans)	~	~	~	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Trans-1,2-Dichloroethene	0.19	500	0.19	0.0013	U	0.0015	U	0.0015	U	0.0013	U	0.0014	U	0.0013	U	0.0028	U	0.0024	U	0.0014	U	0.0018	U	0.0015	U	0.0014	U
Trans-1,3-Dichloropropene	~	~	~	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0014	UJ	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U
Trans-1,4-Dichloro-2-Butene	~	~	~	0.0043	U	0.005	U	0.005	U	0.0044	U	0.0047	U	0.0043	U	0.0072	UJ	0.0082	U	0.0048	U	0.006	U	0.005	U	0.0047	U
Trichloroethene (TCE)	0.47	200	0.47	0.00043	U	0.0005	U	0.0005	U	0.00044	U	0.00047	U	0.00043	U	0.00093	U	0.00082	U	0.00048	U	0.0006	U	0.0005	U	0.00047	U
Trichlorofluoromethane	~	~	~	0.0035	U	0.004	U	0.004	U	0.0035	U	0.0038	U	0.0034	U	0.0074	UJ	0.0065	U	0.0038	UJ	0.0048	U	0.004	U	0.0038	U
Vinyl Acetate	~	~	~	0.0087	U	0.0099	U	0.01	U	0.0088	U	0.0094	U	0.0086	U	0.018	U	0.016	UJ	0.0096	U	0.012	U	0.01	U	0.0094	U
Vinyl Chloride	0.02	13	0.02	0.00087	U	0.00099	U	0.001	U	0.00088	U	0.00094	U	0.00086	U	0.0018	U	0.0016	U	0.00096	U	0.0012	U	0.001	U	0.00094	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-36 060_LSB-36_1.0-3.0 L2035280-31 9/1/2020 1-3		LSB-36 061_LSB-36_12.0-14.0 L2035280-32 9/1/2020 12-14		LSB-37 050_LSB-37_1.0-3.0 L2035280-21 8/31/2020 1-3		LSB-37 051_LSB-37_12.0-14.0 L2035280-22 8/31/2020 12-14		LSB-38 062_LSB-38_2.0-4.0 L2035280-33 9/1/2020 2-4		LSB-38 063_LSB-38_12.0-14.0 L2035280-34 9/1/2020 12-14		LSB-39 065_LSB-39_1.0-3.0 L2035280-36 9/2/2020 1-3		LSB-39 067_DUP-2 L2035280-38 9/2/2020 1-3		LSB-39 066_LSB-39_12.0-14.0 L2035280-37 9/2/2020 12-14		LSB-40 053_LSB-40_1.0-3.0 L2035280-24 8/31/2020 1-3		LSB-40 058_LSB-40_6.0-8.0 L2035280-29 8/31/2020 6-8		LSB-40 054_LSB-40_12.0-14.0 L2035280-25 8/31/2020 12-14	
Semivolatile Organic Compounds (mg/kg)																											
1,2,4,5-Tetrachlorobenzene	~	~	~	0.54	U	0.2	UJ	0.19	U	9.7	U	0.19	U	0.2	UJ	0.22	U	0.2	U	0.24	U	0.21	U	0.2	UJ	0.21	U
1,2,4-Trichlorobenzene	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
1,2-Dichlorobenzene	1.1	500	1.1	0.54	U	0.2	U	0.19	U	*9.7*	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
1,3-Dichlorobenzene	2.4	280	2.4	0.54	U	0.2	U	0.19	U	*9.7*	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
1,4-Dichlorobenzene	1.8	130	1.8	0.54	U	0.2	U	0.19	U	*9.7*	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.081	U	0.03	U	0.029	U	*1.4*	U	0.028	U	0.03	U	0.032	UJ	0.03	UJ	0.036	UJ	0.032	U	0.031	U	0.032	U
2,4,5-Trichlorophenol	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2,4,6-Trichlorophenol	~	~	~	0.32	U	0.12	U	0.12	U	5.8	U	0.11	U	0.12	U	0.13	U	0.12	U	0.14	U	0.13	U	0.12	U	0.13	U
2,4-Dichlorophenol	~	~	~	0.49	U	0.18	U	0.17	U	8.7	U	0.17	U	0.18	U	0.19	U	0.18	U	0.22	U	0.19	U	0.18	U	0.19	U
2,4-Dimethylphenol	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.1	J	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2,4-Dinitrophenol	~	~	~	2.6	U	0.96	UJ	0.92	U	47	U	0.9	U	0.96	UJ	1	U	0.96	U	1.2	U	1	U	0.98	UJ	1	U
2,4-Dinitrotoluene	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2,6-Dinitrotoluene	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2-Chloronaphthalene	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2-Chlorophenol	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2-Methylnaphthalene	~	~	~	0.36	J	0.24	U	0.23	U	75		0.39		0.74		0.076	J	0.11	J	0.14	J	0.025	J	0.077	J	1.3	
2-Methylphenol (o-Cresol)	0.33	500	0.33	*0.54*	U	0.2	U	0.19	U	*9.7*	U	0.044	J	0.086	J	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.046	J
2-Nitroaniline	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
2-Nitrophenol	~	~	~	1.2	U	0.43	UJ	0.41	U	21	U	0.41	U	0.43	UJ	0.47	UJ	0.43	UJ	0.52	UJ	0.46	U	0.44	UJ	0.45	U
3 & 4 Methylphenol (m&p Cresol)	0.33	500	0.33	*0.78*	U	**0.85**		0.28	U	**3.6**	J	0.22	J	0.32		0.059	J	0.29	U	0.12	J	0.3	U	0.29	U	0.16	J
3,3'-Dichlorobenzidine	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
3-Nitroaniline	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
4,6-Dinitro-2-Methylphenol	~	~	~	1.4	U	0.52	UJ	0.5	U	25	U	0.49	U	0.52	UJ	0.56	U	0.52	U	0.63	U	0.55	U	0.53	UJ	0.55	U
4-Bromophenyl Phenyl Ether	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
4-Chloro-3-Methylphenol	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
4-Chloroaniline	~	~	~	0.54	U	0.2	UJ	0.19	U	9.7	U	0.19	U	0.2	UJ	0.22	U	0.2	U	0.24	U	0.21	U	0.2	UJ	0.21	U
4-Chlorophenyl Phenyl Ether	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
4-Nitroaniline	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
4-Nitrophenol	~	~	~	0.76	U	0.28	UJ	0.27	U	14	U	0.26	U	0.28	UJ	0.3	U	0.28	U	0.34	U	0.3	U	0.28	UJ	0.29	U
Acenaphthene	20	500	98	0.86		0.041	J	0.033	J	**100**		0.59		1.4		0.087	J	0.3	J	0.12	J	0.17	U	0.031	J	4.5	
Acenaphthylene	100	500	107	0.77		0.16	U	0.03	J	44		6.2		0.28		1.3	J	0.12	J	0.2		0.044	J	0.19		0.16	J
Acetophenone	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.028	J	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Anthracene	100	500	1,000	2.2		0.1	J	0.14		**220**		5.9		2		0.7		0.55		0.36		0.056	J	0.28		8	
Benzo(a)anthracene	1	5.6	1	**6.2**		0.22		0.64		**200**		**19**		**3.6**		**2.6**	J	**1.4**	J	**1.1**		0.27		**1.8**		**8.3**	
Benzo(a)pyrene	1	1	22	**5.2**		0.21		0.68		**170**		**21**		**3.5**		**2.7**	J	**1.2**	J	**1.2**		0.3		**2.8**		**7.2**	
Benzo(b)fluoranthene	1	5.6	1.7	**6.7**		0.23		0.82		**180**		**24**		**4**		**3.9**	J	**1.6**	J	**1.6**		0.36		**3.1**		**8.1**	
Benzo(g,h,i)Perylene	100	500	1,000	4.2		0.11	J	0.48		79		13		1.9		2.4	J	0.89	J	0.74		0.24		1.9		4.7	
Benzo(k)fluoranthene	0.8	56	1.7	**2.4**		0.078	J	0.2		**64**		**5.2**		**1.3**		**0.93**	J	0.49	J	0.36		0.13		**0.92**		**2**	
Benzoic Acid	~	~	~	1.8	U	0.65	U	0.62	U	31	U	0.61	U	0.65	U	0.7	U	0.65	U	0.78	U	0.68	U	0.66	U	0.68	U
Benzyl Alcohol	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	UJ	0.2	UJ	0.24	UJ	0.21	U	0.2	U	0.21	U
Benzyl Butyl Phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Biphenyl (Diphenyl)	~	~	~	1.2	U	0.46	UJ	0.44	U	23		0.2	J	0.18	J	0.49	U	0.46	U	0.55	U	0.48	U	0.46	UJ	0.41	J
Bis(2-chloroethoxy) methane	~	~	~	0.58	U	0.22	U	0.21	U	10	U	0.2	U	0.22	U	0.23	U	0.22	U	0.26	U	0.23	U	0.22	U	0.23	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.49	U	0.18	U	0.17	U	8.7	U	0.17	U	0.18	U	0.19	U	0.18	U	0.22	U	0.19	U	0.18	U	0.19	U
Bis(2-chloroisopropyl) ether	~	~	~	0.65	U	0.24	UJ	0.23	U	12	U	0.23	U	0.24	UJ	0.26	U	0.24	U	0.29	U	0.25	U	0.24	UJ	0.25	U
Bis(2-ethylhexyl) phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Carbazole	~	~	~	1.2		0.032	J	0.032	J	81		1.1		1		0.3		0.26		0.14	J	0.031	J	0.052	J	2.7	
Chrysene	1	56	1	**6.2**		0.2		0.57		**170**		**21**		**3.7**		**2.6**	J	**1.2**	J	0.92		0.28		**1.7**		**6.7**	
Dibenz(a,h)anthracene	0.33	0.56	1,000	**1**		0.028	J	0.086	J	**22**		**2.5**		**0.46**		**0.47**	J	0.18	J	0.18		0.038	J	**0.34**		**0.92**	
Dibenzofuran	7	350	210	0.58		0.031	J	0.025	J	**110**		0.74		0.98		0.1	J	0.18	J	0.15	J	0.036	J	0.084	J	2.8	
Dibutyl phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Diethyl phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Dimethyl phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Dioctyl phthalate	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Fluoranthene	100	500	1,000	12		0.45		1.2		**570**		47		9.8		4.7		3		1.8		0.51		2.4		28	
Fluorene	30	500	386	0.91		0.045	J	0.023	J	**140**		1.5		1.3		0.16	J	0.21		0.17	J	0.029	J	0.03	J	4.3	
Hexachlorobenzene	0.33	6	3.2	0.32	U	0.12	U	0.12	U	*5.8*	U	0.11	U	0.12	U	0.13	U	0.12	U	0.14	U	0.13	U	0.12	U	0.13	U
Hexachlorobutadiene	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Hexachlorocyclopentadiene	~	~	~	1.5	U	0.57	U	0.55	U	28	U	0.54	U	0.57	U	0.62	U	0.57	U	0.69	U	0.6	U	0.58	U	0.6	U
Hexachloroethane	~	~	~	0.43	U	0.16	U	0.15	U	7.8	U	0.15	U	0.16	U	0.17	U	0.16	U	0.19	U	0.17	U	0.16	U	0.17	U
Indeno(1,2,3-cd)pyrene	0.5	5.6	8.2	**4**		0.11	J	0.46		**86**		**12**		**1.9**		**2.4**	J	**0.94**	J	**0.86**		0.2		**1.8**		**4.7**	
Isophorone	~	~	~	0.49	U	0.18	U	0.17	U	8.7	U	0.17	U	0.18	U	0.19	U	0.18	U	0.22	U	0.19	U	0.18	U	0.19	U
Naphthalene	12	500	12	0.56		0.087	J	0.072	J	**200**		1.1		2.1		0.2	J	0.27	J	0.85	J	0.17	J	0.45		2.8	
Nitrobenzene	~	~	~	0.49	U	0.18	UJ	0.17	U	8.7	U	0.17	U	0.18	UJ	0.19	U	0.18	U	0.22	U	0.19	U	0.18	UJ	0.19	U
n-Nitrosodi-N-Propylamine	~	~	~	0.54	U	0.2	U	0.19	U	9.7	U	0.19	U	0.2	U	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
n-Nitrosodiphenylamine	~	~	~	0.43	U	0.16	U	0.15	U	7.8	U	0.15	U	0.16	U	0.17	U	0.16	U	0.19	U	0.17	U	0.16	U	0.17	U
Pentachlorophenol	0.8	6.7	0.8	0.43	U	0.16	U	0.15	U	*7.8*	UJ	0.15	U	0.16	U	0.17	U	0.16	U	0.19	U	0.17	U	0.16	U	0.17	U
Phenanthrene	100	500	1,000	11		0.35		0.65		**810**		38		11		3		2.6	J	1.3	J	0.37		0.76		36	
Phenol	0.33	500	0.33	*0.54*	U	0.2	U	0.19	U	**2**	J	0.11	J	0.14	J	0.22	U	0.2	U	0.24	U	0.21	U	0.2	U	0.21	U
Pyrene	100	500	1,000	11		0.41		1.1		**500**		54		7.5		4.9	J	2.6	J	1.7		0.48		2.6		24	

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-36 060_LSB-36_1.0-3.0 L2035280-31 9/1/2020 1-3		LSB-36 061_LSB-36_12.0-14.0 L2035280-32 9/1/2020 12-14		LSB-37 050_LSB-37_1.0-3.0 L2035280-21 8/31/2020 1-3		LSB-37 051_LSB-37_12.0-14.0 L2035280-22 8/31/2020 12-14		LSB-38 062_LSB-38_2.0-4.0 L2035280-33 9/1/2020 2-4		LSB-38 063_LSB-38_12.0-14.0 L2035280-34 9/1/2020 12-14		LSB-39 065_LSB-39_1.0-3.0 L2035280-36 9/2/2020 1-3		LSB-39 067_DUP-2 L2035280-38 9/2/2020 1-3		LSB-39 066_LSB-39_12.0-14.0 L2035280-37 9/2/2020 12-14		LSB-40 053_LSB-40_1.0-3.0 L2035280-24 8/31/2020 1-3		LSB-40 058_LSB-40_6.0-8.0 L2035280-29 8/31/2020 6-8		LSB-40 054_LSB-40_12.0-14.0 L2035280-25 8/31/2020 12-14	
Pesticides (mg/kg)																											
4,4'-DDD	0.0033	92	14	0.00172	U	0.0019	U	0.00182	U	*0.00918*	U	0.00179	U	0.00187	U	**0.00971**	J	0.00118	J	**0.00692**	J	0.002	U	NA		0.00198	U
4,4'-DDE	0.0033	62	17	**0.00989**		0.0019	U	0.00182	U	*0.00918*	UJ	0.00179	U	0.00187	U	0.00202	U	0.000609	J	0.00224	U	0.002	U	NA		0.00198	U
4,4'-DDT	0.0033	47	136	**0.0372**		*0.00357*	U	*0.00342*	U	*0.0172*	U	*0.00336*	U	*0.00351*	U	*0.00378*	U	0.00274	J	*0.0042*	U	*0.00376*	U	NA		*0.00372*	U
Aldrin	0.005	0.68	0.19	0.00172	U	0.0019	U	0.00182	U	*0.00918*	U	0.00179	U	0.00187	U	0.00202	U	0.00191	U	0.00224	U	0.002	U	NA		0.00198	U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	3.4	0.02	0.000715	U	0.000793	U	0.00076	U	0.00382	U	0.000746	U	0.000781	U	0.000841	U	0.000796	U	0.000934	U	0.000835	U	NA		0.000826	U
Alpha Chlordane	0.094	24	2.9	0.0111		0.00238	U	0.00228	U	0.0115	U	0.00224	U	0.00234	U	0.00252	U	0.00239	U	0.0028	U	0.00251	U	NA		0.00248	U
Alpha Endosulfan	2.4	200	102	0.00172	U	0.0019	U	0.00182	U	0.00918	U	0.00179	U	0.00187	U	0.00202	U	0.00191	U	0.00224	U	0.002	U	NA		0.00198	U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	3	0.09	0.00172	U	0.0019	U	0.00182	U	0.00918	U	0.00179	U	0.00187	U	0.00202	U	0.00191	U	0.00224	U	0.002	U	NA		0.00198	U
Beta Endosulfan	2.4	200	102	0.00172	U	0.0019	U	0.00182	U	0.00918	U	0.00179	U	0.00187	U	0.00202	UJ	0.00191	UJ	0.00224	UJ	0.002	U	NA		0.00198	U
Chlordane (alpha and gamma)	~	~	~	0.102	J	0.0158	U	0.0152	U	0.0765	U	0.0149	U	0.0156	U	0.0168	U	0.0159	U	0.0187	U	0.0167	U	NA		0.0165	U
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	500	0.25	0.00172	U	0.0019	U	0.00182	U	0.00918	U	0.00179	U	0.00187	U	0.00202	U	0.00191	U	0.00224	U	0.002	U	NA		0.00198	U
Dieldrin	0.005	1.4	0.1	0.00107	U	0.00119	U	0.00114	U	*0.00574*	U	0.00112	U	0.00117	U	0.00126	U	0.00119	U	0.0014	U	0.00125	U	NA		0.00124	U
Endosulfan Sulfate	2.4	200	1000	0.000715	U	0.000793	U	0.00076	U	0.00382	U	0.000746	U	0.000781	U	0.000841	UJ	0.000796	UJ	0.000934	UJ	0.000835	U	NA		0.000826	U
Endrin	0.014	89	0.06	0.000715	U	0.000793	U	0.00076	U	0.00382	U	0.000746	U	0.000781	U	0.000841	U	0.000796	U	0.000934	U	0.000835	U	NA		0.000826	U
Endrin Aldehyde	~	~	~	0.00214	U	0.00238	U	0.00228	U	0.0115	U	0.00224	U	0.00234	U	0.00252	UJ	0.00239	UJ	0.0028	UJ	0.00251	U	NA		0.00248	U
Endrin Ketone	~	~	~	0.00172	U	0.0019	U	0.00182	U	0.00918	U	0.00179	U	0.00187	U	0.00202	UJ	0.00191	UJ	0.00224	UJ	0.002	U	NA		0.00198	U
Gamma Bhc (Lindane)	0.1	9.2	0.1	0.000715	U	0.000793	U	0.00076	U	0.00382	U	0.000746	U	0.000781	U	0.000841	U	0.000796	U	0.000934	U	0.000835	U	NA		0.000826	U
Gamma Chlordane	~	~	~	0.0101	J	0.00238	U	0.00106	J	0.0115	U	0.00224	U	0.00234	U	0.00252	U	0.00163	J	0.00293	J	0.00106	J	NA		0.00248	U
Heptachlor	0.042	15	0.38	0.000858	U	0.000951	U	0.000912	U	0.00459	U	0.000895	U	0.000937	U	0.00101	U	0.000956	U	0.00112	U	0.001	U	NA		0.000991	U
Heptachlor Epoxide	~	~	~	0.00241	J	0.00357	U	0.00342	U	0.0172	U	0.00336	U	0.00351	U	0.00378	U	0.00358	U	0.0042	U	0.00376	U	NA		0.00372	U
Methoxychlor	~	~	~	0.00322	U	0.00357	U	0.00342	U	0.0172	U	0.00336	U	0.00351	U	0.00378	UJ	0.00358	UJ	0.0042	UJ	0.00376	U	NA		0.00372	U
Toxaphene	~	~	~	0.0322	U	0.0357	U	0.0342	U	0.172	U	0.0336	U	0.0351	U	0.0378	U	0.0358	U	0.042	U	0.0376	U	NA		0.0372	U
Herbicides (mg/kg)																											
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	0.182	U	0.198	U	0.192	U	0.194	U	0.186	U	0.201	U	0.216	U	0.198	U	0.24	U	0.207	U	NA		0.207	U
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	0.182	UJ	0.198	UJ	0.192	U	0.194	U	0.186	U	0.201	U	0.216	U	0.198	U	0.24	U	0.207	U	NA		0.207	U
Silvex (2,4,5-Tp)	3.8	500	3.8	0.182	UJ	0.198	UJ	0.192	U	0.194	U	0.186	U	0.201	U	0.216	U	0.198	U	0.24	U	0.207	U	NA		0.207	U
Polychlorinated Biphenyls (mg/kg)																											
PCB-1016 (Aroclor 1016)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0373	U	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1221 (Aroclor 1221)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0373	U	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1232 (Aroclor 1232)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0373	U	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1242 (Aroclor 1242)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0373	U	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1248 (Aroclor 1248)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0379		0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1254 (Aroclor 1254)	~	~	~	0.0163	J	0.0386	U	0.0383	U	0.0391	U	0.0541		0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1260 (Aroclor 1260)	~	~	~	0.0174	J	0.0386	U	0.0383	U	0.0391	U	0.0123	J	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1262 (Aroclor 1262)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.0373	U	0.0387	U	0.0427	U	0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
PCB-1268 (Aroclor 1268)	~	~	~	0.0347	U	0.0386	U	0.0383	U	0.0391	U	0.00754	J	0.0387	U	0.0489		0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
Total PCBs	0.1	1	3.2	0.0337	J	0.0386	U	0.0383	U	0.0391	U	**0.112**	J	0.0387	U	0.0489		0.0401	U	0.0471	U	0.0408	U	0.0407	U	0.0416	U
Inorganics (mg/kg)																											
Aluminum	~	~	~	3,010		8,220		4,190		6,130		6,560		5,090		4,650		3,100	J	7,050	J	4,730		NA		7,780	
Antimony	~	~	~	4.46		4.77	U	4.55	U	4.56	U	4.35	U	4.58	U	0.766	J	0.902	J	5.67	U	5.65		NA		4.84	U
Arsenic	13	16	16	**23.7**		2.07		1.68		5		4.06		6.38		8.06		5.86	J	11.2	J	**51**		NA		4.23	
Barium	350	400	820	**586**		96.9		71.5		114		85.3		99.9		222		160	J	89.7	J	184		NA		132	
Beryllium	7.2	590	47	0.05	J	0.477	U	0.246	J	0.219	J	0.2	J	0.458	U	0.435	J	0.316	J	0.431	J	0.494		NA		0.164	J
Cadmium	2.5	9.3	7.5	1.52		0.258	J	0.182	J	0.21	J	0.296	J	0.32	J	1.01	J	0.929	U	1.13	U	0.997		NA		0.261	J
Calcium	~	~	~	27,400		2,140		11,200		5,110		6,880		18,500		12,300		7,110	J	19,900	J	5,300		NA		12,800	
Chromium, Hexavalent	1	400	19	0.883	U	0.977	U	0.93	U	0.954	U	0.906	UJ	0.972	U	*1.05*	U	0.967	U	*1.17*	U	*1.01*	U	NA		*1.01*	U
Chromium, Total	~	~	~	27.9		15.9		12.8		11		11.7		12.1		25	J	12.8	J	20.3		13.2		NA		17	
Chromium, Trivalent	30	1,500	~	28		16		13		11		12		12		25	J	13	J	20		13		NA		17	
Cobalt	~	~	~	7.09		11		5.5		6.46		5.7		6.25		6.54		4.87		7.78		7.35		NA		9.5	
Copper	50	270	1,720	**77.4**		25.8		17		17.7		25.7	J	31.9		**64.4**		47.2	J	**3,220**	J	**323**		NA		31.8	
Iron	~	~	~	39,600		18,600		10,400		14,100		13,000		13,500		10,500		8,530	J	19,000	J	27,200		NA		15,400	
Lead	63	1,000	450	**1,360**		**76.1**		47.9		**114**		**263**		**310**		**508**		**308**	J	**9,450**	J	**1,230**		NA		**234**	
Magnesium	~	~	~	1,770		4,420		5,200		2,330		2,580		3,180		1,900		1,320	J	5,030	J	1,480		NA		3,360	
Manganese	1,600	10,000	2,000	266		182		315		206		193		236		248		258		273		268		NA		237	
Mercury	0.18	2.8	0.73	**0.279**		**0.604**		0.154		**0.45**		**0.469**	J	**0.672**		**0.909**		**0.384**	J	**1.92**	J	**2.44**		NA		**0.355**	
Nickel	30	310	130	21.9		19.9		12.1		12.9		11.9		15.5		23.4		12.2	J	20.6	J	21.1		NA		16.8	
Potassium	~	~	~	555		5,220		913		1,110		770		1,330		805		554	J	1,650	J	819		NA		2,970	
Selenium	3.9	1,500	4	1.62	J	1.91	U	1.82	U	1.82	U	0.626	J	0.421	J	2.07	U	1.86	U	2.27	U	**25.2**		NA		1.94	U
Silver	2	1,500	8.3	0.282	J	0.954	U	0.91	U	0.911	U	0.87	U	0.916	U	0.569	J	0.409	J	**10.2**	J	1.39		NA		0.968	U
Sodium	~	~	~	508		207		182	U	182	U	174	U	183	U	482		356		150	J	476		NA		194	U
Thallium	~	~	~	1.66	U	1.91	U	1.82	U	1.82	U	1.74	U	1.83	U	2.07	U	1.86	U	2.27	U	1.97	U	NA		1.94	U
Vanadium	~	~	~	36.1		22.8		15		16.7		16.8		17.5		31.6	J	17.2	J	28.2		24.2		NA		26	
Zinc	109	10,000	2,480	**764**		58.7		65.4		53.5		99.1		**198**		**721**	J	**179**	J	**163**		**969**		NA		109	
General Chemistry (%)																											
Total Solids	~	~	~	90.6		81.9		86		83.9		88.3		82.3		76		82.7		68.3		78.9		81.1		79.1	

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-41 047_LSB-41_4.0-6.0 L2035280-18 8/31/2020 4-6		LSB-41 057_LSB-41_7.5-9.5 L2035280-28 8/31/2020 7.5-9.5		LSB-41 048_LSB-41_12.0-14.0 L2035280-19 8/31/2020 12-14		LSB-42 040_LSB-42_1.5-3.5 L2035280-11 8/28/2020 1.5-3.5		LSB-42 044_LSB-42_7.5-9.5 L2035280-15 8/28/2020 7.5-9.5		LSB-42 041_LSB-42_12.0-14.0 L2035280-12 8/28/2020 12-14		LSB-43 037_LSB-43_2.5-4.5 L2035280-08 8/28/2020 2.5-4.5		LSB-43 038_LSB-43_12.0-14.0 L2035280-09 8/28/2020 12-14		LSB-44 030_LSB-44_3.0-5.0 L2035280-01 8/27/2020 3-5		LSB-44 031_LSB-44_12.0-14.0 L2035280-02 8/27/2020 12-14		LSB-44 032_DUP-1 L2035280-03 8/27/2020 12-14	
Volatile Organic Compounds (mg/kg)																									
1,1,1,2-Tetrachloroethane	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
1,1,1-Trichloroethane	0.68	500	0.68	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
1,1,2,2-Tetrachloroethane	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
1,1,2-Trichloroethane	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,1-Dichloroethane	0.27	240	0.27	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,1-Dichloroethene	0.33	500	0.33	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,1-Dichloropropene	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
1,2,3-Trichlorobenzene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2,3-Trichloropropane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2,4,5-Tetramethylbenzene	~	~	~	0.0023	U	0.075	J	0.0023	U	0.003	U	5.2		0.56		0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2,4-Trichlorobenzene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2,4-Trimethylbenzene	3.6	190	3.6	0.0023	U	0.0014	J	0.0023	U	0.003	U	0.14	U	0.024	J	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2-Dibromo-3-Chloropropane	~	~	~	0.0034	U	0.0034	U	0.0034	U	0.0045	U	0.21	U	0.16	U	0.0041	U	0.0034	U	0.0032	U	0.0032	U	0.0034	U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,2-Dichlorobenzene	1.1	500	1.1	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.01	J	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,2-Dichloroethane	0.02	30	0.02	0.0011	U	0.0011	U	0.0011	U	0.0015	U	*0.07*	U	*0.053*	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,2-Dichloropropane	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	8.4	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,3-Dichlorobenzene	2.4	280	2.4	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,3-Dichloropropane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,4-Dichlorobenzene	1.8	130	1.8	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,4-Diethyl Benzene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	1.3		0.16		0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.09	UJ	0.091	UJ	0.091	UJ	*0.12*	UJ	*5.6*	UJ	*4.2*	UJ	*0.11*	UJ	0.09	UJ	0.087	UJ	0.085	UJ	0.091	UJ
2,2-Dichloropropane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
2-Chlorotoluene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
2-Hexanone	~	~	~	0.011	U	0.011	U	0.011	U	0.015	U	0.7	U	0.53	U	0.014	U	0.011	U	0.011	U	0.01	U	0.011	U
4-Chlorotoluene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
4-Ethyltoluene	~	~	~	0.0023	U	0.0008	J	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Acetone	0.05	500	0.05	0.011	U	0.018	J	0.0093	J	0.015	U	*0.7*	U	0.018		0.014	U	0.018		0.011	U	0.013		0.014	
Acrylonitrile	~	~	~	0.0045	U	0.0046	U	0.0046	U	0.006	U	0.28	U	0.21	U	0.0054	U	0.0045	U	0.0043	U	0.0042	U	0.0046	U
Benzene	0.06	44	0.06	0.00056	U	0.00057	U	0.00057	U	0.001		0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Bromobenzene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Bromochloromethane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Bromodichloromethane	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	UJ	0.00053	UJ	0.00057	UJ
Bromoform	~	~	~	0.0045	U	0.0046	UJ	0.0046	UJ	0.006	U	0.28	U	0.21	UJ	0.0054	UJ	0.0045	U	0.0043	UJ	0.0042	UJ	0.0046	UJ
Bromomethane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Carbon Disulfide	~	~	~	0.011	U	0.011	U	0.011	U	0.015	U	0.7	U	0.53	U	0.014	U	0.011	U	0.011	UJ	0.01	UJ	0.011	UJ
Carbon Tetrachloride	0.76	22	0.76	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	UJ	0.001	UJ	0.0011	UJ
Chlorobenzene	1.1	500	1.1	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Chloroethane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Chloroform	0.37	350	0.37	0.0017	U	0.0017	U	0.0017	U	0.0023	U	0.1	U	0.079	U	0.002	U	0.0017	U	0.0016	U	0.0016	U	0.0017	U
Chloromethane	~	~	~	0.0045	U	0.0046	UJ	0.0046	UJ	0.006	U	0.28	U	0.21	UJ	0.0054	UJ	0.0045	U	0.0043	U	0.0042	U	0.0046	U
Cis-1,2-Dichloroethene	0.25	500	0.25	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Cis-1,3-Dichloropropene	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Cymene	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.0062	J	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Dibromochloromethane	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	UJ	0.001	UJ	0.0011	UJ
Dibromomethane	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Dichlorodifluoromethane	~	~	~	0.011	U	0.011	UJ	0.011	UJ	0.015	U	0.7	U	0.53	UJ	0.014	UJ	0.011	U	0.011	U	0.01	U	0.011	U
Diethyl Ether (Ethyl Ether)	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Ethylbenzene	1	390	1	0.0011	U	0.00027	J	0.0011	U	0.0015	U	0.029	J	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Hexachlorobutadiene	~	~	~	0.0045	U	0.0046	U	0.0046	U	0.006	U	0.28	U	0.21	U	0.0054	U	0.0045	U	0.0043	U	0.0042	U	0.0046	U
Isopropylbenzene (Cumene)	~	~	~	0.0011	U	0.037	J	0.0011	U	0.0015	U	1		0.1		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
M,P-Xylene	~	~	~	0.0023	U	0.0023	U	0.0023	U	0.003	U	0.14	U	0.1	U	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.12	0.011	U	0.011	U	0.011	U	0.015	U	*0.7*	U	*0.53*	U	0.014	U	0.0051	J	0.011	U	0.01	U	0.011	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.011	U	0.011	U	0.011	U	0.015	U	0.7	U	0.53	U	0.014	U	0.011	U	0.011	U	0.01	U	0.011	U
Methylene Chloride	0.05	500	0.05	0.0056	U	0.0057	U	0.0057	U	0.0075	U	*0.35*	U	*0.26*	U	0.0068	U	0.0056	U	0.0054	U	0.0053	U	0.0057	U
Naphthalene	12	500	12	0.0045	U	0.0031	J	0.0046	U	0.006	U	0.28	U	0.21	U	0.0054	U	0.00084	J	0.0043	U	0.0042	U	0.0046	U
n-Butylbenzene	12	500	12	0.0011	U	0.011	J	0.0011	U	0.0015	U	1.5		0.18		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
n-Propylbenzene	3.9	500	3.9	0.0011	U	0.0028	J	0.0011	U	0.0015	U	1.8		0.12		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0011	U	0.00043	J	0.0011	U	0.0015	U	0.15		0.0014		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Sec-Butylbenzene	11	500	11	0.0011	U	0.073	J	0.0011	U	0.0015	U	1.3		0.15		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Styrene	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
T-Butylbenzene	5.9	500	5.9	0.0023	U	0.0053	J	0.0023	U	0.003	U	0.12	J	0.0083	J	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Tert-Butyl Methyl Ether	0.93	500	0.93	0.0023	U	0.0023	U	0.00081	J	0.003	U	0.14	U	0.00055	J	0.0027	U	0.0022	U	0.0022	U	0.0021	U	0.0023	U
Tetrachloroethene (PCE)	1.3	150	1.3	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.017	J	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Toluene	0.7	500	0.7	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Total Xylenes	0.26	500	1.6	0.0011	U	0.00043	J	0.0011	U	0.0015	U	0.15		0.0014		0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Total, 1,3-Dichloropropene (Cis And Trans)	~	~	~	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Trans-1,2-Dichloroethene	0.19	500	0.19	0.0017	U	0.0017	U	0.0017	U	0.0023	U	0.1	U	0.079	U	0.002	U	0.0017	U	0.0016	U	0.0016	U	0.0017	U
Trans-1,3-Dichloropropene	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0015	U	0.07	U	0.053	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U
Trans-1,4-Dichloro-2-Butene	~	~	~	0.0056	U	0.0057	U	0.0057	U	0.0075	U	0.35	U	0.26	U	0.0068	U	0.0056	U	0.0054	U	0.0053	U	0.0057	U
Trichloroethene (TCE)	0.47	200	0.47	0.00056	U	0.00057	U	0.00057	U	0.00075	U	0.035	U	0.026	U	0.00068	U	0.00056	U	0.00054	U	0.00053	U	0.00057	U
Trichlorofluoromethane	~	~	~	0.0045	U	0.0046	U	0.0046	U	0.006	U	0.28	U	0.21	U	0.0054	U	0.0045	U	0.0043	UJ	0.0042	UJ	0.0046	UJ
Vinyl Acetate	~	~	~	0.011	U	0.011	U	0.011	U	0.015	U	0.7	U	0.53	U	0.014	U	0.011	U	0.011	U	0.01	U	0.011	U
Vinyl Chloride	0.02	13	0.02	0.0011	U	0.0011	U	0.0011	U	0.0015	U	*0.07*	U	*0.053*	U	0.0014	U	0.0011	U	0.0011	U	0.001	U	0.0011	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-41		LSB-41		LSB-41		LSB-42		LSB-42		LSB-42		LSB-43		LSB-43		LSB-44		LSB-44		LSB-44	
Sample ID				047_LSB-41_4.0-6.0		057_LSB-41_7.5-9.5		048_LSB-41_12.0-14.0		040_LSB-42_1.5-3.5		044_LSB-42_7.5-9.5		041_LSB-42_12.0-14.0		037_LSB-43_2.5-4.5		038_LSB-43_12.0-14.0		030_LSB-44_3.0-5.0		031_LSB-44_12.0-14.0		032_DUP-1	
Laboratory ID				L2035280-18		L2035280-28		L2035280-19		L2035280-11		L2035280-15		L2035280-12		L2035280-08		L2035280-09		L2035280-01		L2035280-02		L2035280-03	
Sample Date				8/31/2020		8/31/2020		8/31/2020		8/28/2020		8/28/2020		8/28/2020		8/28/2020		8/28/2020		8/27/2020		8/27/2020		8/27/2020	
Sample Depth (feet bgs)				4-6		7.5-9.5		12-14		1.5-3.5		7.5-9.5		12-14		2.5-4.5		12-14		3-5		12-14		12-14	
Semivolatile Organic Compounds (mg/kg)																									
1,2,4,5-Tetrachlorobenzene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
1,2,4-Trichlorobenzene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.024	J	0.2	U	0.22	U
1,2-Dichlorobenzene	1.1	500	1.1	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
1,3-Dichlorobenzene	2.4	280	2.4	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
1,4-Dichlorobenzene	1.8	130	1.8	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.031	UJ	*0.15*	U	0.037	U	*0.15*	U	*0.15*	U	0.029	U	0.027	U	*0.17*	U	0.027	U	0.03	U	0.033	U
2,4,5-Trichlorophenol	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2,4,6-Trichlorophenol	~	~	~	0.12	U	0.6	U	0.15	U	0.61	U	0.6	U	0.12	U	0.11	U	0.67	U	0.11	U	0.12	U	0.13	U
2,4-Dichlorophenol	~	~	~	0.19	U	0.9	U	0.22	U	0.91	U	0.9	U	0.18	U	0.16	U	1	U	0.16	U	0.18	U	0.2	U
2,4-Dimethylphenol	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2,4-Dinitrophenol	~	~	~	1	U	4.8	U	1.2	U	4.8	U	4.8	U	0.94	UJ	0.86	UJ	5.4	U	0.86	U	0.97	U	1	U
2,4-Dinitrotoluene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2,6-Dinitrotoluene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2-Chloronaphthalene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2-Chlorophenol	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2-Methylnaphthalene	~	~	~	0.21	J	0.18	J	0.3	U	2.5		6.5		0.73		0.21	U	0.76	J	0.035	J	0.24	U	0.26	U
2-Methylphenol (o-Cresol)	0.33	500	0.33	0.21	U	*1*	U	0.25	U	*1*	U	*1*	U	0.2	U	0.18	U	*1.1*	U	0.18	U	0.2	U	0.22	U
2-Nitroaniline	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
2-Nitrophenol	~	~	~	0.45	UJ	2.2	U	0.53	U	2.2	U	2.2	U	0.42	U	0.39	U	2.4	U	0.39	U	0.44	U	0.48	U
3 & 4 Methylphenol (m&p Cresol)	0.33	500	0.33	0.036	J	*1.4*	U	0.12	J	*1.4*	U	*1.4*	U	0.071	J	0.26	U	**0.46**	J	0.26	U	0.09	J	0.32	U
3,3'-Dichlorobenzidine	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
3-Nitroaniline	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4,6-Dinitro-2-Methylphenol	~	~	~	0.54	U	2.6	U	0.64	U	2.6	U	2.6	U	0.51	U	0.46	U	2.9	U	0.47	U	0.52	U	0.57	U
4-Bromophenyl Phenyl Ether	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4-Chloro-3-Methylphenol	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4-Chloroaniline	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4-Chlorophenyl Phenyl Ether	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4-Nitroaniline	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
4-Nitrophenol	~	~	~	0.29	UJ	1.4	U	0.34	U	1.4	U	1.4	U	0.27	UJ	0.25	UJ	1.6	U	0.25	U	0.28	U	0.31	U
Acenaphthene	20	500	98	0.036	J	0.65	J	0.032	J	0.81	U	1.3		0.25		0.14	U	0.81	J	0.14	U	0.032	J	0.18	U
Acenaphthylene	100	500	107	0.79		0.8	U	0.085	J	0.81	U	0.8	U	0.16	U	0.13	J	0.9	U	0.14	U	0.16	U	0.18	U
Acetophenone	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Anthracene	100	500	1,000	0.53		0.51	J	0.11	J	0.61	U	0.98		0.19		0.087	J	2.3		0.11	U	0.072	J	0.13	U
Benzo(a)anthracene	1	5.6	1	0.86		0.54	J	0.52		0.3	J	**1.1**		0.25		0.16		**8.3**		0.16		0.22		0.052	J
Benzo(a)pyrene	1	1	22	**1.3**		0.37	J	0.57		0.81	U	0.6	J	0.23		0.24		**7.6**		0.29		0.22		0.18	U
Benzo(b)fluoranthene	1	5.6	1.7	**1.9**		0.31	J	0.66		0.53	J	0.53	J	0.22		0.3		**8.2**		0.32		0.25		0.048	J
Benzo(g,h,i)Perylene	100	500	1,000	1.6		0.27	J	0.34		0.27	J	0.41	J	0.13	J	0.29		5.1		0.25		0.12	J	0.029	J
Benzo(k)fluoranthene	0.8	56	1.7	0.52		0.6	U	0.22		0.61	U	0.6	U	0.057	J	0.09	J	**2.4**		0.12		0.11	J	0.13	U
Benzoic Acid	~	~	~	0.67	U	3.2	U	0.8	U	3.3	U	3.2	U	0.64	U	0.58	U	3.6	U	0.58	U	0.65	U	0.71	U
Benzyl Alcohol	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Benzyl Butyl Phthalate	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Biphenyl (Diphenyl)	~	~	~	0.063	J	2.3	U	0.56	U	0.9	J	2.3	U	0.45	U	0.41	U	2.6	U	0.41	U	0.46	U	0.5	U
Bis(2-chloroethoxy) methane	~	~	~	0.22	U	1.1	U	0.27	U	1.1	U	1.1	U	0.21	U	0.19	U	1.2	U	0.19	U	0.22	U	0.24	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.19	U	0.9	U	0.22	U	0.91	U	0.9	U	0.18	U	0.16	U	1	U	0.16	U	0.18	U	0.2	U
Bis(2-chloroisopropyl) ether	~	~	~	0.25	U	1.2	U	0.3	U	1.2	U	1.2	U	0.24	UJ	0.21	UJ	1.3	U	0.22	U	0.24	U	0.26	U
Bis(2-ethylhexyl) phthalate	~	~	~	0.21	U	1	U	0.25	U	25		1.7		0.12	J	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Carbazole	~	~	~	0.17	J	1	U	0.25	U	1	U	1	U	0.085	J	0.024	J	0.58	J	0.18	U	0.024	J	0.22	U
Chrysene	1	56	1	0.92		0.9		0.45		**1.6**		**1.8**		0.39		0.16		**7.1**		0.19		0.22		0.048	J
Dibenz(a,h)anthracene	0.33	0.56	1,000	0.32		*0.6*	U	0.082	J	0.12	J	*0.6*	U	0.038	J	0.052	J	**0.98**		0.047	J	0.12	U	0.13	U
Dibenzofuran	7	350	210	0.14	J	0.27	J	0.027	J	0.22	J	1	U	0.054	J	0.18	U	1.1		0.036	J	0.019	J	0.22	U
Dibutyl phthalate	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Diethyl phthalate	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Dimethyl phthalate	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Dioctyl phthalate	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Fluoranthene	100	500	1,000	1.1		0.38	J	0.61		0.7		0.88		0.57		0.23		20		0.19		0.48	J	0.095	J
Fluorene	30	500	386	0.076	J	1.1		0.052	J	0.21	J	2.7		0.3		0.18	U	1.2		0.18	U	0.031	J	0.22	U
Hexachlorobenzene	0.33	6	3.2	0.12	UJ	*0.6*	U	0.15	U	*0.61*	U	*0.6*	U	0.12	U	0.11	U	*0.67*	U	0.11	U	0.12	U	0.13	U
Hexachlorobutadiene	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
Hexachlorocyclopentadiene	~	~	~	0.59	U	2.8	U	0.71	U	2.9	U	2.9	U	0.56	UJ	0.51	UJ	3.2	U	0.51	U	0.58	U	0.63	U
Hexachloroethane	~	~	~	0.17	U	0.8	U	0.2	U	0.81	U	0.8	U	0.16	U	0.14	U	0.9	U	0.14	U	0.16	U	0.18	U
Indeno(1,2,3-cd)pyrene	0.5	5.6	8.2	**1.4**		0.16	J	0.34		0.18	J	0.19	J	0.096	J	0.21		**4.8**		0.25		0.13	J	0.18	U
Isophorone	~	~	~	0.19	U	0.9	U	0.22	U	0.91	U	0.9	U	0.18	U	0.16	U	1	U	0.16	U	0.18	U	0.2	U
Naphthalene	12	500	12	0.32		1	U	0.087	J	0.86	J	1	U	0.37		0.11	J	4.6		0.21		0.068	J	0.037	J
Nitrobenzene	~	~	~	0.19	UJ	0.9	U	0.22	U	0.91	U	0.9	U	0.18	U	0.16	U	1	U	0.16	U	0.18	U	0.2	U
n-Nitrosodi-N-Propylamine	~	~	~	0.21	U	1	U	0.25	U	1	U	1	U	0.2	U	0.18	U	1.1	U	0.18	U	0.2	U	0.22	U
n-Nitrosodiphenylamine	~	~	~	0.17	U	0.8	U	0.2	U	0.81	U	0.8	U	0.16	U	0.14	U	0.9	U	0.14	U	0.16	U	0.18	U
Pentachlorophenol	0.8	6.7	0.8	0.17	UJ	0.8	U	0.2	U	*0.81*	U	0.8	U	0.16	U	0.14	U	*0.9*	U	0.14	U	0.16	U	0.18	U
Phenanthrene	100	500	1,000	0.53		0.6	U	0.3		2.4		4.4		1.2		0.11		4.4		0.12		0.34	J	0.062	J
Phenol	0.33	500	0.33	0.21	U	*1*	U	0.25	U	*1*	U	*1*	U	0.2	U	0.18	U	*1.1*	U	0.18	U	0.2	U	0.22	U
Pyrene	100	500	1,000	1		1.2		0.65		0.92		2.7		0.82		0.22		18		0.17		0.43	J	0.083	J

Notes provided on Page 10.

Concentrations above Unrestricted Use SCOs are bolded.

Concentrations above Restricted Use Commercial SCOs are shaded.

Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Commercial SCOs**	**NYSDEC Part 375 Protection of Groundwater SCOs**	**LSB-41**		**LSB-41**		**LSB-41**		**LSB-42**		**LSB-42**		**LSB-42**		**LSB-43**		**LSB-43**		**LSB-44**		**LSB-44**		**LSB-44**	
Sample ID				**047_LSB-41_4.0-6.0**		**057_LSB-41_7.5-9.5**		**048_LSB-41_12.0-14.0**		**040_LSB-42_1.5-3.5**		**044_LSB-42_7.5-9.5**		**041_LSB-42_12.0-14.0**		**037_LSB-43_2.5-4.5**		**038_LSB-43_12.0-14.0**		**030_LSB-44_3.0-5.0**		**031_LSB-44_12.0-14.0**		**032_DUP-1**	
Laboratory ID				**L2035280-18**		**L2035280-28**		**L2035280-19**		**L2035280-11**		**L2035280-15**		**L2035280-12**		**L2035280-08**		**L2035280-09**		**L2035280-01**		**L2035280-02**		**L2035280-03**	
Sample Date				**8/31/2020**		**8/31/2020**		**8/31/2020**		**8/28/2020**		**8/28/2020**		**8/28/2020**		**8/28/2020**		**8/28/2020**		**8/27/2020**		**8/27/2020**		**8/27/2020**	
Sample Depth (feet bgs)				**4-6**		**7.5-9.5**		**12-14**		**1.5-3.5**		**7.5-9.5**		**12-14**		**2.5-4.5**		**12-14**		**3-5**		**12-14**		**12-14**	
Pesticides (mg/kg)																									
4,4'-DDD	0.0033	92	14	0.00192	U	NA		*0.0242*	U	0.00191	U	NA		*0.0187*	U	0.00164	U	*0.0211*	U	0.00168	U	0.00192	UJ	0.0021	UJ
4,4'-DDE	0.0033	62	17	0.000585	J	NA		*0.0242*	UJ	**0.0118**		NA		*0.0187*	U	0.0023		*0.0211*	U	0.00168	U	0.00192	UJ	0.0021	UJ
4,4'-DDT	0.0033	47	136	0.002	J	NA		*0.0454*	U	**0.0232**		NA		*0.0351*	U	**0.00692**	J	*0.0396*	U	0.00316	U	*0.0036*	UJ	*0.00394*	UJ
Aldrin	0.005	0.68	0.19	0.00192	U	NA		*0.0242*	U	0.00191	U	NA		*0.0187*	U	0.00164	U	*0.0211*	U	0.00168	U	0.00192	UJ	0.0021	UJ
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	3.4	0.02	0.000801	U	NA		0.0101	U	0.000797	U	NA		0.0078	U	0.000684	U	0.0088	U	0.000701	U	0.0008	UJ	0.000875	UJ
Alpha Chlordane	0.094	24	2.9	0.0024	U	NA		0.0302	U	0.00263		NA		0.0234	U	0.00133	J	0.0264	U	0.0021	U	0.0024	UJ	0.00262	UJ
Alpha Endosulfan	2.4	200	102	0.00192	U	NA		0.0242	U	0.00191	U	NA		0.0187	U	0.00164	U	0.0211	U	0.00168	U	0.00192	UJ	0.0021	UJ
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	3	0.09	0.00192	U	NA		0.0242	U	0.00191	U	NA		0.0187	U	0.00164	U	0.0211	U	0.00168	U	0.00192	UJ	0.0021	UJ
Beta Endosulfan	2.4	200	102	0.00192	U	NA		0.0242	U	0.00191	U	NA		0.0187	U	0.00164	U	0.0211	U	0.00168	U	0.00192	UJ	0.0021	UJ
Chlordane (alpha and gamma)	~	~	~	0.016	U	NA		0.202	U	0.0159	U	NA		0.156	U	0.0137	U	0.176	U	0.014	U	0.016	UJ	0.0175	UJ
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	500	0.25	0.00192	U	NA		0.0242	U	0.00191	U	NA		0.0187	U	0.00164	U	0.0211	U	0.00168	U	0.00192	UJ	0.0021	UJ
Dieldrin	0.005	1.4	0.1	0.0012	U	NA		*0.0151*	U	0.0012	U	NA		*0.0117*	U	0.00102	U	*0.0132*	U	0.00105	U	0.0012	UJ	0.00131	UJ
Endosulfan Sulfate	2.4	200	1000	0.000801	U	NA		0.0101	U	0.000797	U	NA		0.0078	U	0.000684	U	0.0088	U	0.000701	U	0.0008	UJ	0.000875	UJ
Endrin	0.014	89	0.06	0.000801	U	NA		0.0101	U	0.000797	U	NA		0.0078	U	0.000684	U	0.0088	U	0.000701	U	0.0008	UJ	0.000875	UJ
Endrin Aldehyde	~	~	~	0.0024	U	NA		0.0302	U	0.00239	U	NA		0.0234	U	0.00205	U	0.0264	U	0.0021	U	0.0024	UJ	0.00262	UJ
Endrin Ketone	~	~	~	0.00192	U	NA		0.0242	U	0.00191	U	NA		0.0187	U	0.00164	U	0.0211	U	0.00168	U	0.00192	UJ	0.0021	UJ
Gamma Bhc (Lindane)	0.1	9.2	0.1	0.000801	U	NA		0.0101	U	0.000797	U	NA		0.0078	U	0.000684	U	0.0088	U	0.000701	U	0.0008	UJ	0.000875	UJ
Gamma Chlordane	~	~	~	0.00129	J	NA		0.0302	U	0.00288	J	NA		0.0234	U	0.00129	J	0.0264	U	0.0021	U	0.0024	UJ	0.00262	UJ
Heptachlor	0.042	15	0.38	0.000962	U	NA		0.0121	U	0.000957	U	NA		0.00936	U	0.000821	U	0.0106	U	0.000842	U	0.00096	UJ	0.00105	UJ
Heptachlor Epoxide	~	~	~	0.0036	U	NA		0.0454	U	0.00359	U	NA		0.0351	U	0.00308	U	0.0396	U	0.00316	U	0.0036	UJ	0.00394	UJ
Methoxychlor	~	~	~	0.0036	U	NA		0.0454	U	0.00359	U	NA		0.0351	U	0.00308	U	0.0396	U	0.00316	U	0.0036	UJ	0.00394	UJ
Toxaphene	~	~	~	0.036	U	NA		0.454	U	0.0359	U	NA		0.351	U	0.0308	U	0.396	U	0.0316	U	0.036	UJ	0.0394	UJ
Herbicides (mg/kg)																									
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	0.204	U	NA		0.252	U	2.02	U	NA		0.196	U	0.178	U	0.224	U	0.181	U	0.202	U	0.224	U
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	0.204	U	NA		0.252	U	2.02	U	NA		0.196	U	0.178	U	0.224	U	0.181	U	0.202	U	0.224	U
Silvex (2,4,5-Tp)	3.8	500	3.8	0.204	U	NA		0.252	U	2.02	U	NA		0.196	U	0.178	U	0.224	U	0.181	U	0.202	U	0.224	U
Polychlorinated Biphenyls (mg/kg)																									
PCB-1016 (Aroclor 1016)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1221 (Aroclor 1221)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1232 (Aroclor 1232)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1242 (Aroclor 1242)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1248 (Aroclor 1248)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1254 (Aroclor 1254)	~	~	~	0.0411	U	0.0402	U	0.00861	J	0.0405	U	0.00632	J	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1260 (Aroclor 1260)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0623		0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1262 (Aroclor 1262)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
PCB-1268 (Aroclor 1268)	~	~	~	0.0411	U	0.0402	U	0.05	U	0.0405	U	0.0384	U	0.0391	U	0.0352	U	0.0449	U	0.0367	U	0.0391	U	0.0442	U
Total PCBs	0.1	1	3.2	0.0411	U	0.0402	U	0.00861	J	0.0405	U	0.00632	J	0.0391	U	0.0623		0.0449	U	0.0367	U	0.0391	U	0.0442	U
Inorganics (mg/kg)																									
Aluminum	~	~	~	7,020	J	NA		4,790		6,900		NA		4,660		5,910		5,090		5,880		8,200		6,800	
Antimony	~	~	~	4.73	U	NA		6.06	U	2.68	J	NA		0.504	J	4.25	U	1.4	J	0.378	J	4.86	U	0.96	J
Arsenic	13	16	16	4.47	J	NA		**15.5**		8.65		NA		2.2		3		1.18		4.91		6.59		5.97	
Barium	350	400	820	145	J	NA		106		128		NA		44.2		82.9		69.7		161		64.3		89.1	
Beryllium	7.2	590	47	0.416	J	NA		0.376	J	0.436	J	NA		0.171	J	0.204	J	0.264	J	0.344	J	0.34	J	0.264	J
Cadmium	2.5	9.3	7.5	0.984		NA		**21**		**4.34**		NA		0.207	J	0.264	J	0.126	J	0.344	J	0.194	J	0.221	J
Calcium	~	~	~	26,500	J	NA		12,800		30,100		NA		5,340		16,500		3,220		7,120		6,180	J	11,300	J
Chromium, Hexavalent	1	400	19	1	U	NA		*1.22*	U	**2.52**		NA		0.951	U	0.87	U	*1.08*	U	0.889	U	0.99	U	*1.09*	U
Chromium, Total	~	~	~	120	J	NA		12.5		124		NA		8.93		13.3		15.7		13.2		14.1		16.6	
Chromium, Trivalent	30	1,500	~	**120**		NA		12		**120**		NA		8.9		13		16		13		14		17	
Cobalt	~	~	~	6.01		NA		12.1		9.85		NA		5.63		5.01		5.93		7.66		5.18		7.37	
Copper	50	270	1,720	**197**	J	NA		33.4		**155**		NA		39.3		42		44.8		**62.8**		23.3	J	**133**	J
Iron	~	~	~	14,500	J	NA		59,100		44,200		NA		17,900		10,900		12,600		15,300		15,400		16,000	
Lead	63	1,000	450	**222**		NA		**370**		**652**		NA		**63.1**		**830**		54		**265**		**143**	J	**284**	J
Magnesium	~	~	~	4,100	J	NA		2,370		3,100		NA		2,170		2,120		2,370		1,790		2,980		2,740	
Manganese	1,600	10,000	2,000	326	J	NA		928		297		NA		315		93.4		310		199		226		275	
Mercury	0.18	2.8	0.73	**0.181**	J	NA		**0.206**		0.129		NA		**0.466**		**0.33**		**0.22**		**0.789**		**0.488**	J	**0.182**	J
Nickel	30	310	130	**31**		NA		17.6		**252**		NA		14.8		10.9		**35.4**		15.3		12.7		12.8	
Potassium	~	~	~	1,580		NA		804		1,640		NA		591		1,810		1,270		1,290		973		851	
Selenium	3.9	1,500	4	1.89	U	NA		2.42	U	1.45	J	NA		1.8	U	0.672	J	2.11	U	1.07	J	0.66	J	0.432	J
Silver	2	1,500	8.3	0.947	U	NA		1.21	U	0.531	J	NA		0.9	U	0.85	U	1.05	U	0.859	U	0.971	U	0.464	J
Sodium	~	~	~	431		NA		331		1,540		NA		180	U	210		211	U	228		265		211	U
Thallium	~	~	~	1.89	UJ	NA		2.42	U	1.9	U	NA		1.8	U	1.7	U	2.11	U	1.72	U	1.94	U	2.11	U
Vanadium	~	~	~	55.4	J	NA		25.6		1,700		NA		19.8		31.1		18.6		24.4		18.1		15.9	
Zinc	109	10,000	2,480	**326**		NA		**5,310**		**1,000**		NA		100		**137**		95.4		**157**		84.8	J	**515**	J
General Chemistry (%)																									
Total Solids	~	~	~	79.9		81.5		65.8		81.4		83.2		84.1		91.9		73.9		90		80.8		73.5	

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-45 056_LSB-45_7.5-9.5 L2035280-27 8/31/2020 7.5-9.5		LSB-46 055_LSB-46_6.0-8.0 L2035280-26 8/31/2020 6-8		LSB-47 049_LSB-47_8.5-10.5 L2035280-20 8/31/2020 8.5-10.5		LSB-48 039_LSB-48_8.0-10.0 L2035280-10 8/28/2020 8-10		LSB-49 033_LSB-49_9.5-11.5 L2035280-04 8/27/2020 9.5-11.5		LSB-50 042_LSB-50_9.5-11.5 L2035280-13 8/28/2020 9.5-11.5		LSB-52 035_LSB-52_9.5-11.5 L2035280-06 8/27/2020 9.5-11.5		LSB-53 043_LSB-53_9.5-11.5 L2035280-14 8/28/2020 9.5-11.5		LSB-54 045_LSB-54_9.5-11.5 L2035280-16 8/28/2020 9.5-11.5	
Volatile Organic Compounds (mg/kg)																					
1,1,1,2-Tetrachloroethane	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.0008	UJ	0.00046	U	0.00063	U	0.00062	U
1,1,1-Trichloroethane	0.68	500	0.68	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
1,1,2,2-Tetrachloroethane	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.0008	UJ	0.00046	U	0.00063	U	0.00062	U
1,1,2-Trichloroethane	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
1,1-Dichloroethane	0.27	240	0.27	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
1,1-Dichloroethene	0.33	500	0.33	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
1,1-Dichloropropene	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
1,2,3-Trichlorobenzene	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2,3-Trichloropropane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2,4,5-Tetramethylbenzene	~	~	~	0.00026	J	0.0018	U	1.8	J	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2,4-Trichlorobenzene	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2,4-Trimethylbenzene	3.6	190	3.6	0.0007	J	0.0018	U	0.028	J	0.0032	U	0.0021		0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2-Dibromo-3-Chloropropane	~	~	~	0.0036	U	0.0027	U	0.25	UJ	0.0048	U	0.0032	U	0.0048	UJ	0.0027	U	0.0038	U	0.0037	U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
1,2-Dichlorobenzene	1.1	500	1.1	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,2-Dichloroethane	0.02	30	0.02	0.0012	U	0.0009	U	*0.083*	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
1,2-Dichloropropane	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	8.4	0.00023	J	0.0018	U	0.00083	J	0.0032	U	0.00055	J	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,3-Dichlorobenzene	2.4	280	2.4	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,3-Dichloropropane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,4-Dichlorobenzene	1.8	130	1.8	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
1,4-Diethyl Benzene	~	~	~	0.0024	U	0.0018	U	0.02	J	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.097	UJ	0.072	UJ	*6.6*	UJ	*0.13*	UJ	0.084	UJ	*0.14*	UJ	0.073	UJ	0.1	UJ	0.1	UJ
2,2-Dichloropropane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
2-Chlorotoluene	~	~	~	0.0024	U	0.0018	U	0.014	J	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
2-Hexanone	~	~	~	0.012	U	0.009	U	0.83	UJ	0.016	U	0.01	U	0.016	UJ	0.0091	U	0.012	U	0.012	U
4-Chlorotoluene	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
4-Ethyltoluene	~	~	~	0.00048	J	0.0018	U	0.0034	J	0.0032	U	0.0016	J	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
Acetone	0.05	500	0.05	0.0074	J	0.009	U	**0.11**	J	0.016	U	0.011		**0.067**	J	0.021		0.018		0.012	U
Acrylonitrile	~	~	~	0.0048	U	0.0036	U	0.33	UJ	0.0063	U	0.0042	U	0.007	U	0.0036	U	0.005	U	0.005	U
Benzene	0.06	44	0.06	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
Bromobenzene	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
Bromochloromethane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Bromodichloromethane	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	UJ	0.00063	U	0.00062	U
Bromoform	~	~	~	0.0048	UJ	0.0036	UJ	0.33	UJ	0.0063	U	0.0042	U	0.007	UJ	0.0036	UJ	0.005	U	0.005	U
Bromomethane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Carbon Disulfide	~	~	~	0.012	U	0.009	U	0.83	UJ	0.016	U	0.01	U	0.018	U	0.0091	UJ	0.01	J	0.012	U
Carbon Tetrachloride	0.76	22	0.76	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	UJ	0.0012	U	0.0012	U
Chlorobenzene	1.1	500	1.1	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.0008	UJ	0.00046	U	0.00063	U	0.00062	U
Chloroethane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Chloroform	0.37	350	0.37	0.0018	U	0.0013	U	0.12	UJ	0.0024	U	0.00024	J	0.0026	U	0.0014	U	0.0019	U	0.0019	U
Chloromethane	~	~	~	0.0048	UJ	0.0036	UJ	0.33	UJ	0.0063	U	0.0042	U	0.007	UJ	0.0036	U	0.005	U	0.005	U
Cis-1,2-Dichloroethene	0.25	500	0.25	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
Cis-1,3-Dichloropropene	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
Cymene	~	~	~	0.0012	U	0.0009	U	0.02	J	0.0016	U	0.00011	J	0.0074	J	0.00091	U	0.0012	U	0.0012	U
Dibromochloromethane	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	UJ	0.0012	U	0.0012	U
Dibromomethane	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Dichlorodifluoromethane	~	~	~	0.012	UJ	0.009	UJ	0.83	UJ	0.016	U	0.01	U	0.018	UJ	0.0091	U	0.012	U	0.012	U
Diethyl Ether (Ethyl Ether)	~	~	~	0.0024	U	0.0018	U	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Ethylbenzene	1	390	1	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.00032	J	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
Hexachlorobutadiene	~	~	~	0.0048	U	0.0036	U	0.33	UJ	0.0063	U	0.0042	U	0.0064	UJ	0.0036	U	0.005	U	0.005	U
Isopropylbenzene (Cumene)	~	~	~	0.0012	U	0.0009	U	0.0031	J	0.0016	U	0.0011		0.0018	U	0.00091	U	0.0012	U	0.0012	U
M,P-Xylene	~	~	~	0.0024	U	0.0018	U	0.00091	J	0.0032	U	0.0021	U	0.0032	UJ	0.0018	U	0.0025	U	0.0025	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.12	0.012	U	0.009	U	*0.83*	UJ	0.016	U	0.01	U	0.019	J	0.0047	J	0.012	U	0.012	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.012	U	0.009	U	0.83	UJ	0.016	U	0.01	U	0.016	UJ	0.0091	U	0.012	U	0.012	U
Methylene Chloride	0.05	500	0.05	0.0061	U	0.0045	U	*0.42*	UJ	0.0079	U	0.0053	U	0.0088	U	0.0046	U	0.0063	U	0.0062	U
Naphthalene	12	500	12	0.0027	J	0.0036	U	0.3	J	0.0063	U	0.00093	J	0.002	J	0.0036	U	0.00084	J	0.005	U
n-Butylbenzene	12	500	12	0.0012	U	0.0009	U	0.12	J	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
n-Propylbenzene	3.9	500	3.9	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.00059	J	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0012	U	0.0009	U	0.0045	J	0.0016	U	0.00065	J	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
Sec-Butylbenzene	11	500	11	0.0012	U	0.0009	U	0.14	J	0.0016	U	0.00021	J	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
Styrene	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
T-Butylbenzene	5.9	500	5.9	0.0024	U	0.0018	U	0.024	J	0.0032	U	0.0021	U	0.0014	J	0.0018	U	0.0025	U	0.0025	U
Tert-Butyl Methyl Ether	0.93	500	0.93	0.0024	U	0.0002	J	0.17	UJ	0.0032	U	0.0021	U	0.0035	U	0.0018	U	0.0025	U	0.0025	U
Tetrachloroethene (PCE)	1.3	150	1.3	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00073		0.0008	UJ	0.00046	U	0.00063	U	0.00062	U
Toluene	0.7	500	0.7	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U
Total Xylenes	0.26	500	1.6	0.0012	U	0.0009	U	0.0054	J	0.0016	U	0.00065	J	0.0018	U	0.00091	U	0.0012	U	0.0012	U
Total, 1,3-Dichloropropene (Cis And Trans)	~	~	~	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
Trans-1,2-Dichloroethene	0.19	500	0.19	0.0018	U	0.0013	U	0.12	UJ	0.0024	U	0.0016	U	0.0026	U	0.0014	U	0.0019	U	0.0019	U
Trans-1,3-Dichloropropene	~	~	~	0.0012	U	0.0009	U	0.083	UJ	0.0016	U	0.001	U	0.0016	UJ	0.00091	U	0.0012	U	0.0012	U
Trans-1,4-Dichloro-2-Butene	~	~	~	0.0061	U	0.0045	U	0.42	UJ	0.0079	U	0.0053	U	0.008	UJ	0.0046	U	0.0063	U	0.0062	U
Trichloroethene (TCE)	0.47	200	0.47	0.00061	U	0.00045	U	0.042	UJ	0.00079	U	0.00053	U	0.00088	U	0.00046	U	0.00063	U	0.00062	U
Trichlorofluoromethane	~	~	~	0.0048	U	0.0036	U	0.33	UJ	0.0063	U	0.0042	U	0.007	U	0.0036	UJ	0.005	U	0.005	U
Vinyl Acetate	~	~	~	0.012	U	0.009	U	0.83	UJ	0.016	U	0.01	U	0.018	U	0.0091	U	0.012	U	0.012	U
Vinyl Chloride	0.02	13	0.02	0.0012	U	0.0009	U	*0.083*	UJ	0.0016	U	0.001	U	0.0018	U	0.00091	U	0.0012	U	0.0012	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Commercial SCOs**	**NYSDEC Part 375 Protection of Groundwater SCOs**	**LSB-45**		**LSB-46**		**LSB-47**		**LSB-48**		**LSB-49**		**LSB-50**		**LSB-52**		**LSB-53**		**LSB-54**	
Sample ID				**056_LSB-45_7.5-9.5**		**055_LSB-46_6.0-8.0**		**049_LSB-47_8.5-10.5**		**039_LSB-48_8.0-10.0**		**033_LSB-49_9.5-11.5**		**042_LSB-50_9.5-11.5**		**035_LSB-52_9.5-11.5**		**043_LSB-53_9.5-11.5**		**045_LSB-54_9.5-11.5**	
Laboratory ID				**L2035280-27**		**L2035280-26**		**L2035280-20**		**L2035280-10**		**L2035280-04**		**L2035280-13**		**L2035280-06**		**L2035280-14**		**L2035280-16**	
Sample Date				**8/31/2020**		**8/31/2020**		**8/31/2020**		**8/28/2020**		**8/27/2020**		**8/28/2020**		**8/27/2020**		**8/28/2020**		**8/28/2020**	
Sample Depth (feet bgs)				**7.5-9.5**		**6-8**		**8.5-10.5**		**8-10**		**9.5-11.5**		**9.5-11.5**		**9.5-11.5**		**9.5-11.5**		**9.5-11.5**	
Semivolatile Organic Compounds (mg/kg)																					
1,2,4,5-Tetrachlorobenzene	~	~	~	0.22	UJ	0.19	UJ	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
1,2,4-Trichlorobenzene	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
1,2-Dichlorobenzene	1.1	500	1.1	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
1,3-Dichlorobenzene	2.4	280	2.4	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
1,4-Dichlorobenzene	1.8	130	1.8	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
1,4-Dioxane (P-Dioxane)	0.1	130	0.1	0.033	U	0.029	U	*0.17*	U	0.035	U	*0.16*	U	0.045	U	0.03	U	*0.15*	U	0.029	U
2,4,5-Trichlorophenol	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2,4,6-Trichlorophenol	~	~	~	0.13	U	0.12	U	0.68	U	0.14	U	0.65	U	0.18	U	0.12	U	0.62	U	0.11	U
2,4-Dichlorophenol	~	~	~	0.2	U	0.17	U	1	U	0.21	U	0.97	U	0.27	U	0.18	U	0.93	U	0.17	U
2,4-Dimethylphenol	~	~	~	0.15	J	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2,4-Dinitrophenol	~	~	~	1.1	UJ	0.92	UJ	5.4	U	1.1	UJ	5.2	U	1.4	U	0.95	U	5	U	0.92	UJ
2,4-Dinitrotoluene	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2,6-Dinitrotoluene	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2-Chloronaphthalene	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2-Chlorophenol	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2-Methylnaphthalene	~	~	~	1.3		0.23	U	1.4	U	0.28	U	1.3	U	0.36	U	0.24	U	1.2	U	0.23	U
2-Methylphenol (o-Cresol)	0.33	500	0.33	0.11	J	0.19	U	*1.1*	U	0.24	U	*1.1*	U	0.3	U	0.2	U	*1*	U	0.19	U
2-Nitroaniline	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
2-Nitrophenol	~	~	~	0.48	UJ	0.42	UJ	2.4	U	0.51	U	2.3	U	0.65	U	0.42	U	2.2	U	0.41	U
3 & 4 Methylphenol (m&p Cresol)	0.33	500	0.33	**1.5**		0.28	U	*1.6*	U	0.052	J	*1.6*	U	0.12	J	0.042	J	*1.5*	U	0.28	U
3,3'-Dichlorobenzidine	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
3-Nitroaniline	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4,6-Dinitro-2-Methylphenol	~	~	~	0.58	UJ	0.5	UJ	3	U	0.61	U	2.8	U	0.78	U	0.51	U	2.7	U	0.5	U
4-Bromophenyl Phenyl Ether	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4-Chloro-3-Methylphenol	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4-Chloroaniline	~	~	~	0.22	UJ	0.19	UJ	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4-Chlorophenyl Phenyl Ether	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4-Nitroaniline	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
4-Nitrophenol	~	~	~	0.31	UJ	0.27	UJ	1.6	U	0.33	UJ	1.5	U	0.42	U	0.28	U	1.4	U	0.27	UJ
Acenaphthene	20	500	98	2.8		0.025	J	0.94		0.19	U	0.22	J	0.24	U	0.064	J	0.45	J	0.15	U
Acenaphthylene	100	500	107	0.7		0.057	J	0.91	U	0.19	U	0.59	J	0.24	U	0.16	U	0.83	U	0.15	U
Acetophenone	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Anthracene	100	500	1,000	2.3		0.13		0.82		0.14	U	0.48	J	0.18	U	0.071	J	0.62	U	0.11	U
Benzo(a)anthracene	1	5.6	1	**8.5**		0.68		**1.3**		0.06	J	**1.4**		0.035	J	0.32		0.68		0.11	U
Benzo(a)pyrene	1	1	22	**8.1**		0.86		0.7	J	0.078	J	0.97		0.24	U	0.36		0.45	J	0.062	J
Benzo(b)fluoranthene	1	5.6	1.7	**9.1**		0.96		0.46	J	0.08	J	**1.2**		0.18	U	0.4		0.32	J	0.052	J
Benzo(g,h,i)Perylene	100	500	1,000	5.8		0.57		0.43	J	0.056	J	0.55	J	0.24	U	0.22		0.3	J	0.044	J
Benzo(k)fluoranthene	0.8	56	1.7	**3**		0.27		0.68	U	0.14	U	0.45	J	0.18	U	0.16		0.62	U	0.11	U
Benzoic Acid	~	~	~	0.72	U	0.62	U	3.7	U	0.76	U	3.5	U	0.98	U	0.64	U	3.3	U	0.62	U
Benzyl Alcohol	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Benzyl Butyl Phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Biphenyl (Diphenyl)	~	~	~	0.46	J	0.44	UJ	2.6	U	0.54	U	2.5	U	0.69	U	0.45	U	2.4	U	0.44	U
Bis(2-chloroethoxy) methane	~	~	~	0.24	U	0.21	U	1.2	U	0.25	U	1.2	U	0.33	U	0.21	U	1.1	U	0.21	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.2	U	0.17	U	1	U	0.21	U	0.97	U	0.27	U	0.18	U	0.93	U	0.17	U
Bis(2-chloroisopropyl) ether	~	~	~	0.27	UJ	0.23	UJ	1.4	U	0.28	UJ	1.3	U	0.36	U	0.24	U	1.2	U	0.23	UJ
Bis(2-ethylhexyl) phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	0.42	J	0.3	U	0.2	U	2.6		0.19	U
Carbazole	~	~	~	1.1		0.021	J	1.1	U	0.24	U	0.27	J	0.3	U	0.032	J	1	U	0.19	U
Chrysene	1	56	1	**7.5**		0.63		**1.7**		0.055	J	**1.5**		0.18	U	0.33		**1.3**		0.11	U
Dibenz(a,h)anthracene	0.33	0.56	1,000	**1.1**		0.12		*0.68*	U	0.14	U	0.16	J	0.18	U	0.049	J	*0.62*	U	0.11	U
Dibenzofuran	7	350	210	1.6		0.032	J	1.1	U	0.24	U	1.1	U	0.3	U	0.029	J	1	U	0.19	U
Dibutyl phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Diethyl phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Dimethyl phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Dioctyl phthalate	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Fluoranthene	100	500	1,000	25		1.2		0.49	J	0.13	J	3		0.04	J	0.68		0.39	J	0.11	U
Fluorene	30	500	386	1.6		0.026	J	1.5		0.24	U	0.4	J	0.3	U	0.046	J	0.83	J	0.19	U
Hexachlorobenzene	0.33	6	3.2	0.13	U	0.12	U	*0.68*	U	0.14	U	*0.65*	U	0.18	U	0.12	U	*0.62*	U	0.11	U
Hexachlorobutadiene	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
Hexachlorocyclopentadiene	~	~	~	0.64	U	0.55	U	3.2	U	0.67	UJ	3.1	U	0.86	U	0.56	U	3	U	0.55	UJ
Hexachloroethane	~	~	~	0.18	U	0.15	U	0.91	U	0.19	U	0.87	U	0.24	U	0.16	U	0.83	U	0.15	U
Indeno(1,2,3-cd)pyrene	0.5	5.6	8.2	**5.5**		**0.53**		*0.91*	U	0.055	J	**0.53**	J	0.24	U	0.22		*0.83*	U	0.05	J
Isophorone	~	~	~	0.2	U	0.17	U	1	U	0.21	U	0.97	U	0.27	U	0.18	U	0.93	U	0.17	U
Naphthalene	12	500	12	7		0.11	J	0.21	J	0.036	J	1.1	U	0.3	U	0.079	J	1	U	0.19	U
Nitrobenzene	~	~	~	0.2	UJ	0.17	UJ	1	U	0.21	U	0.97	U	0.27	U	0.18	U	0.93	U	0.17	U
n-Nitrosodi-N-Propylamine	~	~	~	0.22	U	0.19	U	1.1	U	0.24	U	1.1	U	0.3	U	0.2	U	1	U	0.19	U
n-Nitrosodiphenylamine	~	~	~	0.18	U	0.15	U	0.91	U	0.19	U	0.87	U	0.24	U	0.16	U	0.83	U	0.15	U
Pentachlorophenol	0.8	6.7	0.8	0.18	U	0.15	U	*0.91*	U	0.19	U	*0.87*	U	0.24	U	0.16	U	*0.83*	U	0.15	U
Phenanthrene	100	500	1,000	6		0.46		0.5	J	0.045	J	1.8		0.18	U	0.5		0.62	U	0.11	U
Phenol	0.33	500	0.33	0.28		0.19	U	*1.1*	U	0.24	U	*1.1*	U	0.3	U	0.2	U	*1*	U	0.19	U
Pyrene	100	500	1,000	22		1.1		2.3		0.12	J	3		0.048	J	0.66		1.6		0.11	U

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5A
Remedial Investigation Report
Remedial Investigation Soil Sample Analytical Results

280 West 155th Street Development
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	LSB-45		LSB-46		LSB-47		LSB-48		LSB-49		LSB-50		LSB-52		LSB-53		LSB-54	
Sample ID				056_LSB-45_7.5-9.5		055_LSB-46_6.0-8.0		049_LSB-47_8.5-10.5		039_LSB-48_8.0-10.0		033_LSB-49_9.5-11.5		042_LSB-50_9.5-11.5		035_LSB-52_9.5-11.5		043_LSB-53_9.5-11.5		045_LSB-54_9.5-11.5	
Laboratory ID				L2035280-27		L2035280-26		L2035280-20		L2035280-10		L2035280-04		L2035280-13		L2035280-06		L2035280-14		L2035280-16	
Sample Date				8/31/2020		8/31/2020		8/31/2020		8/28/2020		8/27/2020		8/28/2020		8/27/2020		8/28/2020		8/28/2020	
Sample Depth (feet bgs)				7.5-9.5		6-8		8.5-10.5		8-10		9.5-11.5		9.5-11.5		9.5-11.5		9.5-11.5		9.5-11.5	
Pesticides (mg/kg)																					
4,4'-DDD	0.0033	92	14	NA		NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	0.0033	62	17	NA		NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	0.0033	47	136	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	0.005	0.68	0.19	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	3.4	0.02	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Alpha Chlordane	0.094	24	2.9	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Alpha Endosulfan	2.4	200	102	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	3	0.09	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Beta Endosulfan	2.4	200	102	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chlordane (alpha and gamma)	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	500	0.25	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	0.005	1.4	0.1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	2.4	200	1000	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	0.014	89	0.06	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Gamma Bhc (Lindane)	0.1	9.2	0.1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Gamma Chlordane	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	0.042	15	0.38	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Herbicides (mg/kg)																					
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Silvex (2,4,5-Tp)	3.8	500	3.8	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Polychlorinated Biphenyls (mg/kg)																					
PCB-1016 (Aroclor 1016)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1221 (Aroclor 1221)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1232 (Aroclor 1232)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1242 (Aroclor 1242)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1248 (Aroclor 1248)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1254 (Aroclor 1254)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0232	J	0.0268	J	0.0393	U	0.173		0.0382	U
PCB-1260 (Aroclor 1260)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0157	J	0.0369	J	0.0393	U	0.0377	J	0.0382	U
PCB-1262 (Aroclor 1262)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
PCB-1268 (Aroclor 1268)	~	~	~	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0425	U	0.058	U	0.0393	U	0.0396	U	0.0382	U
Total PCBs	0.1	1	3.2	0.045	U	0.0366	U	0.0437	U	0.045	U	0.0389	J	0.0637	J	0.0393	U	**0.211**	J	0.0382	U
Inorganics (mg/kg)																					
Aluminum	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Antimony	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Arsenic	13	16	16	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Barium	350	400	820	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Beryllium	7.2	590	47	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Cadmium	2.5	9.3	7.5	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Calcium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium, Hexavalent	1	400	19	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium, Total	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chromium, Trivalent	30	1,500	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Cobalt	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Copper	50	270	1,720	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Lead	63	1,000	450	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Magnesium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Manganese	1,600	10,000	2,000	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Mercury	0.18	2.8	0.73	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nickel	30	310	130	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Potassium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Selenium	3.9	1,500	4	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Silver	2	1,500	8.3	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Sodium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Thallium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vanadium	~	~	~	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Zinc	109	10,000	2,480	NA		NA		NA		NA		NA		NA		NA		NA		NA	
General Chemistry (%)																					
Total Solids	~	~	~	73.4		86.1		72.8		70.2		76.1		54.4		82.6		80.1		85.5	

Notes provided on Page 10.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and
3. Detected analytical results above Unrestricted Use SCOs are bolded.
4. Detected analytical results above Restricted Use Commercial SCOs are shaded.
5. Detected analytical results above Protection of Groundwater SCOs are underlined.
6. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
7. Sample 067_DUP-2 is a duplicate sample of 065_LSB-39_1.0-3.0 and sample 032_DUP-1 is a duplicate sample of 031_LSB-44_12.0-14.0.
8. ~ = Regulatory limit for this analyte does not exist
9. bgs = below grade surface
10. mg/kg = milligrams per kilogram
11. % = percent
13. NA = Not analyzed

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 5B
Remedial Investigation Report
Remedial Investigaton Soil Sample Analytical Results - Emerging Contaminants

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Commercial SCOs**	**NYSDEC Part 375 Protection of Groundwater SCOs**	**LSB-36**	**LSB-36**	**LSB-37**	**LSB-37**	**LSB-38**	**LSB-38**	**LSB-39**	**LSB-39**	**LSB-39**	**LSB-40**
Sample ID				**060_LSB-36_1.0-3.0**	**061_LSB-36_12.0-14.0**	**050_LSB-37_1.0-3.0**	**051_LSB-37_12.0-14.0**	**062_LSB-38_2.0-4.0**	**063_LSB-38_12.0-14.0**	**065_LSB-39_1.0-3.0**	**067_DUP-2**	**066_LSB-39_12.0-14.0**	**053_LSB-40_1.0-3.0**
Laboratory ID				**L2035280-31**	**L2035280-32**	**L2035280-21**	**L2035280-22**	**L2035280-33**	**L2035280-34**	**L2035280-36**	**L2035280-38**	**L2035280-37**	**L2035280-24**
Sample Date				**9/1/2020**	**9/1/2020**	**8/31/2020**	**8/31/2020**	**9/1/2020**	**9/1/2020**	**9/2/2020**	**9/2/2020**	**9/2/2020**	**8/31/2020**
Sample Depth (feet bgs)				**1-3**	**12-14**	**1-3**	**12-14**	**2-4**	**12-14**	**1-3**	**1-3**	**12-14**	**1-3**
Semivolatile Organic Compounds (ppb)													
1,4-Dioxane (P-Dioxane)	100	130,000	100	81 U	30 U	29 U	*1,400* U	28 U	30 U	32 UJ	30 UJ	36 UJ	32 U
Per and Polyfluoroalkyl Substances (ppb)													
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.517 UJ	0.587 UJ	0.55 UJ	0.566 UJ	0.53 UJ	0.541 UJ	0.616 UJ	0.573 UJ	0.692 U	0.606 UJ
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.517 UJ	0.587 UJ	0.55 UJ	0.566 U	0.53 UJ	0.541 UJ	0.616 UJ	0.573 UJ	0.692 U	0.606 UJ
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Perfluorobutanoic acid (PFBA)	~	~	~	0.517 U	0.034 J	0.55 U	0.566 U	0.53 U	0.541 U	0.038 J	0.573 U	0.692 U	0.606 U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.517 UJ	0.587 UJ	0.55 UJ	0.566 U	0.53 UJ	0.541 UJ	0.616 UJ	0.573 UJ	0.692 U	0.606 UJ
Perfluorodecanoic Acid (PFDA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.815	0.541 U	2.32	1.39	0.692 U	0.606 U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.221 J	0.148 J	0.692 U	0.606 U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.517 U	0.057 J	0.55 U	0.566 U	0.53 U	0.541 U	0.253 J	0.183 J	0.692 U	0.606 U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.517 UJ	0.587 U	0.55 U	0.566 UJ	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.079 J	0.116 J	0.098 J	0.06 J	0.53 U	0.541 U	0.148 J	0.111 J	0.073 J	0.606 U
Perfluorononanoic Acid (PFNA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.793	0.541 U	4.78	4.35 J	0.692 UJ	0.606 U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.517 UJ	0.587 UJ	0.55 UJ	0.566 U	0.53 UJ	0.541 UJ	0.616 UJ	0.573 UJ	0.692 UJ	0.606 UJ
Perfluorooctanesulfonic Acid (PFOS)	0.88	440	3.7	0.517 U	0.587 U	0.251 J	0.225 J	0.5 J	0.541 U	**1.02**	**1.12**	0.692 U	0.611
Perfluorooctanoic Acid (PFOA)	0.66	500	1.1	0.517 U	0.265 J	0.242 J	0.057 J	0.124 J	0.541 U	**1.58**	**1.37**	*0.692* U	0.166 J
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.517 U	0.112 J	0.125 J	0.566 U	0.53 U	0.541 U	0.092 J	0.072 J	0.692 U	0.606 U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.412 J	0.195 J	0.692 U	0.606 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.517 U	0.587 U	0.55 U	0.566 U	0.53 U	0.541 U	0.616 U	0.573 U	0.692 U	0.606 U
Total PFOA and PFOS	~	~	~	0.517 U	0.265 J	0.493 J	0.282 J	0.624 J	0.541 U	2.6	2.49 J	0.692 UJ	0.777 J
Total PFAS	~	~	~	0.079	0.584	0.716	0.342	2.23	ND	10.9	8.94	0.073	0.777

Notes provided on Page 3.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5B
Remedial Investigation Report
Remedial Investigaton Soil Sample Analytical Results - Emerging Contaminants

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location **Sample ID** **Laboratory ID** **Sample Date** **Sample Depth (feet bgs)**	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Commercial SCOs**	**NYSDEC Part 375 Protection of Groundwater SCOs**	**LSB-40** **054_LSB-40_12.0-14.0** **L2035280-25** **8/31/2020** **12-14**		**LSB-41** **047_LSB-41_4.0-6.0** **L2035280-18** **8/31/2020** **4-6**		**LSB-41** **048_LSB-41_12.0-14.0** **L2035280-19** **8/31/2020** **12-14**		**LSB-42** **040_LSB-42_1.5-3.5** **L2035280-11** **8/28/2020** **1.5-3.5**		**LSB-42** **041_LSB-42_12.0-14.0** **L2035280-12** **8/28/2020** **12-14**		**LSB-43** **037_LSB-43_2.5-4.5** **L2035280-08** **8/28/2020** **2.5-4.5**		**LSB-43** **038_LSB-43_12.0-14.0** **L2035280-09** **8/28/2020** **12-14**		**LSB-44** **030_LSB-44_3.0-5.0** **L2035280-01** **8/27/2020** **3-5**		**LSB-44** **031_LSB-44_12.0-14.0** **L2035280-02** **8/27/2020** **12-14**		**LSB-44** **032_DUP-1** **L2035280-03** **8/27/2020** **12-14**	
Semivolatile Organic Compounds (ppb)																							
1,4-Dioxane (P-Dioxane)	100	130,000	100	32	U	31	UJ	37	U	*150*	U	29	U	27	U	*170*	U	27	U	30	U	33	U
Per and Polyfluoroalkyl Substances (ppb)																							
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.623	U	0.557	UJ	0.665	UJ	0.565	UJ	0.548	UJ	0.528	UJ	0.172	J	0.5	UJ	0.559	UJ	0.624	UJ
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.623	UJ	0.557	UJ	0.665	UJ	0.565	UJ	0.548	UJ	0.528	UJ	0.264	J	0.5	UJ	0.559	UJ	0.624	UJ
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorobutanoic acid (PFBA)	~	~	~	0.623	U	0.557	U	0.665	U	0.774		0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.623	U	0.557	UJ	0.665	UJ	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.623	U	0.557	U	0.665	U	0.117	J	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.623	U	0.557	U	0.665	U	0.091	J	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.067	J	0.083	J	0.665	U	0.122	J	0.548	U	0.097	J	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorononanoic Acid (PFNA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.623	UJ	0.557	UJ	0.665	UJ	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	440	3.7	0.623	U	0.456	J	0.665	U	0.602	J	0.548	U	**1.33**	J	0.569	J	**2.02**	J	0.559	U	0.624	U
Perfluorooctanoic Acid (PFOA)	0.66	500	1.1	0.17	J	0.191	J	*0.665*	U	**0.784**		0.548	U	0.286	J	0.637	U	0.26	J	0.559	U	0.624	U
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.051	J	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	UJ	0.548	UJ	0.528	UJ	0.637	U	0.5	UJ	0.559	UJ	0.624	UJ
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.623	U	0.557	U	0.665	U	0.565	U	0.548	U	0.528	U	0.637	U	0.5	U	0.559	U	0.624	U
Total PFOA and PFOS	~	~	~	0.17	J	0.647	J	0.665	U	1.39		0.548	U	1.62	J	0.569	J	2.28	J	0.559	U	0.624	U
Total PFAS	~	~	~	0.237		0.73		ND		2.49		ND		1.76		1.01		2.28		ND		ND	

Notes provided on Page 3.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Commercial SCOs are shaded.
Concentrations above Protection of Groundwater SCOs are underlined.

Table 5B
Remedial Investigation Report
Remedial Investigaton Soil Sample Analytical Results - Emerging Contaminants

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO and NYSDEC Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) (October 2020).
2. Detected analytical results above Unrestricted Use SCOs are bolded.
3. Detected analytical results above Restricted Use Commercial SCOs are shaded.
4. Detected analytical results above Protection of Groundwater SCOs are underlined.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample 067_DUP-2 is a duplicate sample of 065_LSB-39_1.0-3.0 and sample 032_DUP-1 is a duplicate sample of 031_LSB-44_12.0-14.0.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. ppb = parts per billion
10. ND = Not detected

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 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location		**LMW-1**		**LMW-1**		**LMW-1**	**LMW-1**	**LMW-3**		**LMW-3**	**LMW-3**	**LMW-4**		**LMW-4**	**LMW-4**	**LMW-6**		**LMW-6**	**LMW-6**
Sample ID	**NYSDEC SGVs**	**073_LMW-1**		**074_DUP-1**		**127_LMW-1**	**128_LMW-1 (DISSOLVED)**	**083_LMW-3**		**118_LMW-3**	**119_LMW-3 (DISSOLVED)**	**081_LMW-4**		**106_LMW-4**	**107_LMW-4 (DISSOLVED)**	**075_LMW-6**		**124_LMW-6**	**125_LMW-6 (DISSOLVED)**
Laboratory ID		**L2037563-01**		**L2037563-04**		**L2109792-15**	**L2109792-16**	**L2037563-10**		**L2109792-09**	**L2109792-10**	**L2037563-08**		**L2109792-01**	**L2109792-02**	**L2037563-02**		**L2109792-13**	**L2109792-14**
Sample Date		**9/10/2020**		**9/10/2020**		**2/26/2021**	**2/26/2021**	**9/11/2020**		**2/26/2021**	**2/26/2021**	**9/11/2020**		**2/26/2021**	**2/26/2021**	**9/10/2020**		**2/26/2021**	**2/26/2021**
Volatile Organic Compounds (µg/L)																			
1,1,1,2-Tetrachloroethane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,1,1-Trichloroethane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
1,1,2-Trichloroethane	1	*1.5*	U	*1.5*	U	NA	NA	*1.5*	U	NA	NA	*1.5*	U	NA	NA	*1.5*	U	NA	NA
1,1-Dichloroethane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,1-Dichloroethene	5	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
1,1-Dichloropropene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,2,3-Trichlorobenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,2,3-Trichloropropane	0.04	*2.5*	UJ	*2.5*	UJ	NA	NA	*2.5*	U	NA	NA	*2.5*	U	NA	NA	*2.5*	UJ	NA	NA
1,2,4,5-Tetramethylbenzene	5	2	U	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA
1,2,4-Trichlorobenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,2,4-Trimethylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,2-Dibromo-3-Chloropropane	0.04	*2.5*	UJ	*2.5*	UJ	NA	NA	*2.5*	UJ	NA	NA	*2.5*	UJ	NA	NA	*2.5*	UJ	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	*2*	UJ	*2*	UJ	NA	NA	*2*	U	NA	NA	*2*	U	NA	NA	*2*	UJ	NA	NA
1,2-Dichlorobenzene	3	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,2-Dichloroethane	0.6	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
1,2-Dichloropropane	1	1	U	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA
1,3,5-Trimethylbenzene (Mesitylene)	5	2.5	U	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	U	NA	NA
1,3-Dichlorobenzene	3	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,3-Dichloropropane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,4-Dichlorobenzene	3	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
1,4-Diethyl Benzene	~	2	U	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA
1,4-Dioxane (P-Dioxane)	~	250	UJ	250	UJ	NA	NA	250	UJ	NA	NA	250	UJ	NA	NA	250	UJ	NA	NA
2,2-Dichloropropane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
2-Chlorotoluene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
2-Hexanone	50	5	UJ	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA
4-Chlorotoluene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
4-Ethyltoluene	~	2	U	2	U	NA	NA	2	UJ	NA	NA	2	UJ	NA	NA	2	U	NA	NA
Acetone	50	5	UJ	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA
Acrylonitrile	5	5	UJ	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA
Benzene	1	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Bromobenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Bromochloromethane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Bromodichloromethane	50	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Bromoform	50	2	U	2	U	NA	NA	2	UJ	NA	NA	2	UJ	NA	NA	2	U	NA	NA
Bromomethane	5	2.5	UJ	2.5	UJ	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	UJ	NA	NA
Carbon Disulfide	60	5	U	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA
Carbon Tetrachloride	5	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Chlorobenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Chloroethane	5	2.5	UJ	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA
Chloroform	7	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Chloromethane	5	1	J	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Cis-1,2-Dichloroethene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Cis-1,3-Dichloropropene	0.4	*0.5*	U	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA
Cymene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Dibromochloromethane	50	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Dibromomethane	5	5	U	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA
Dichlorodifluoromethane	5	5	U	5	U	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	U	NA	NA
Diethyl Ether (Ethyl Ether)	~	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Ethylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Hexachlorobutadiene	0.5	*2.5*	U	*2.5*	U	NA	NA	*2.5*	U	NA	NA	*2.5*	U	NA	NA	*2.5*	U	NA	NA
Isopropylbenzene (Cumene)	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
M,P-Xylene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Methyl Ethyl Ketone (2-Butanone)	50	5	U	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	5	UJ	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA
Methylene Chloride	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Naphthalene	10	2.5	UJ	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA
n-Butylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
n-Propylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	U	NA	NA
o-Xylene (1,2-Dimethylbenzene)	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Sec-Butylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	U	NA	NA
Styrene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
T-Butylbenzene	5	2.5	U	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	U	NA	NA
Tert-Butyl Methyl Ether	10	2.5	UJ	2.5	UJ	NA	NA	**18**	J	NA	NA	5.7	J	NA	NA	2.5	UJ	NA	NA
Tetrachloroethene (PCE)	5	0.5	U	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Toluene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Total 1,2-Dichloroethene (Cis and Trans)	~	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Total Xylenes	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Total, 1,3-Dichloropropene (Cis And Trans)	0.4	*0.5*	U	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA
Trans-1,2-Dichloroethene	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Trans-1,3-Dichloropropene	0.4	*0.5*	U	*0.5*	U	NA	NA	*0.5*	UJ	NA	NA	*0.5*	UJ	NA	NA	*0.5*	U	NA	NA
Trans-1,4-Dichloro-2-Butene	5	2.5	UJ	2.5	UJ	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	UJ	NA	NA
Trichloroethene (TCE)	5	0.41	J	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA
Trichlorofluoromethane	5	2.5	U	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA
Vinyl Acetate	~	5	UJ	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA
Vinyl Chloride	2	1	U	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA

Notes provided on Page 7.

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date	NYSDEC SGVs	LMW-1 073_LMW-1 L2037563-01 9/10/2020	LMW-1 074_DUP-1 L2037563-04 9/10/2020	LMW-1 127_LMW-1 L2109792-15 2/26/2021	LMW-1 128_LMW-1 (DISSOLVED) L2109792-16 2/26/2021	LMW-3 083_LMW-3 L2037563-10 9/11/2020	LMW-3 118_LMW-3 L2109792-09 2/26/2021	LMW-3 119_LMW-3 (DISSOLVED) L2109792-10 2/26/2021	LMW-4 081_LMW-4 L2037563-08 9/11/2020	LMW-4 106_LMW-4 L2109792-01 2/26/2021	LMW-4 107_LMW-4 (DISSOLVED) L2109792-02 2/26/2021	LMW-6 075_LMW-6 L2037563-02 9/10/2020	LMW-6 124_LMW-6 L2109792-13 2/26/2021	LMW-6 125_LMW-6 (DISSOLVED) L2109792-14 2/26/2021
Semivolatile Organic Compounds (µg/L)														
1,2,4,5-Tetrachlorobenzene	5	*10* U	*10* U	NA	NA	*10* U	NA	NA	*10* UJ	NA	NA	*10* U	NA	NA
1,2,4-Trichlorobenzene	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
1,2-Dichlorobenzene	3	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
1,3-Dichlorobenzene	3	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
1,4-Dichlorobenzene	3	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
1,4-Dioxane (P-Dioxane)	~	0.0648 J	0.144 U	NA	NA	0.156 U	NA	NA	0.15 U	NA	NA	0.15 U	NA	NA
2,4,5-Trichlorophenol	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2,4,6-Trichlorophenol	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2,4-Dichlorophenol	1	*5* U	*5* U	NA	NA	*5* U	NA	NA	*5* U	NA	NA	*5* U	NA	NA
2,4-Dimethylphenol	1	*5* U	*5* U	NA	NA	*5* UJ	NA	NA	*5* UJ	NA	NA	*5* U	NA	NA
2,4-Dinitrophenol	1	*20* U	*20* U	NA	NA	*20* U	NA	NA	*20* UJ	NA	NA	*20* U	NA	NA
2,4-Dinitrotoluene	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2,6-Dinitrotoluene	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2-Chloronaphthalene	10	0.2 U	0.2 U	NA	NA	0.2 U	NA	NA	0.2 U	NA	NA	0.2 U	NA	NA
2-Chlorophenol	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
2-Methylnaphthalene	~	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.03 J	0.1 U	NA	0.1 U	0.1 U	NA
2-Methylnaphthalene (Dissolved)	~	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
2-Methylphenol (o-Cresol)	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2-Nitroaniline	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
2-Nitrophenol	~	10 UJ	10 UJ	NA	NA	10 U	NA	NA	10 U	NA	NA	10 UJ	NA	NA
3 & 4 Methylphenol (m&p Cresol)	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
3,3'-Dichlorobenzidine	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
3-Nitroaniline	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
4,6-Dinitro-2-Methylphenol	~	10 U	10 U	NA	NA	10 U	NA	NA	10 UJ	NA	NA	10 U	NA	NA
4-Bromophenyl Phenyl Ether	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
4-Chloro-3-Methylphenol	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
4-Chloroaniline	5	5 U	5 U	NA	NA	5 UJ	NA	NA	5 U	NA	NA	5 U	NA	NA
4-Chlorophenyl Phenyl Ether	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
4-Nitroaniline	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
4-Nitrophenol	~	10 U	10 U	NA	NA	10 U	NA	NA	10 U	NA	NA	10 U	NA	NA
Acenaphthene	20	0.1 U	0.03 J	0.1 U	NA	0.02 J	0.1 U	NA	0.09 J	0.07 J	NA	0.32	0.67	NA
Acenaphthene (Dissolved)	20	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.08 J	NA	NA	0.84
Acenaphthylene	~	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.02 J	0.1 U	NA	0.1 U	0.1 U	NA
Acenaphthylene (Dissolved)	~	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Acetophenone	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Anthracene	50	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.05 J	0.1 U	NA	0.03 J	0.1 U	NA
Anthracene (Dissolved)	50	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Benzo(a)anthracene	0.002	*0.1* U	*0.1* U	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.09** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Benzo(a)anthracene (Dissolved)	0.002	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Benzo(a)pyrene	0	*0.1* U	*0.1* U	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.09** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Benzo(a)pyrene (Dissolved)	0	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Benzo(b)fluoranthene	0.002	*0.1* U	*0.1* U	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.1** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Benzo(b)fluoranthene (Dissolved)	0.002	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Benzo(g,h,i)Perylene	~	0.04 J	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.06 J	0.1 U	NA	0.1 U	0.1 U	NA
Benzo(g,h,i)Perylene (Dissolved)	~	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Benzo(k)fluoranthene	0.002	*0.1* U	*0.1* U	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.03** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Benzo(k)fluoranthene (Dissolved)	0.002	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Benzoic Acid	~	11 J	50 U	NA	NA	50 U	NA	NA	50 UJ	NA	NA	50 U	NA	NA
Benzyl Alcohol	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
Benzyl Butyl Phthalate	50	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Biphenyl (Diphenyl)	5	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
Bis(2-chloroethoxy) methane	5	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Bis(2-chloroethyl) ether (2-chloroethyl ether)	1	*2* U	*2* U	NA	NA	*2* U	NA	NA	*2* U	NA	NA	*2* U	NA	NA
Bis(2-chloroisopropyl) ether	5	2 UJ	2 UJ	NA	NA	2 U	NA	NA	2 U	NA	NA	2 UJ	NA	NA
Bis(2-ethylhexyl) phthalate	5	2.6 J	3.1	NA	NA	1.5 J	NA	NA	3 U	NA	NA	3 U	NA	NA
Carbazole	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
Chrysene	0.002	*0.1* U	**0.01** J	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.08** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Chrysene (Dissolved)	0.002	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Dibenz(a,h)anthracene	~	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA
Dibenz(a,h)anthracene (Dissolved)	~	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Dibenzofuran	~	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
Dibutyl phthalate	50	1.3 J	1.2 J	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Diethyl phthalate	50	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Dimethyl phthalate	50	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Dioctyl phthalate	50	5 U	5 U	NA	NA	5 U	NA	NA	5 UJ	NA	NA	5 U	NA	NA
Fluoranthene	50	0.1 U	0.1 U	0.1 U	NA	0.02 J	0.1 U	NA	0.23	0.1 U	NA	0.02 J	0.1 U	NA
Fluoranthene (Dissolved)	50	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Fluorene	50	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.06 J	0.1 U	NA	0.02 J	0.1 U	NA
Fluorene (Dissolved)	50	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Hexachlorobenzene	0.04	*0.8* U	*0.8* U	NA	NA	*0.8* U	NA	NA	*0.8* U	NA	NA	*0.8* U	NA	NA
Hexachlorobutadiene	0.5	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA
Hexachlorocyclopentadiene	5	*20* U	*20* U	NA	NA	*20* U	NA	NA	*20* UJ	NA	NA	*20* U	NA	NA
Hexachloroethane	5	0.8 U	0.8 U	NA	NA	0.8 U	NA	NA	0.8 U	NA	NA	0.8 U	NA	NA
Indeno(1,2,3-cd)pyrene	0.002	**0.04** J	*0.1* U	*0.1* U	NA	*0.1* U	*0.1* U	NA	**0.06** J	*0.1* U	NA	*0.1* U	*0.1* U	NA
Indeno(1,2,3-cd)pyrene (Dissolved)	0.002	NA	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U	NA	NA	*0.1* U
Isophorone	50	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
Naphthalene	10	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	NA	0.08 J	0.1 U	NA	0.1 U	0.1 U	NA
Naphthalene (Dissolved)	10	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U
Nitrobenzene	0.4	*2* U	*2* U	NA	NA	*2* U	NA	NA	*2* U	NA	NA	*2* U	NA	NA
n-Nitrosodi-N-Propylamine	~	5 U	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA
n-Nitrosodiphenylamine	50	2 U	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA
Pentachlorophenol	1	0.8 UJ	0.8 UJ	NA	NA	0.8 U	NA	NA	0.8 UJ	NA	NA	0.8 UJ	NA	NA
Phenanthrene	50	0.1 U	0.1 U	0.1 U	NA	0.05 J	0.1 U	NA	0.22	0.1 U	NA	0.12	0.09 J	NA
Phenanthrene (Dissolved)	50	NA	NA	NA	0.1 U	NA	NA	0.03 J	NA	NA	0.02 J	NA	NA	0.13
Phenol	1	*5* U	*5* U	NA	NA	*5* U	NA	NA	*5* U	NA	NA	*5* U	NA	NA
Pyrene	50	0.1 U	0.02 J	0.1 U	NA	0.04 J	0.1 U	NA	0.22	0.1 U	NA	0.04 J	0.1 U	NA
Pyrene (Dissolved)	50	NA	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U	NA	NA	0.1 U

Notes provided on Page 7.

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC SGVs	LMW-1		LMW-1		LMW-1		LMW-1		LMW-3		LMW-3		LMW-3		LMW-4		LMW-4		LMW-4		LMW-6		LMW-6		LMW-6	
Sample ID		073_LMW-1		074_DUP-1		127_LMW-1		128_LMW-1 (DISSOLVED)		083_LMW-3		118_LMW-3		119_LMW-3 (DISSOLVED)		081_LMW-4		106_LMW-4		107_LMW-4 (DISSOLVED)		075_LMW-6		124_LMW-6		125_LMW-6 (DISSOLVED)	
Laboratory ID		L2037563-01		L2037563-04		L2109792-15		L2109792-16		L2037563-10		L2109792-09		L2109792-10		L2037563-08		L2109792-01		L2109792-02		L2037563-02		L2109792-13		L2109792-14	
Sample Date		9/10/2020		9/10/2020		2/26/2021		2/26/2021		9/11/2020		2/26/2021		2/26/2021		9/11/2020		2/26/2021		2/26/2021		9/10/2020		2/26/2021		2/26/2021	
Pesticides (µg/L)																											
4,4'-DDD	0.3	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
4,4'-DDE	0.2	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
4,4'-DDT	0.2	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
Aldrin	0	*0.014*	UJ	*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA	
Alpha BHC (Alpha Hexachlorocyclohexane)	0.01	*0.014*	UJ	*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA		*0.014*	UJ	NA		NA	
Alpha Chlordane	~	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Alpha Endosulfan	~	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Beta Endosulfan	~	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
Chlordane (alpha and gamma)	0.05	*0.143*	UJ	*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA	
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Dieldrin	0.004	*0.029*	UJ	*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA	
Endosulfan Sulfate	~	0.029	UJ	0.029	UJ	NA		NA		0.029	U	NA		NA		0.029	U	NA		NA		0.029	UJ	NA		NA	
Endrin	0	*0.029*	UJ	*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA		*0.029*	UJ	NA		NA	
Endrin Aldehyde	5	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
Endrin Ketone	5	0.029	UJ	0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA		0.029	UJ	NA		NA	
Gamma Bhc (Lindane)	0.05	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Gamma Chlordane	~	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Heptachlor	0.04	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Heptachlor Epoxide	0.03	0.014	UJ	0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA		0.014	UJ	NA		NA	
Methoxychlor	35	0.143	UJ	0.143	UJ	NA		NA		0.143	UJ	NA		NA		0.143	UJ	NA		NA		0.143	UJ	NA		NA	
Toxaphene	0.06	*0.143*	UJ	*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA		*0.143*	UJ	NA		NA	
Herbicides (µg/L)																											
2,4,5-T (Trichlorophenoxyacetic Acid)	35	2	UJ	2	UJ	NA		NA		2	U	NA		NA		2	U	NA		NA		2	UJ	NA		NA	
2,4-D (Dichlorophenoxyacetic Acid)	50	10	U	10	U	NA		NA		10	U	NA		NA		10	U	NA		NA		10	U	NA		NA	
Silvex (2,4,5-Tp)	0.26	*2*	U	*2*	U	NA		NA		*2*	U	NA		NA		*2*	U	NA		NA		*2*	U	NA		NA	
Polychlorinated Biphenyls (µg/L)																											
PCB-1016 (Aroclor 1016)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1221 (Aroclor 1221)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1232 (Aroclor 1232)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1242 (Aroclor 1242)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1248 (Aroclor 1248)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1254 (Aroclor 1254)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1260 (Aroclor 1260)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1262 (Aroclor 1262)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
PCB-1268 (Aroclor 1268)	~	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
Total PCBs	0.09	0.083	U	0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA		0.083	U	NA		NA	
Inorganics (µg/L)																											
Aluminum	~	20.8		24.7		NA		NA		19.9		NA		NA		3,470		NA		NA		29.3		NA		NA	
Aluminum (Dissolved)	~	10	U	10	U	NA		NA		10	U	NA		NA		9.77	J	NA		NA		10	U	NA		NA	
Antimony	3	*4*	U	*4*	U	NA		NA		*4*	U	NA		NA		**4.2**		NA		NA		*4*	U	NA		NA	
Antimony (Dissolved)	3	*4*	U	*4*	U	NA		NA		*4*	U	NA		NA		**6.38**		NA		NA		*4*	U	NA		NA	
Arsenic	25	0.32	J	0.31	J	NA		NA		0.28	J	NA		NA		5.41		NA		NA		1.76		NA		NA	
Arsenic (Dissolved)	25	0.31	J	0.3	J	NA		NA		0.19	J	NA		NA		4.79		NA		NA		1.56		NA		NA	
Barium	1,000	174.9		171.2		NA		NA		242.4		NA		NA		281.8		NA		NA		105.2		NA		NA	
Barium (Dissolved)	1,000	135.4		142.2		NA		NA		205.7		NA		NA		133.7		NA		NA		68.12		NA		NA	
Beryllium	3	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		0.17	J	NA		NA		0.5	U	NA		NA	
Beryllium (Dissolved)	3	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		0.5	U	NA		NA		0.5	U	NA		NA	
Cadmium	5	0.2	U	0.2	U	NA		NA		0.2	U	NA		NA		0.13	J	NA		NA		0.2	U	NA		NA	
Cadmium (Dissolved)	5	0.2	U	0.2	U	NA		NA		0.2	U	NA		NA		0.2	U	NA		NA		0.2	U	NA		NA	
Calcium	~	118,000		115,000		NA		NA		121,000		NA		NA		230,000		NA		NA		93,800		NA		NA	
Calcium (Dissolved)	~	123,000		129,000		NA		NA		124,000		NA		NA		235,000		NA		NA		102,000		NA		NA	
Chromium, Hexavalent	50	10	U	3	J	NA		NA		10	U	NA		NA		10	U	NA		NA		3	J	NA		NA	
Chromium, Total	50	1	U	0.24	J	NA		NA		0.21	J	NA		NA		7.06		NA		NA		0.37	J	NA		NA	
Chromium, Total (Dissolved)	50	1	U	1	U	NA		NA		1	U	NA		NA		1	U	NA		NA		1	U	NA		NA	
Chromium, Trivalent	~	10	U	10	U	NA		NA		10	U	NA		NA		10	U	NA		NA		10	U	NA		NA	
Cobalt	~	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		3.61		NA		NA		0.23	J	NA		NA	
Cobalt (Dissolved)	~	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		2.46		NA		NA		0.22	J	NA		NA	
Copper	200	1	U	1	U	NA		NA		0.39	J	NA		NA		17.84		NA		NA		1	U	NA		NA	
Copper (Dissolved)	200	1	U	1	U	NA		NA		1	U	NA		NA		1	U	NA		NA		1	U	NA		NA	
Iron	300	**1,880**		**1,930**		NA		NA		**5,920**		NA		NA		**12,600**		NA		NA		**2,920**		NA		NA	
Iron (Dissolved)	300	42.6	J	54.5		NA		NA		**2,320**		NA		NA		56		NA		NA		60.6		NA		NA	
Lead	25	1	U	0.46	J	NA		NA		1.04		NA		NA		**117.6**		NA		NA		1.18		NA		NA	
Lead (Dissolved)	25	1	U	1	U	NA		NA		1	U	NA		NA		0.53	J	NA		NA		1	U	NA		NA	
Magnesium	35,000	19,900		19,400		NA		NA		22,500		NA		NA		**96,100**		NA		NA		24,000		NA		NA	
Magnesium (Dissolved)	35,000	20,000		21,100		NA		NA		22,200		NA		NA		**104,000**		NA		NA		24,900		NA		NA	
Manganese	300	**641.6**		**639**		NA		NA		**675**		NA		NA		**669**		NA		NA		**489.8**		NA		NA	
Manganese (Dissolved)	300	**660.5**		**685.6**		NA		NA		**671**		NA		NA		**579.8**		NA		NA		**505.3**		NA		NA	
Mercury	0.7	0.2	U	0.2	U	NA		NA		0.2	U	NA		NA		**2.63**		NA		NA		0.2	U	NA		NA	
Mercury (Dissolved)	0.7	0.2	U	0.2	U	NA		NA		0.2	U	NA		NA		0.2	U	NA		NA		0.2	U	NA		NA	
Nickel	100	2	U	2	U	NA		NA		2	U	NA		NA		8.95		NA		NA		2	U	NA		NA	
Nickel (Dissolved)	100	2	U	2	U	NA		NA		2	U	NA		NA		3.93		NA		NA		2	U	NA		NA	
Potassium	~	13,400		13,200		NA		NA		13,800		NA		NA		34,000		NA		NA		16,200		NA		NA	
Potassium (Dissolved)	~	13,600		14,400		NA		NA		13,900		NA		NA		37,100		NA		NA		17,000		NA		NA	
Selenium	10	5	U	5	U	NA		NA		5	U	NA		NA		3.03	J	NA		NA		5	U	NA		NA	
Selenium (Dissolved)	10	5	U	5	U	NA		NA		5	U	NA		NA		5	U	NA		NA		5	U	NA		NA	
Silver	50	0.4	U	0.4	U	NA		NA		0.4	U	NA		NA		0.4	U	NA		NA		0.4	U	NA		NA	
Silver (Dissolved)	50	0.4	U	0.4	U	NA		NA		0.4	U	NA		NA		0.4	U	NA		NA		0.4	U	NA		NA	
Sodium	20,000	**52,500**		**51,000**		NA		NA		**43,900**		NA		NA		**139,000**		NA		NA		**55,200**		NA		NA	
Sodium (Dissolved)	20,000	**52,900**		**55,700**		NA		NA		**43,300**		NA		NA		**154,000**		NA		NA		**57,000**		NA		NA	
Thallium	0.5	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		0.15	J	NA		NA		0.5	U	NA		NA	
Thallium (Dissolved)	0.5	0.5	U	0.5	U	NA		NA		0.5	U	NA		NA		0.5	U	NA		NA		0.5	U	NA		NA	
Vanadium	~	5	U	5	U	NA		NA		5	U	NA		NA		9.39		NA		NA		5	U	NA		NA	
Vanadium (Dissolved)	~	5	U	5	U	NA		NA		5	U	NA		NA		5	U	NA		NA		5	U	NA		NA	
Zinc	2,000	10	U	10	U	NA		NA		10	U	NA		NA		65.9		NA		NA		8.12	J	NA		NA	
Zinc (Dissolved)	2,000	10	U	10	U	NA		NA		10	U	NA		NA		10	U	NA		NA		10	U	NA		NA	

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC SGVs	LMW-7		LMW-7	LMW-7	LMW-8		LMW-8	LMW-8	LMW-9		LMW-9	LMW-9	LMW-9	LMW-9
Sample ID		076_LMW-7		121_LMW-7	122_LMW-7 (DISSOLVED)	082_LMW-8		109_LMW-8	110_LMW-8 (DISSOLVED)	080_LMW-9		112_LMW-9	115_DUP-2	113_LMW-9 (DISSOLVED)	116_DUP-2 (DISSOLVED)
Laboratory ID		L2037563-03		L2109792-11	L2109792-12	L2037563-09		L2109792-03	L2109792-04	L2037563-07		L2109792-05	L2109792-07	L2109792-06	L2109792-08
Sample Date		9/10/2020		2/26/2021	2/26/2021	9/11/2020		2/26/2021	2/26/2021	9/11/2020		2/26/2021	2/26/2021	2/26/2021	2/26/2021
Volatile Organic Compounds (µg/L)															
1,1,1,2-Tetrachloroethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,1,1-Trichloroethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
1,1,2-Trichloroethane	1	*1.5*	U	NA	NA	*1.5*	U	NA	NA	*1.5*	U	NA	NA	NA	NA
1,1-Dichloroethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,1-Dichloroethene	5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
1,1-Dichloropropene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,2,3-Trichlorobenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,2,3-Trichloropropane	0.04	*2.5*	UJ	NA	NA	*2.5*	U	NA	NA	*2.5*	U	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	5	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,2,4-Trimethylbenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	0.04	*2.5*	UJ	NA	NA	*2.5*	UJ	NA	NA	*2.5*	UJ	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	*2*	UJ	NA	NA	*2*	U	NA	NA	*2*	U	NA	NA	NA	NA
1,2-Dichlorobenzene	3	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,2-Dichloroethane	0.6	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
1,2-Dichloropropane	1	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA	NA	NA
1,3,5-Trimethylbenzene (Mesitylene)	5	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	NA	NA
1,3-Dichlorobenzene	3	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,3-Dichloropropane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,4-Dichlorobenzene	3	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
1,4-Diethyl Benzene	~	2	U	NA	NA	2	U	NA	NA	2	U	NA	NA	NA	NA
1,4-Dioxane (P-Dioxane)	~	250	UJ	NA	NA	250	UJ	NA	NA	250	UJ	NA	NA	NA	NA
2,2-Dichloropropane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
2-Chlorotoluene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
2-Hexanone	50	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	NA	NA
4-Chlorotoluene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
4-Ethyltoluene	~	2	U	NA	NA	2	UJ	NA	NA	2	UJ	NA	NA	NA	NA
Acetone	50	5	UJ	NA	NA	1.5	J	NA	NA	5	UJ	NA	NA	NA	NA
Acrylonitrile	5	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	NA	NA
Benzene	1	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Bromobenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Bromochloromethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Bromodichloromethane	50	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Bromoform	50	2	U	NA	NA	2	UJ	NA	NA	2	UJ	NA	NA	NA	NA
Bromomethane	5	2.5	UJ	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Carbon Disulfide	60	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	NA	NA
Carbon Tetrachloride	5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Chlorobenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Chloroethane	5	2.5	UJ	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	NA	NA
Chloroform	7	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Chloromethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Cis-1,2-Dichloroethene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Cis-1,3-Dichloropropene	0.4	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA	NA	NA
Cymene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Dibromochloromethane	50	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Dibromomethane	5	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	NA	NA
Dichlorodifluoromethane	5	5	U	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	NA	NA
Diethyl Ether (Ethyl Ether)	~	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Ethylbenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Hexachlorobutadiene	0.5	*2.5*	U	NA	NA	*2.5*	U	NA	NA	*2.5*	U	NA	NA	NA	NA
Isopropylbenzene (Cumene)	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
M,P-Xylene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Methyl Ethyl Ketone (2-Butanone)	50	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	NA	NA
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	NA	NA
Methylene Chloride	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Naphthalene	10	2.5	UJ	NA	NA	1.8	J	NA	NA	2.5	UJ	NA	NA	NA	NA
n-Butylbenzene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
n-Propylbenzene	5	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	NA	NA
o-Xylene (1,2-Dimethylbenzene)	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Sec-Butylbenzene	5	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	NA	NA
Styrene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
T-Butylbenzene	5	2.5	U	NA	NA	2.5	UJ	NA	NA	2.5	UJ	NA	NA	NA	NA
Tert-Butyl Methyl Ether	10	2.5	UJ	NA	NA	1.8	J	NA	NA	**12**	J	NA	NA	NA	NA
Tetrachloroethene (PCE)	5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Toluene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Total 1,2-Dichloroethene (Cis and Trans)	~	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Total Xylenes	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Total, 1,3-Dichloropropene (Cis And Trans)	0.4	*0.5*	U	NA	NA	*0.5*	U	NA	NA	*0.5*	U	NA	NA	NA	NA
Trans-1,2-Dichloroethene	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Trans-1,3-Dichloropropene	0.4	*0.5*	U	NA	NA	*0.5*	UJ	NA	NA	*0.5*	UJ	NA	NA	NA	NA
Trans-1,4-Dichloro-2-Butene	5	2.5	UJ	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Trichloroethene (TCE)	5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Trichlorofluoromethane	5	2.5	U	NA	NA	2.5	U	NA	NA	2.5	U	NA	NA	NA	NA
Vinyl Acetate	~	5	UJ	NA	NA	5	UJ	NA	NA	5	UJ	NA	NA	NA	NA
Vinyl Chloride	2	1	U	NA	NA	1	U	NA	NA	1	U	NA	NA	NA	NA

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDEC SGVs	LMW-7	LMW-7	LMW-7	LMW-8	LMW-8	LMW-8	LMW-9	LMW-9	LMW-9	LMW-9	LMW-9
Sample ID		076_LMW-7	121_LMW-7	122_LMW-7 (DISSOLVED)	082_LMW-8	109_LMW-8	110_LMW-8 (DISSOLVED)	080_LMW-9	112_LMW-9	115_DUP-2	113_LMW-9 (DISSOLVED)	116_DUP-2 (DISSOLVED)
Laboratory ID		L2037563-03	L2109792-11	L2109792-12	L2037563-09	L2109792-03	L2109792-04	L2037563-07	L2109792-05	L2109792-07	L2109792-06	L2109792-08
Sample Date		9/10/2020	2/26/2021	2/26/2021	9/11/2020	2/26/2021	2/26/2021	9/11/2020	2/26/2021	2/26/2021	2/26/2021	2/26/2021
Semivolatile Organic Compounds (µg/L)												
1,2,4,5-Tetrachlorobenzene	5	10 U	NA	NA	10 UJ	NA	NA	10 UJ	NA	NA	NA	NA
1,2,4-Trichlorobenzene	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
1,2-Dichlorobenzene	3	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
1,3-Dichlorobenzene	3	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
1,4-Dichlorobenzene	3	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
1,4-Dioxane (P-Dioxane)	~	0.0942 J	NA	NA	0.156 U	NA	NA	0.15 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2,4-Dichlorophenol	1	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2,4-Dimethylphenol	1	5 U	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	NA	NA
2,4-Dinitrophenol	1	20 U	NA	NA	20 UJ	NA	NA	20 UJ	NA	NA	NA	NA
2,4-Dinitrotoluene	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2,6-Dinitrotoluene	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2-Chloronaphthalene	10	0.2 U	NA	NA	0.2 U	NA	NA	0.2 U	NA	NA	NA	NA
2-Chlorophenol	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
2-Methylnaphthalene	~	0.1 U	0.1 U	NA	0.12	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
2-Methylnaphthalene (Dissolved)	~	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
2-Methylphenol (o-Cresol)	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2-Nitroaniline	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
2-Nitrophenol	~	10 UJ	NA	NA	10 U	NA	NA	10 U	NA	NA	NA	NA
3 & 4 Methylphenol (m&p Cresol)	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
3-Nitroaniline	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
4,6-Dinitro-2-Methylphenol	~	10 U	NA	NA	10 UJ	NA	NA	10 UJ	NA	NA	NA	NA
4-Bromophenyl Phenyl Ether	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
4-Chloro-3-Methylphenol	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
4-Chloroaniline	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
4-Chlorophenyl Phenyl Ether	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
4-Nitroaniline	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
4-Nitrophenol	~	10 U	NA	NA	10 U	NA	NA	10 U	NA	NA	NA	NA
Acenaphthene	20	0.58	0.28	NA	0.3	0.07 J	NA	0.02 J	0.1 U	0.1 U	NA	NA
Acenaphthene (Dissolved)	20	NA	NA	0.31	NA	NA	0.06 J	NA	NA	NA	0.1 U	0.1 U
Acenaphthylene	~	0.1 U	0.1 U	NA	0.22	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Acenaphthylene (Dissolved)	~	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Acetophenone	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Anthracene	50	0.02 J	0.1 U	NA	0.63	0.06 J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Anthracene (Dissolved)	50	NA	NA	0.11 U	NA	NA	0.04 J	NA	NA	NA	0.1 U	0.1 U
Benzo(a)anthracene	0.002	0.1 U	0.1 U	NA	**2.2**	**0.07** J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(a)anthracene (Dissolved)	0.002	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	**0.02** J	0.1 UJ
Benzo(a)pyrene	0	0.1 U	0.1 U	NA	**2**	**0.05** J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(a)pyrene (Dissolved)	0	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Benzo(b)fluoranthene	0.002	0.1 U	0.1 U	NA	**2.2**	**0.05** J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(b)fluoranthene (Dissolved)	0.002	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	**0.02** J	0.1 UJ
Benzo(g,h,i)Perylene	~	0.1 U	0.1 U	NA	1.3	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(g,h,i)Perylene (Dissolved)	~	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Benzo(k)fluoranthene	0.002	0.1 U	0.1 U	NA	**0.77**	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(k)fluoranthene (Dissolved)	0.002	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Benzoic Acid	~	50 U	NA	NA	50 UJ	NA	NA	50 UJ	NA	NA	NA	NA
Benzyl Alcohol	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Benzyl Butyl Phthalate	50	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Biphenyl (Diphenyl)	5	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Bis(2-chloroethoxy) methane	5	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Bis(2-chloroethyl) ether (2-chloroethyl ether)	1	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Bis(2-chloroisopropyl) ether	5	2 UJ	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	5	2.2 J	NA	NA	3 U	NA	NA	3 U	NA	NA	NA	NA
Carbazole	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Chrysene	0.002	0.1 U	0.1 U	NA	**2.1**	**0.06** J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Chrysene (Dissolved)	0.002	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Dibenz(a,h)anthracene	~	0.1 U	0.1 U	NA	0.31	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Dibenz(a,h)anthracene (Dissolved)	~	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Dibenzofuran	~	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Dibutyl phthalate	50	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Diethyl phthalate	50	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Dimethyl phthalate	50	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Dioctyl phthalate	50	5 U	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	NA	NA
Fluoranthene	50	0.05 J	0.1 U	NA	4	0.13	NA	0.1 U	0.1 U	0.1 U	NA	NA
Fluoranthene (Dissolved)	50	NA	NA	0.11 U	NA	NA	0.04 J	NA	NA	NA	0.1 U	0.1 U
Fluorene	50	0.05 J	0.1 U	NA	0.31	0.09 J	NA	0.1 U	0.1 U	0.1 U	NA	NA
Fluorene (Dissolved)	50	NA	NA	0.11 U	NA	NA	0.07 J	NA	NA	NA	0.1 U	0.1 U
Hexachlorobenzene	0.04	0.8 U	NA	NA	0.8 U	NA	NA	0.8 U	NA	NA	NA	NA
Hexachlorobutadiene	0.5	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 UJ	NA	NA	NA	NA
Hexachlorocyclopentadiene	5	20 U	NA	NA	20 UJ	NA	NA	20 UJ	NA	NA	NA	NA
Hexachloroethane	5	0.8 U	NA	NA	0.8 U	NA	NA	0.8 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.002	0.1 U	0.1 U	NA	**1.2**	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Indeno(1,2,3-cd)pyrene (Dissolved)	0.002	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Isophorone	50	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Naphthalene	10	0.05 J	0.1 U	NA	0.28	0.1 U	NA	0.1 U	0.1 U	0.1 U	NA	NA
Naphthalene (Dissolved)	10	NA	NA	0.11 U	NA	NA	0.1 U	NA	NA	NA	0.1 U	0.1 U
Nitrobenzene	0.4	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
n-Nitrosodi-N-Propylamine	~	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
n-Nitrosodiphenylamine	50	2 U	NA	NA	2 U	NA	NA	2 U	NA	NA	NA	NA
Pentachlorophenol	1	0.8 UJ	NA	NA	0.8 UJ	NA	NA	0.8 UJ	NA	NA	NA	NA
Phenanthrene	50	0.15	0.05 J	NA	2.8	0.13	NA	0.04 J	0.1 U	0.1 U	NA	NA
Phenanthrene (Dissolved)	50	NA	NA	0.08 J	NA	NA	0.07 J	NA	NA	NA	0.1 UJ	0.02 J
Phenol	1	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	NA	NA
Pyrene	50	0.06 J	0.1 U	NA	4.7	0.15	NA	0.03 J	0.1 U	0.1 U	NA	NA
Pyrene (Dissolved)	50	NA	NA	0.11 U	NA	NA	0.05 J	NA	NA	NA	0.1 U	0.1 U

Notes provided on Page 7.

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDEC SGVs**	**LMW-7**		**LMW-7**	**LMW-7**	**LMW-8**		**LMW-8**	**LMW-8**	**LMW-9**		**LMW-9**	**LMW-9**	**LMW-9**	**LMW-9**
Sample ID		**076_LMW-7**		**121_LMW-7**	**122_LMW-7 (DISSOLVED)**	**082_LMW-8**		**109_LMW-8**	**110_LMW-8 (DISSOLVED)**	**080_LMW-9**		**112_LMW-9**	**115_DUP-2**	**113_LMW-9 (DISSOLVED)**	**116_DUP-2 (DISSOLVED)**
Laboratory ID		**L2037563-03**		**L2109792-11**	**L2109792-12**	**L2037563-09**		**L2109792-03**	**L2109792-04**	**L2037563-07**		**L2109792-05**	**L2109792-07**	**L2109792-06**	**L2109792-08**
Sample Date		**9/10/2020**		**2/26/2021**	**2/26/2021**	**9/11/2020**		**2/26/2021**	**2/26/2021**	**9/11/2020**		**2/26/2021**	**2/26/2021**	**2/26/2021**	**2/26/2021**
Pesticides (µg/L)															
4,4'-DDD	0.3	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
4,4'-DDE	0.2	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
4,4'-DDT	0.2	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
Aldrin	0	*0.014*	UJ	NA	NA	*0.014*	UJ	NA	NA	*0.014*	UJ	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	0.01	*0.014*	UJ	NA	NA	*0.014*	UJ	NA	NA	*0.014*	UJ	NA	NA	NA	NA
Alpha Chlordane	~	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Alpha Endosulfan	~	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Beta Endosulfan	~	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
Chlordane (alpha and gamma)	0.05	*0.143*	UJ	NA	NA	*0.143*	UJ	NA	NA	*0.143*	UJ	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Dieldrin	0.004	*0.029*	UJ	NA	NA	*0.029*	UJ	NA	NA	*0.029*	UJ	NA	NA	NA	NA
Endosulfan Sulfate	~	0.029	UJ	NA	NA	0.029	U	NA	NA	0.029	U	NA	NA	NA	NA
Endrin	0	*0.029*	UJ	NA	NA	*0.029*	UJ	NA	NA	*0.029*	UJ	NA	NA	NA	NA
Endrin Aldehyde	5	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
Endrin Ketone	5	0.029	UJ	NA	NA	0.029	UJ	NA	NA	0.029	UJ	NA	NA	NA	NA
Gamma Bhc (Lindane)	0.05	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Gamma Chlordane	~	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Heptachlor	0.04	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Heptachlor Epoxide	0.03	0.014	UJ	NA	NA	0.014	UJ	NA	NA	0.014	UJ	NA	NA	NA	NA
Methoxychlor	35	0.143	UJ	NA	NA	0.143	UJ	NA	NA	0.143	UJ	NA	NA	NA	NA
Toxaphene	0.06	*0.143*	UJ	NA	NA	*0.143*	UJ	NA	NA	*0.143*	UJ	NA	NA	NA	NA
Herbicides (µg/L)															
2,4,5-T (Trichlorophenoxyacetic Acid)	35	2	UJ	NA	NA	2	U	NA	NA	2	U	NA	NA	NA	NA
2,4-D (Dichlorophenoxyacetic Acid)	50	10	U	NA	NA	10	U	NA	NA	10	U	NA	NA	NA	NA
Silvex (2,4,5-Tp)	0.26	*2*	U	NA	NA	*2*	U	NA	NA	*2*	U	NA	NA	NA	NA
Polychlorinated Biphenyls (µg/L)															
PCB-1016 (Aroclor 1016)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.045	J	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1262 (Aroclor 1262)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
PCB-1268 (Aroclor 1268)	~	0.083	U	NA	NA	0.083	U	NA	NA	0.083	U	NA	NA	NA	NA
Total PCBs	0.09	0.083	U	NA	NA	0.083	U	NA	NA	0.045	J	NA	NA	NA	NA
Inorganics (µg/L)															
Aluminum	~	36.6		NA	NA	1,920		NA	NA	6.31	J	NA	NA	NA	NA
Aluminum (Dissolved)	~	11.9		NA	NA	75.6		NA	NA	4.52	J	NA	NA	NA	NA
Antimony	3	*4*	U	NA	NA	2.06	J	NA	NA	*4*	U	NA	NA	NA	NA
Antimony (Dissolved)	3	*4*	U	NA	NA	1.23	J	NA	NA	2.5	J	NA	NA	NA	NA
Arsenic	25	0.68		NA	NA	3.29		NA	NA	0.44	J	NA	NA	NA	NA
Arsenic (Dissolved)	25	0.53		NA	NA	1.28		NA	NA	0.29	J	NA	NA	NA	NA
Barium	1,000	178.7		NA	NA	276.8		NA	NA	160.9		NA	NA	NA	NA
Barium (Dissolved)	1,000	140.5		NA	NA	227.8		NA	NA	149.5		NA	NA	NA	NA
Beryllium	3	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Beryllium (Dissolved)	3	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Cadmium	5	0.2	U	NA	NA	0.21		NA	NA	0.2	U	NA	NA	NA	NA
Cadmium (Dissolved)	5	0.2	U	NA	NA	0.2	U	NA	NA	0.2	U	NA	NA	NA	NA
Calcium	~	81,900		NA	NA	200,000		NA	NA	104,000	J	NA	NA	NA	NA
Calcium (Dissolved)	~	91,800		NA	NA	203,000		NA	NA	107,000		NA	NA	NA	NA
Chromium, Hexavalent	50	3	J	NA	NA	10	U	NA	NA	3	J	NA	NA	NA	NA
Chromium, Total	50	0.23	J	NA	NA	4.15		NA	NA	1	U	NA	NA	NA	NA
Chromium, Total (Dissolved)	50	0.18	J	NA	NA	0.19	J	NA	NA	1	U	NA	NA	NA	NA
Chromium, Trivalent	~	10	U	NA	NA	10	U	NA	NA	10	U	NA	NA	NA	NA
Cobalt	~	0.2	J	NA	NA	4.08		NA	NA	0.3	J	NA	NA	NA	NA
Cobalt (Dissolved)	~	0.19	J	NA	NA	1.77		NA	NA	0.3	J	NA	NA	NA	NA
Copper	200	0.51	J	NA	NA	13.49		NA	NA	1	U	NA	NA	NA	NA
Copper (Dissolved)	200	1	U	NA	NA	0.86	J	NA	NA	1	U	NA	NA	NA	NA
Iron	300	**3,740**		NA	NA	**4,210**		NA	NA	**3,010**		NA	NA	NA	NA
Iron (Dissolved)	300	32.2	J	NA	NA	185		NA	NA	**896**		NA	NA	NA	NA
Lead	25	3.17		NA	NA	**68.6**		NA	NA	1	U	NA	NA	NA	NA
Lead (Dissolved)	25	1	U	NA	NA	2.54		NA	NA	1	U	NA	NA	NA	NA
Magnesium	35,000	18,700		NA	NA	**118,000**		NA	NA	16,100		NA	NA	NA	NA
Magnesium (Dissolved)	35,000	19,600		NA	NA	**117,000**		NA	NA	16,400		NA	NA	NA	NA
Manganese	300	**486.1**		NA	NA	**429.1**		NA	NA	**425.7**		NA	NA	NA	NA
Manganese (Dissolved)	300	**514**		NA	NA	**447.5**		NA	NA	**422.1**		NA	NA	NA	NA
Mercury	0.7	0.2	U	NA	NA	**0.77**		NA	NA	0.2	U	NA	NA	NA	NA
Mercury (Dissolved)	0.7	0.2	U	NA	NA	0.2	U	NA	NA	0.2	U	NA	NA	NA	NA
Nickel	100	0.68	J	NA	NA	8.66		NA	NA	2	U	NA	NA	NA	NA
Nickel (Dissolved)	100	0.63	J	NA	NA	3.2		NA	NA	2	U	NA	NA	NA	NA
Potassium	~	15,500		NA	NA	32,200		NA	NA	11,000		NA	NA	NA	NA
Potassium (Dissolved)	~	17,000		NA	NA	33,800		NA	NA	11,100		NA	NA	NA	NA
Selenium	10	5	U	NA	NA	3.14	J	NA	NA	5	U	NA	NA	NA	NA
Selenium (Dissolved)	10	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	NA	NA
Silver	50	0.4	U	NA	NA	0.4	U	NA	NA	0.4	U	NA	NA	NA	NA
Silver (Dissolved)	50	0.4	U	NA	NA	0.4	U	NA	NA	0.4	U	NA	NA	NA	NA
Sodium	20,000	**67,600**		NA	NA	**186,000**		NA	NA	**36,800**	J	NA	NA	NA	NA
Sodium (Dissolved)	20,000	**72,300**		NA	NA	**182,000**		NA	NA	**37,400**		NA	NA	NA	NA
Thallium	0.5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Thallium (Dissolved)	0.5	0.5	U	NA	NA	0.5	U	NA	NA	0.5	U	NA	NA	NA	NA
Vanadium	~	5	U	NA	NA	6.56		NA	NA	5	U	NA	NA	NA	NA
Vanadium (Dissolved)	~	5	U	NA	NA	5	U	NA	NA	5	U	NA	NA	NA	NA
Zinc	2,000	3.59	J	NA	NA	77.29		NA	NA	3.47	J	NA	NA	NA	NA
Zinc (Dissolved)	2,000	5.69	J	NA	NA	24.8		NA	NA	10	U	NA	NA	NA	NA

Notes provided on Page 7.

Table 6A
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

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 (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Detected analytical results above NYSDEC SGVs are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample 074_DUP-1 is a duplicate sample of 073_LMW-1 and sample 115_DUP-2 is a duplicate sample of 116_DUP-2 (DISSOLVED).
6. ~ = Regulatory limit for this analyte does not exist
7. µg/l = micrograms per liter
8. NA = Not analyzed

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 6B
Remedial Investigation Report
Remedial Investigation Groundwater Sample Analytical Results - Emerging Contaminants

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location Sample ID Laboratory ID Sample Date	NYSDEC October 2020 Guidance Values	NYSDEC August 2020 Public Water Maximum Cotaminant Levels	LMW-1 073_LMW-1 L2037563-01 9/10/2020		LMW-1 074_DUP-1 L2037563-04 9/10/2020		LMW-3 083_LMW-3 L2037563-10 9/11/2020		LMW-4 081_LMW-4 L2037563-08 9/11/2020		LMW-6 075_LMW-6 L2037563-02 9/10/2020		LMW-7 076_LMW-7 L2037563-03 9/10/2020		LMW-8 082_LMW-8 L2037563-09 9/11/2020		LMW-9 080_LMW-9 L2037563-07 9/11/2020	
Semivolatile Organic Compounds (ng/L)																		
1,4-Dioxane (P-Dioxane)	~	1,000	64.8	J	144	U	156	U	150	U	150	U	94.2	J	156	U	150	U
Per and Polyfluoroalkyl Substances (ng/L)																		
N-ethyl perfluorooctane- sulfonamidoacetic acid (NEtFOSAA)	100	~	1.62	J	1.37	J	1.85	U	1.89	U	2.53	J	3.5	J	1.91	U	1.84	U
N-methyl perfluorooctane- sulfonamidoacetic acid (NMeFOSAA)	100	~	3.02		2.14		1.85	U	1.89	U	5.34	J	5.94		1.91	U	1.84	U
Perfluorobutanesulfonic Acid (PFBS)	100	~	6.51	J	4.61	J	2.73		4.45		2.27		2.71		4.09		1.54	J
Perfluorobutanoic acid (PFBA)	100	~	6.09		6.1		8.95		14.8		7.34		5.17		7.92		3.7	
Perfluorodecanesulfonic acid (PFDS)	100	~	1.86	U	1.85	U	1.85	UJ	1.89	UJ	1.83	U	1.85	U	1.91	UJ	1.84	U
Perfluorodecanoic acid (PFDA)	100	~	0.554	J	1.85	U	1.85	U	0.4	J	1.24	J	0.686	J	0.492	J	0.303	J
Perfluorododecanoic Acid (PFDoA)	100	~	0.687	J	1.85	U	1.85	U	1.89	U	1.38	J	1.85	U	1.91	U	1.84	U
Perfluoroheptanesulfonic acid (PFHpS)	100	~	1.86	U	0.776	J	1.85	U	1.89	U	0.997	J	0.697	J	1.91	U	1.84	U
Perfluoroheptanoic acid (PFHpA)	100	~	4.93		4.93		43.9		55.2		4.94		1.54	J	26.6		10.1	
Perfluorohexanesulfonic Acid (PFHxS)	100	~	6.15		6.28	J	0.786	J	2.1		2.29		2.24		2.95		0.683	J
Perfluorohexanoic Acid (PFHxA)	100	~	8.27		7.81		21.7		28.1		6.43		3.48	U	10.6		6.59	
Perfluorononanoic Acid (PFNA)	100	~	1.52	J	1.37	J	0.809	J	0.775	J	1.87		2.4		0.557	J	0.591	J
Perfluorooctanesulfonamide (FOSA)	100	~	1.86	U	1.85	U	1.85	U	1.89	U	1.83	U	1.85	U	1.91	U	1.84	U
Perfluorooctanesulfonic acid (PFOS)	10	~	**30.9**	J	**31**	J	6.87		6.37		**33.5**	J	**62.8**	J	8.54	J	6.86	J
Perfluorooctanoic Acid (PFOA)	10	~	**21.2**		**21.6**		**33.1**		**31.8**		9.01		8.85		**43.4**		7.53	
Perfluoropentanoic Acid (PFPeA)	100	~	8.81		7.52		17.1		22.5		6.33		4.3		11.2		6.18	
Perfluorotetradecanoic Acid (PFTA)	100	~	1.86	U	1.85	U	1.85	U	0.246	J	1.83	U	1.85	U	1.91	U	1.84	U
Perfluorotridecanoic Acid (PFTrDA)	100	~	1.86	U	1.85	U	1.85	U	1.89	U	1.83	U	1.85	U	1.91	U	1.84	U
Perfluoroundecanoic Acid (PFUnA)	100	~	0.513	J	1.85	U	1.85	U	1.89	U	1.44	J	1.85	U	1.91	U	1.84	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	100	~	1.86	UJ	1.85	UJ	1.85	UJ	1.89	UJ	1.83	UJ	1.85	UJ	1.91	UJ	1.84	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	100	~	4.25	J	5.53	J	1.85	U	8.84		2.2	J	1.79	J	1.91	U	1.84	U
Total PFOA and PFOS	~	~	52.1		52.6		40		38.2		42.5		71.7		51.9		14.4	
Total PFAS	500	~	116		116		158		193		98.3		119		137		64.3	

Notes:

1. Groundwater sample analytical results for PFAS compounds are compared to the New York State Department of Environmental Conservation (NYSDEC) Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) (October 2020).
2. Groundwater sample analytical results for 1,4-dioxane are compared to the NYSDEC Volume A (Title 10) Subpart 5-1.51 Public Water Systems Maximum Contaminant Levels (August 2020).
3. Detected analytical results above NYSDEC October 2020 Guidance Values or NYSDEC August 2020 Maximum Contamination Levels are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC October 2020 Guidance Values or NYSDEC August 2020 Maximum Contamination Levels are italicized.
5. Sample 074_DUP-1 is a duplicate sample of 073_LMW-1.
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 7
Remedial Investigation Report
Remedial Investigation Soil Vapor Analytical Results Summary

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	**NYSDOH Decision Matrices Minimum Concentrations**	**AMBIENT-1**		**AMBIENT-2**		**LSV-5**		**LSV-6**		**LSV-7**		**LSV-8**		**LSV-9**		**LSV-10**		**LSV-11**	
Sample ID		**085_AMBIENT-1**		**095_AMBIENT-2**		**097_LSV-5**		**099_LSV-6**		**093_LSV-7**		**092_LSV-8**		**100_LSV-9**		**101_LSV-10**		**091_LSV-11**	
Laboratory ID		**L2038163-01**		**L2038163-11**		**L2038163-13**		**L2038163-15**		**L2038163-09**		**L2038163-08**		**L2038163-16**		**L2038163-17**		**L2038163-07**	
Sample Date		**9/14/2020**		**9/15/2020**		**9/15/2020**		**9/15/2020**		**9/14/2020**		**9/14/2020**		**9/15/2020**		**9/15/2020**		**9/14/2020**	
Sample Depth (feet bgs)		**---**		**---**		**3.5**		**3.5**		**7**		**7**		**3**		**6**		**7.5**	
Sample Type		**AA**		**AA**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**	
Volatile Organic Compounds (µg/m³)																			
1,1,1-Trichloroethane	100	1.09	U	1.09	U	1.09	U	1.09	U	1.95	U	6.82	U	1.09	U	1.09	U	13.6	U
1,1,2,2-Tetrachloroethane	~	1.37	U	1.37	U	1.37	U	1.37	U	2.45	U	8.58	U	1.37	U	1.37	U	17.2	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	1.53	U	1.53	U	1.53	U	1.53	U	2.74	U	9.58	U	1.53	U	1.53	U	19.2	U
1,1,2-Trichloroethane	~	1.09	U	1.09	U	1.09	U	1.09	U	1.95	U	6.82	U	1.09	U	1.09	U	13.6	U
1,1-Dichloroethane	~	0.809	U	0.809	U	0.809	U	0.809	U	1.44	U	5.06	U	0.809	U	0.809	U	10.1	U
1,1-Dichloroethene	6	0.793	U	0.793	U	0.793	U	0.793	U	1.42	U	4.96	U	0.793	U	0.793	U	*9.91*	U
1,2,4-Trichlorobenzene	~	1.48	U	1.48	U	1.48	U	1.48	U	2.65	U	9.28	U	1.48	U	1.48	U	18.6	U
1,2,4-Trimethylbenzene	~	1.59		0.983	U	0.983	U	1		1.76	U	6.15	U	0.983	U	2.29		12.3	U
1,2-Dibromoethane (Ethylene Dibromide)	~	1.54	U	1.54	U	1.54	U	1.54	U	2.74	U	9.61	U	1.54	U	1.54	U	19.2	U
1,2-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	1.2	U	2.15	U	7.52	U	1.2	U	1.2	U	15	U
1,2-Dichloroethane	~	0.809	U	0.809	U	0.809	U	0.809	U	1.44	U	5.06	U	0.809	U	0.809	U	10.1	U
1,2-Dichloropropane	~	0.924	U	0.924	U	0.924	U	0.924	U	1.65	U	5.78	U	0.924	U	0.924	U	11.6	U
1,2-Dichlorotetrafluoroethane	~	1.4	U	1.4	U	1.4	U	1.4	U	2.5	U	8.74	U	1.4	U	1.4	U	17.5	U
1,3,5-Trimethylbenzene (Mesitylene)	~	0.983	U	0.983	U	0.983	U	0.983	U	1.76	U	6.15	U	0.983	U	1.12		12.3	U
1,3-Butadiene	~	0.535		0.442	U	0.442	U	0.442	U	0.79	U	2.77	U	0.442	U	0.442	U	5.53	U
1,3-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	1.2	U	2.15	U	7.52	U	1.2	U	1.2	U	15	U
1,4-Dichlorobenzene	~	1.2	U	1.2	U	1.2	U	1.2	U	2.15	U	7.52	U	1.2	U	1.2	U	15	U
1,4-Dioxane (P-Dioxane)	~	0.721	U	0.721	U	0.721	U	0.721	U	1.29	U	4.5	U	0.721	U	0.721	U	9.01	U
2,2,4-Trimethylpentane	~	2.52		1.64		0.934	U	0.934	U	1.87		5.84	U	22.8		0.934	U	11.7	U
2-Hexanone	~	0.82	U	0.82	U	12.8		4.75		68		116		20.7		34.8		10.2	U
4-Ethyltoluene	~	0.983	U	0.983	U	0.983	U	0.983	U	1.76	U	6.15	U	0.983	U	0.983	U	12.3	U
Acetone	~	7.22	J	3.75	J	55.1	J	12.6	J	146	J	646	J	85	J	51.1	J	29.7	UJ
Allyl Chloride (3-Chloropropene)	~	0.626	U	0.626	U	0.626	U	0.626	U	1.12	U	3.91	U	0.626	U	0.626	U	7.83	U
Benzene	~	3.48		0.802		0.639	U	0.639	U	1.14	U	3.99	U	4.25		0.725		7.99	U
Benzyl Chloride	~	1.04	UJ	1.04	UJ	1.04	UJ	1.04	UJ	1.85	UJ	6.47	UJ	1.04	UJ	1.04	UJ	12.9	UJ
Bromodichloromethane	~	1.34	U	1.34	U	1.34	U	1.34	U	2.39	U	8.37	U	1.34	U	1.34	U	16.7	U
Bromoethene	~	0.874	U	0.874	U	0.874	U	0.874	U	1.56	U	5.47	U	0.874	U	0.874	U	10.9	U
Bromoform	~	2.07	U	2.07	U	2.07	U	2.07	U	3.69	U	12.9	U	2.07	U	2.07	U	25.8	U
Bromomethane	~	0.777	U	0.777	U	0.777	U	0.777	U	1.39	U	4.85	U	0.777	U	0.777	U	9.71	U
Carbon Disulfide	~	0.623	U	0.623	U	0.623	U	25.7		5.57		3.89	U	1.38		1.19		10.7	
Carbon Tetrachloride	6	1.26	U	1.26	U	1.26	U	1.26	U	2.25	U	*7.86*	U	1.26	U	1.26	U	*15.7*	U
Chlorobenzene	~	0.921	U	0.921	U	0.921	U	0.921	U	1.64	U	5.76	U	0.921	U	0.921	U	11.5	U
Chloroethane	~	0.528	U	0.528	U	0.528	U	0.528	U	0.942	U	3.3	U	0.528	U	0.528	U	6.6	U
Chloroform	~	0.977	U	0.977	U	6.4		6.45		1.79		6.1	U	5.81		1.09		12.2	U
Chloromethane	~	0.892		0.843		0.413	U	0.413	U	0.737	U	2.58	U	0.413	U	0.413	U	5.16	U
Cis-1,2-Dichloroethene	6	0.793	U	0.793	U	0.793	U	0.793	U	1.42	U	4.96	U	0.793	U	0.793	U	*9.91*	U
Cis-1,3-Dichloropropene	~	0.908	U	0.908	U	0.908	U	0.908	U	1.62	U	5.67	U	0.908	U	0.908	U	11.3	U
Cyclohexane	~	0.706		0.688	U	0.688	U	0.688	U	1.23	U	4.3	U	5.16		1.03		1,540	
Dibromochloromethane	~	1.7	U	1.7	U	1.7	U	1.7	U	3.04	U	10.6	U	1.7	U	1.7	U	21.3	U
Dichlorodifluoromethane	~	2.07		2.09		1.66		2.18		1.77	U	6.18	U	0.989	U	1.47		12.4	U
Ethanol	~	20.2		9.42	U	9.42	U	9.42	U	16.8	U	58.8	U	9.42	U	9.42	U	118	U
Ethyl Acetate	~	1.8	U	1.8	U	1.8	U	1.8	U	3.22	U	11.2	U	1.8	U	1.8	U	22.5	U
Ethylbenzene	~	1.17		0.869	U	0.869	U	0.869	U	1.55	U	5.43	U	0.869	U	2.95		10.9	U
Hexachlorobutadiene	~	2.13	U	2.13	U	2.13	U	2.13	U	3.81	U	13.3	U	2.13	U	2.13	U	26.7	U
Isopropanol	~	2.61		1.98		1.23	U	1.23	U	2.43		18.6		2		1.23	U	20.4	
M,P-Xylene	~	3.17		1.74	U	1.74	U	1.74	U	3.1	U	10.9	U	1.74	U	9.08		21.7	U
Methyl Ethyl Ketone (2-Butanone)	~	1.47	U	1.47	U	88.5		22.8		324		1,160		113		181		879	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	2.05	U	2.05	U	2.05	U	2.05	U	3.66	U	12.8	U	2.05	U	2.3		25.6	U
Methylene Chloride	100	1.74	U	1.74	U	1.74	U	1.74	U	3.1	U	10.8	U	1.74	U	1.74	U	21.7	U
n-Heptane	~	1.07		0.82	U	0.82	U	0.82	U	2.04		5.12	U	1.35		4.14		422	
n-Hexane	~	1.74		0.789		0.705	U	0.705	U	1.65		4.69		2.08		2.36		1,190	
o-Xylene (1,2-Dimethylbenzene)	~	1.25		0.869	U	0.869	U	0.869	U	1.55	U	5.43	U	0.869	U	3.57		10.9	U
Styrene	~	0.852	U	0.852	U	0.852	U	0.852	U	1.52	U	5.32	U	0.852	U	0.852	U	10.6	U
Tert-Butyl Alcohol	~	1.52	U	1.52	U	1.52	U	1.52	U	2.71	U	9.46	U	1.52	U	1.52	U	18.9	U
Tert-Butyl Methyl Ether	~	0.721	U	0.721	U	0.721	U	0.721	U	1.69		4.51	U	0.721	U	0.937		9.01	U
Tetrachloroethene (PCE)	100	1.36	U	1.36	U	22.4		9.9		2.42	U	8.48	U	7.93		7.73		17	U
Tetrahydrofuran	~	1.47	U	1.47	U	1.47	U	6.99		2.63	U	9.2	U	1.47	U	24.5		18.4	U
Toluene	~	5.31		1.93		0.754	U	0.765		1.35	U	4.71	U	0.754	U	2.71		9.42	U
Total Xylenes	~	4.43		0.869	U	0.869	U	0.869	U	1.55	U	5.43	U	0.869	U	12.6		10.9	U
Trans-1,2-Dichloroethene	~	0.793	U	0.793	U	0.793	U	0.793	U	1.42	U	4.96	U	0.793	U	0.793	U	9.91	U
Trans-1,3-Dichloropropene	~	0.908	U	0.908	U	0.908	U	0.908	U	1.62	U	5.67	U	0.908	U	0.908	U	11.3	U
Trichloroethene (TCE)	6	1.07	U	1.07	U	1.07	U	1.07	U	1.92	U	*6.72*	U	1.07	U	1.07	U	*13.4*	U
Trichlorofluoromethane	~	1.12	U	1.12	U	2.05		1.12		2.01	U	7.02	U	1.12	U	1.12	U	43.9	
Vinyl Chloride	6	0.511	U	0.511	U	0.511	U	0.511	U	0.913	U	3.2	U	0.511	U	0.511	U	*6.39*	U

Notes provided on Page 3.

Table 7
Remedial Investigation Report
Remedial Investigation Soil Vapor Analytical Results Summary

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Location	NYSDOH Decision Matrices Minimum Concentrations	AMBIENT-1		AMBIENT-2		LSV-12		LSV-13		LSV-13		LSV-14		LSV-15		LSV-16		LSV-17		LSV-18	
Sample ID		085_AMBIENT-1		095_AMBIENT-2		090_LSV-12		086_LSV-13		087_DUP-1		096_LSV-14		098_LSV-15		094_LSV-16		089_LSV-17		088_LSV-18	
Laboratory ID		L2038163-01		L2038163-11		L2038163-06		L2038163-02		L2038163-03		L2038163-12		L2038163-14		L2038163-10		L2038163-05		L2038163-04	
Sample Date		9/14/2020		9/15/2020		9/14/2020		9/14/2020		9/14/2020		9/15/2020		9/15/2020		9/14/2020		9/14/2020		9/14/2020	
Sample Depth (feet bgs)		---		---		8		3		3		4		3		3.5		7.5		4	
Sample Type		AA		AA		SV		SV		SV		SV		SV		SV		SV		SV	
Volatile Organic Compounds (µg/m³)																					
1,1,1-Trichloroethane	100	1.09	U	1.09	U	3.41	U	1.95	U	1.95	U	5.46	U	1.09	U	2.73	U	2.18	U	1.36	U
1,1,2,2-Tetrachloroethane	~	1.37	U	1.37	U	4.29	U	2.45	U	2.45	U	6.87	U	1.37	U	3.43	U	2.75	U	1.72	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	1.53	U	1.53	U	4.79	U	2.74	U	2.74	U	7.66	U	1.53	U	3.83	U	3.07	U	1.92	U
1,1,2-Trichloroethane	~	1.09	U	1.09	U	3.41	U	1.95	U	1.95	U	5.46	U	1.09	U	2.73	U	2.18	U	1.36	U
1,1-Dichloroethane	~	0.809	U	0.809	U	2.53	U	1.44	U	1.44	U	4.05	U	0.809	U	2.02	U	1.62	U	1.01	U
1,1-Dichloroethene	6	0.793	U	0.793	U	2.48	U	1.42	U	1.42	U	3.96	U	0.793	U	1.98	U	1.59	U	0.991	U
1,2,4-Trichlorobenzene	~	1.48	U	1.48	U	4.64	U	2.65	U	2.65	U	7.42	U	1.48	U	3.71	U	2.97	U	1.86	U
1,2,4-Trimethylbenzene	~	1.59		0.983	U	3.07	U	1.91		1.76	U	4.92	U	0.983	U	3.53		1.97	U	1.23	U
1,2-Dibromoethane (Ethylene Dibromide)	~	1.54	U	1.54	U	4.8	U	2.74	U	2.74	U	7.69	U	1.54	U	3.84	U	3.07	U	1.92	U
1,2-Dichlorobenzene	~	1.2	U	1.2	U	3.76	U	2.15	U	2.15	U	6.01	U	1.2	U	3.01	U	2.4	U	1.5	U
1,2-Dichloroethane	~	0.809	U	0.809	U	2.53	U	1.44	U	1.44	U	4.05	U	0.809	U	2.02	U	1.62	U	1.01	U
1,2-Dichloropropane	~	0.924	U	0.924	U	2.89	U	1.65	U	1.65	U	4.62	U	0.924	U	2.31	U	1.85	U	1.16	U
1,2-Dichlorotetrafluoroethane	~	1.4	U	1.4	U	4.37	U	2.5	U	2.5	U	6.99	U	1.4	U	3.49	U	2.8	U	1.75	U
1,3,5-Trimethylbenzene (Mesitylene)	~	0.983	U	0.983	U	3.07	U	1.76	U	1.76	U	4.92	U	0.983	U	2.46	U	1.97	U	1.23	U
1,3-Butadiene	~	0.535		0.442	U	1.38	U	0.79	U	0.79	U	2.21	U	0.442	U	1.11	U	0.885	U	0.553	U
1,3-Dichlorobenzene	~	1.2	U	1.2	U	3.76	U	2.15	U	2.15	U	6.01	U	1.2	U	3.01	U	2.4	U	1.5	U
1,4-Dichlorobenzene	~	1.2	U	1.2	U	3.76	U	2.15	U	2.15	U	6.01	U	1.2	U	3.01	U	2.4	U	1.5	U
1,4-Dioxane (P-Dioxane)	~	0.721	U	0.721	U	2.25	U	1.29	U	1.29	U	3.6	U	0.721	U	1.8	U	1.44	U	0.901	U
2,2,4-Trimethylpentane	~	2.52		1.64		2.92	U	1.67	U	1.67	U	4.67	U	0.934	U	2.34	U	1.87	U	1.17	U
2-Hexanone	~	0.82	U	0.82	U	78.7		33.9		44.3		5.33		2.46		50.4		46.3		44.7	
4-Ethyltoluene	~	0.983	U	0.983	U	3.07	U	1.76	U	1.76	U	4.92	U	0.983	U	2.46	U	1.97	U	1.23	U
Acetone	~	7.22	J	3.75	J	259	J	217	J	224	J	20.6	J	2.38	UJ	66	J	77.4	J	116	J
Allyl Chloride (3-Chloropropene)	~	0.626	U	0.626	U	1.96	U	1.12	U	1.12	U	3.13	U	0.626	U	1.57	U	1.25	U	0.783	U
Benzene	~	3.48		0.802		2.27		1.14	U	1.14	U	3.19	U	0.639	U	1.6	U	1.28	U	0.799	U
Benzyl Chloride	~	1.04	UJ	1.04	UJ	3.24	UJ	1.85	UJ	1.85	UJ	5.18	UJ	1.04	UJ	2.59	UJ	2.07	UJ	1.29	UJ
Bromodichloromethane	~	1.34	U	1.34	U	4.19	U	2.39	U	2.39	U	6.7	U	1.34	U	3.35	U	2.68	U	1.67	U
Bromoethene	~	0.874	U	0.874	U	2.73	U	1.56	U	1.56	U	4.37	U	0.874	U	2.19	U	1.75	U	1.09	U
Bromoform	~	2.07	U	2.07	U	6.46	U	3.69	U	3.69	U	10.3	U	2.07	U	5.17	U	4.14	U	2.58	U
Bromomethane	~	0.777	U	0.777	U	2.43	U	1.39	U	1.39	U	3.88	U	0.777	U	1.94	U	1.55	U	0.971	U
Carbon Disulfide	~	0.623	U	0.623	U	50.1		8.91	J	6.26	J	3.11	U	0.623	U	1.56		1.25		0.779	U
Carbon Tetrachloride	6	1.26	U	1.26	U	3.93	U	2.25	U	2.25	U	*6.29*	U	1.26	U	3.15	U	2.52	U	1.57	U
Chlorobenzene	~	0.921	U	0.921	U	2.88	U	1.64	U	1.64	U	4.61	U	0.921	U	2.3	U	1.84	U	1.15	U
Chloroethane	~	0.528	U	0.528	U	1.65	U	0.942	U	0.942	U	2.64	U	0.528	U	1.32	U	1.06	U	0.66	U
Chloroform	~	0.977	U	0.977	U	4.18		8.35		8.4		11.1		1.31		2.44	U	47		48.3	
Chloromethane	~	0.892		0.843		1.29	U	0.737	U	0.737	U	2.07	U	0.413	U	1.03	U	0.826	U	0.516	U
Cis-1,2-Dichloroethene	6	0.793	U	0.793	U	2.48	U	1.42	U	1.42	U	3.96	U	0.793	U	1.98	U	1.59	U	0.991	U
Cis-1,3-Dichloropropene	~	0.908	U	0.908	U	2.84	U	1.62	U	1.62	U	4.54	U	0.908	U	2.27	U	1.82	U	1.13	U
Cyclohexane	~	0.706		0.688	U	3.86		1.58		1.62		3.44	U	0.688	U	1.72	U	1.38	U	0.861	U
Dibromochloromethane	~	1.7	U	1.7	U	5.32	U	3.04	U	3.04	U	8.52	U	1.7	U	4.26	U	3.41	U	2.13	U
Dichlorodifluoromethane	~	2.07		2.09		3.09	U	1.77	U	1.77	U	4.94	U	1.85		2.47	U	2.07		1.69	
Ethanol	~	20.2		9.42	U	29.4	U	21.5		20.2		47.1	U	9.42	U	23.6	U	18.8	U	12.6	
Ethyl Acetate	~	1.8	U	1.8	U	5.62	U	3.22	U	3.22	U	9.01	U	1.8	U	4.5	U	3.6	U	2.25	U
Ethylbenzene	~	1.17		0.869	U	2.71	U	1.55	U	1.55	U	4.34	U	0.869	U	2.17	U	1.74	U	1.09	U
Hexachlorobutadiene	~	2.13	U	2.13	U	6.67	U	3.81	U	3.81	U	10.7	U	2.13	U	5.33	U	4.27	U	2.67	U
Isopropanol	~	2.61		1.98		3.83	U	4.97		5.14		6.15	U	1.23	U	3.07	U	2.46	U	2.35	
M,P-Xylene	~	3.17		1.74	U	5.43	U	3.1	U	3.1	U	8.69	U	1.74	U	4.34	U	3.47	U	2.17	U
Methyl Ethyl Ketone (2-Butanone)	~	1.47	U	1.47	U	628		354		419		61.3		8.79		434		401		275	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	2.05	U	2.05	U	6.39	U	3.66	U	3.66	U	10.2	U	2.05	U	5.12	U	4.1	U	2.56	U
Methylene Chloride	100	1.74	U	1.74	U	5.42	U	3.1	U	3.1	U	8.69	U	1.74	U	4.34	U	3.47	U	2.17	U
n-Heptane	~	1.07		0.82	U	4.84		2		2.21		4.1	U	0.82	U	2.05	U	1.64	U	1.53	
n-Hexane	~	1.74		0.789		9.76		2.03		2.11		3.52	U	0.705	U	1.76	U	1.43		1.04	
o-Xylene (1,2-Dimethylbenzene)	~	1.25		0.869	U	2.71	U	1.55	U	1.55	U	4.34	U	0.869	U	2.17	U	1.74	U	1.09	U
Styrene	~	0.852	U	0.852	U	2.66	U	1.52	U	1.52	U	4.26	U	0.852	U	2.13	U	1.7	U	1.06	U
Tert-Butyl Alcohol	~	1.52	U	1.52	U	4.73	U	2.71	U	2.71	U	7.58	U	1.52	U	3.79	U	3.03	U	1.89	U
Tert-Butyl Methyl Ether	~	0.721	U	0.721	U	2.25	U	1.29	U	1.29	U	3.61	U	0.721	U	1.8	U	1.44	U	0.901	U
Tetrachloroethene (PCE)	100	1.36	U	1.36	U	10.1		62.6		64.9		6.78	U	9.22		9.7		37.5		27.9	
Tetrahydrofuran	~	1.47	U	1.47	U	4.6	U	2.63	U	2.63	U	7.37	U	1.47	U	3.69	U	2.95	U	1.84	U
Toluene	~	5.31		1.93		3.58		1.43		1.35	U	3.77	U	0.754	U	1.88	U	1.51	U	0.942	U
Total Xylenes	~	4.43		0.869	U	2.71	U	1.55	U	1.55	U	4.34	U	0.869	U	2.17	U	1.74	U	1.09	U
Trans-1,2-Dichloroethene	~	0.793	U	0.793	U	2.48	U	1.42	U	1.42	U	3.96	U	0.793	U	1.98	U	1.59	U	0.991	U
Trans-1,3-Dichloropropene	~	0.908	U	0.908	U	2.84	U	1.62	U	1.62	U	4.54	U	0.908	U	2.27	U	1.82	U	1.13	U
Trichloroethene (TCE)	6	1.07	U	1.07	U	3.36	U	1.92	U	1.92	U	5.37	U	1.07	U	2.69	U	2.15	U	1.34	U
Trichlorofluoromethane	~	1.12	U	1.12	U	9.5		2.01	U	2.01	U	5.62	U	1.12	U	2.81	U	5.29		22.4	
Vinyl Chloride	6	0.511	U	0.511	U	1.6	U	0.913	U	0.913	U	2.56	U	0.511	U	1.28	U	1.02	U	0.639	U

Table 7
Remedial Investigation Report
Remedial Investigation Soil Vapor Analytical Results Summary

280 West 155th Street
New York, New York
NYSDEC BCP Site No.: C231138
Langan Project No.: 100765102

Notes:

1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Ambient air sample analytical results are shown for reference only.
3. Only detected analytes are shown in the table.
4. Detected analytical results above the minimum soil vapor concentrations recommending mitigation are bolded and shaded.
5. Analytical results with reporting limits (RL) above the minimum soil vapor concentrations recommending mitigation are italicized.
6. Sample 087_DUP-1 is a duplicate of parent sample 086_LSV-13.
7. ~ = Regulatory limit for this analyte does not exist
8. ug/m^3= micrograms per cubic meter
9. AA = Ambient Air
10. SV = Soil Vapor
11. bgs = below ground surface

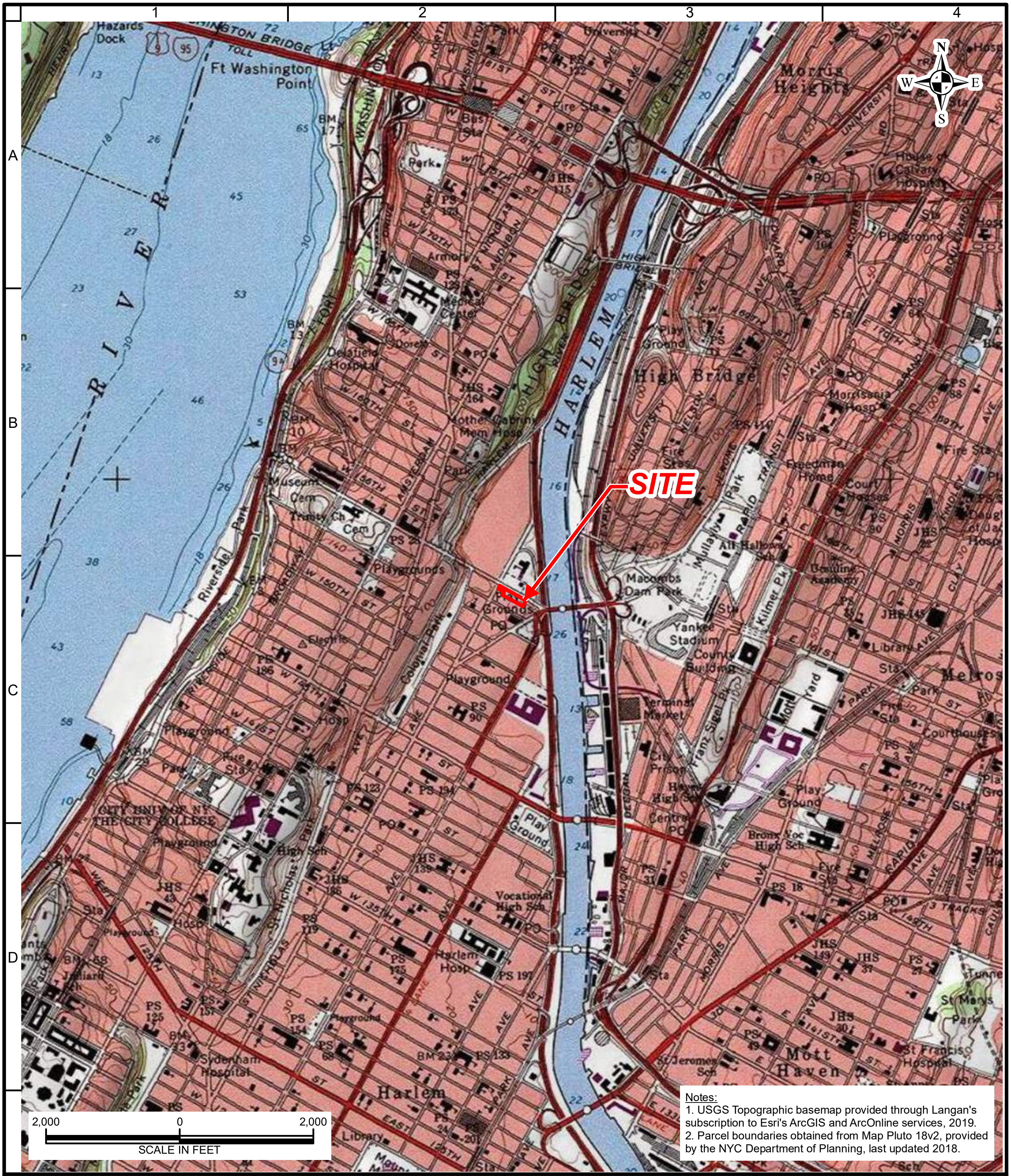
Qualifiers:

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.

FIGURES



Notes:
1. USGS Topographic basemap provided through Langan's subscription to Esri's ArcGIS and ArcOnline services, 2019.
2. Parcel boundaries obtained from Map Pluto 18v2, provided by the NYC Department of Planning, last updated 2018.

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Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138

BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)

MANHATTAN NEW YORK

Drawing Title

SITE LOCATION MAP

Project No.
100765102

Date
12/30/2020

Scale
1 " = 2,000 '

Drawn By
IHB

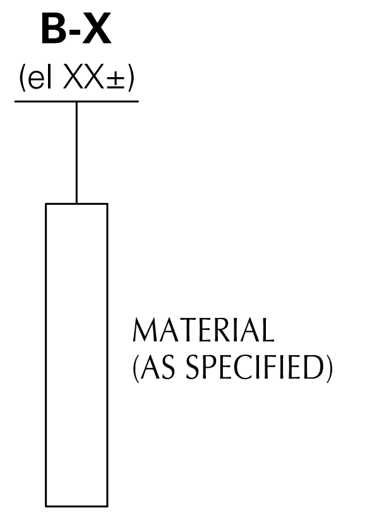
Figure
1

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 1 - Site Location Map.mxd Date: 12/30/2020 User: aruane Time: 11:32:07 AM

DRILLED BORING PROFILE A-A'

VERTICAL SCALE: 1" = 3'
HORIZONTAL SCALE: NOT TO SCALE

BORING KEY:

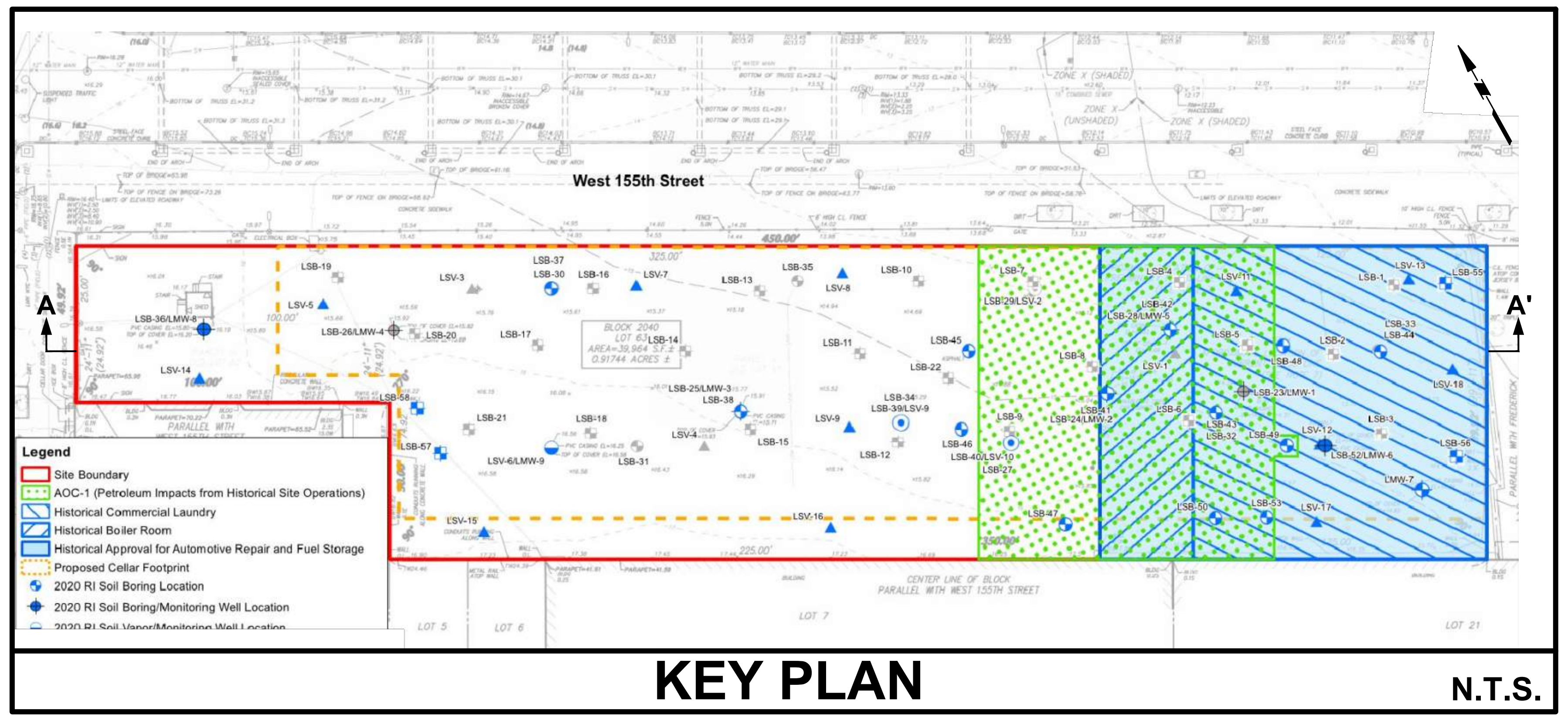


LEGEND:

B-X	DRILLED BORING IDENTIFICATION
el XX±	APPROXIMATE SURFACE ELEVATION AT THE TIME OF BORING (NAVD88)
∇	GROUNDWATER IN MONITORING WELL
▨	PETROLEUM IMPACTS OBSERVED WITHIN SOIL BORING
—	PRODUCT OBSERVED DURING MONITORING WELL GAUGING

NOTES:

1. THIS PROFILE SHOWS GENERALIZED SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. VARIATIONS IN SUBSURFACE CONDITIONS SHOULD BE EXPECTED BETWEEN BORINGS. FOR A DETAILED DESCRIPTION OF CONDITIONS ENCOUNTERED, SEE BORING LOGS INCLUDED IN APPENDIX B AND APPENDIX H.
2. ALL BORING LOCATIONS ARE APPROXIMATE. GROUND SURFACE ELEVATIONS ARE INFERRED FROM FROM A 19 AUGUST 2020 DRAFT DRAWING ENTITLED "TOPOGRAPHIC, BOUNDARY AND UTILITY SURVEY", PREPARED BY LANGAN. MONITORING WELL LOCATIONS WERE SURVEYED USING GPS LOCATING TECHNIQUES AND ARE ALSO SHOWN ON THE ASSOCIATED SURVEY.
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD88.
4. EVIDENCE OF PETROLEUM IMPACTS INCLUDE THE PRESENCE OF PRODUCT, SHEEN, ODOR, AND/OR ELEVATED PID READINGS.
5. ENVIRONMENTAL SOIL BORINGS LSB-1 THROUGH LSB-22 WERE COMPLETED BETWEEN 25 AND 26 MARCH 2019 AS PART OF THE 2019 PRE-CHARACTERIZATION INVESTIGATION. LSB-23 THROUGH LSB-35 WERE COMPLETED BETWEEN 30 AND 31 MAY 2019 AS PART OF THE 2019 PHASE II EI, AND LSB-36 THROUGH LSB-54 AS WELL AS LMW-7 AND LMW-9 WERE COMPLETED BETWEEN 28 AUGUST 2020 AND 2 SEPTEMBER 2020 AS PART OF THE 2020 REMEDIAL INVESTIGATION.



KEY PLAN

N.T.S.

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.

3 0 3
VERTICAL SCALE IN FEET

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NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
DRILLED BORING PROFILE A-A′

Project No. 100765102
Date 11/09/2020
Drawn By AC
Checked By AK
Drawing No. 2A

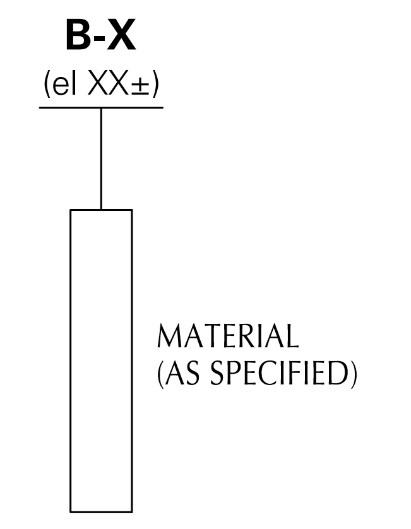
Filename: \\langan.com\data\PAR\data1\100765102\Project Data\CAD\02\SheetFiles\Geotechnical\100765102-BF201-0102.dwg Date: 12/31/2020 Time: 14:02 User: akent Style Table: Langan.stb Layout: A-A

DRILLED BORING PROFILE B-B'

VERTICAL SCALE: 1" = 3'

HORIZONTAL SCALE: NOT TO SCALE

BORING KEY:



LEGEND:

B-X	DRILLED BORING IDENTIFICATION
el XX±	APPROXIMATE SURFACE ELEVATION AT THE TIME OF BORING (NAVD88)
▽	GROUNDWATER IN MONITORING WELL
🟥	PETROLEUM IMPACTS OBSERVED WITHIN SOIL BORING
—	PRODUCT OBSERVED DURING MONITORING WELL GAUGING

NOTES:

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3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD88.
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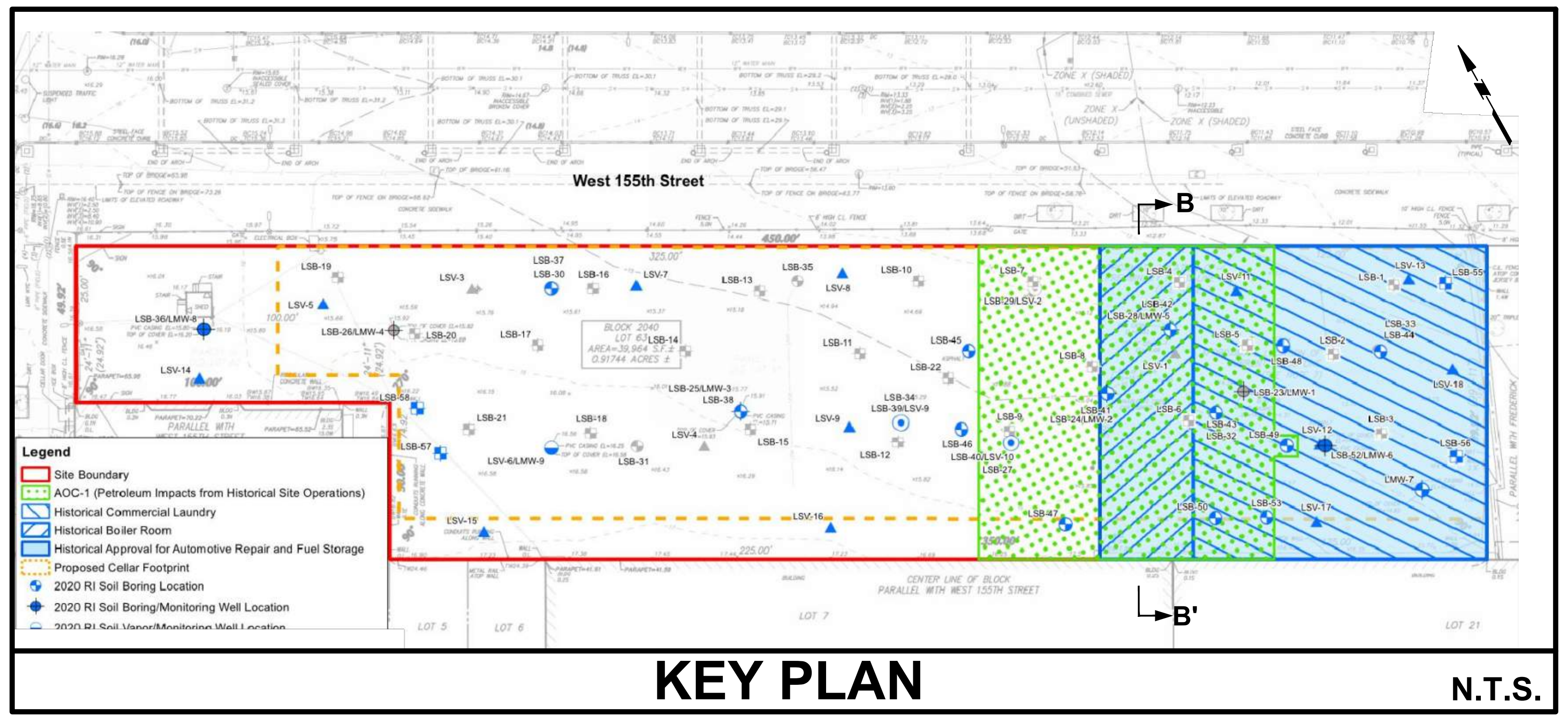

KEY PLAN

N.T.S.

3 0 3
VERTICAL SCALE IN FEET

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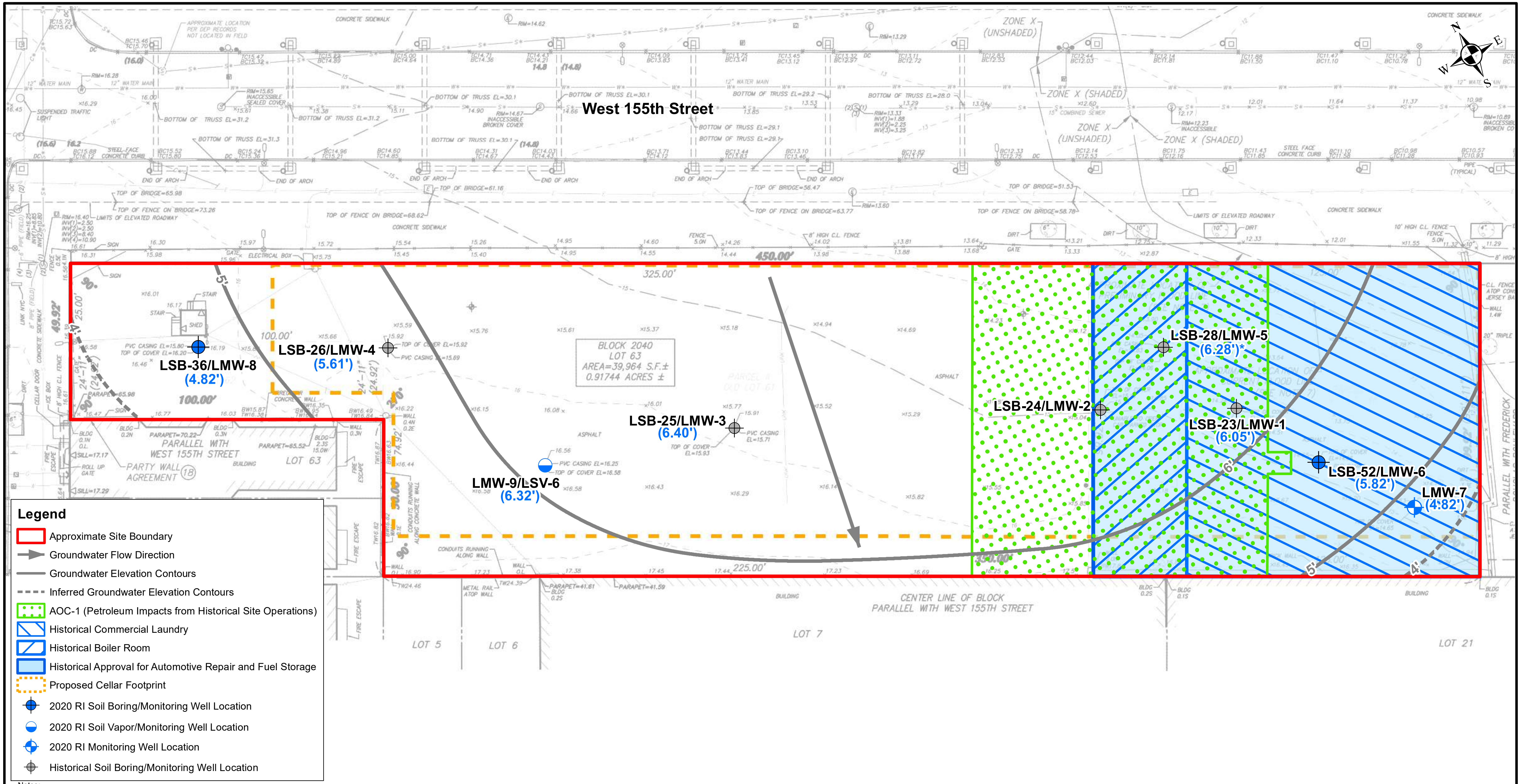
Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
DRILLED BORING PROFILE B-B′

Project No. 100765102
Date 11/09/2020
Drawn By AC
Checked By AK
Drawing No. 2B



Legend

- 🟥 Approximate Site Boundary
- ➤ Groundwater Flow Direction
- — Groundwater Elevation Contours
- - - Inferred Groundwater Elevation Contours
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▨ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- 🟧 Proposed Cellar Footprint
- ⊕ 2020 RI Soil Boring/Monitoring Well Location
- ◒ 2020 RI Soil Vapor/Monitoring Well Location
- ⊕ 2020 RI Monitoring Well Location
- ⊕ Historical Soil Boring/Monitoring Well Location

Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 6 November 2020.
3. Sample locations for the Pre-Characterization were collected using field measurements taken from the nearest property line. Sample locations for the Phase II and RI were collected using the ArcGIS Collector application on a tablet utilizing GPS location, with the exception of monitoring wells which were surveyed using GPS measurements
4. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
5. Groundwater measurements obtained on 2 September 2020.
6. LMW-2 was not accesible during the site survey performed by Langan.
7. * = Monitoring well LMW-5 contained LNAPL during the 2020 gauging event. As such, depth to groundwater could not be accurately determined. LNAPL elevation is shown for LMW-5

30 0 30
SCALE IN FEET

LANGAN

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280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138

BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)

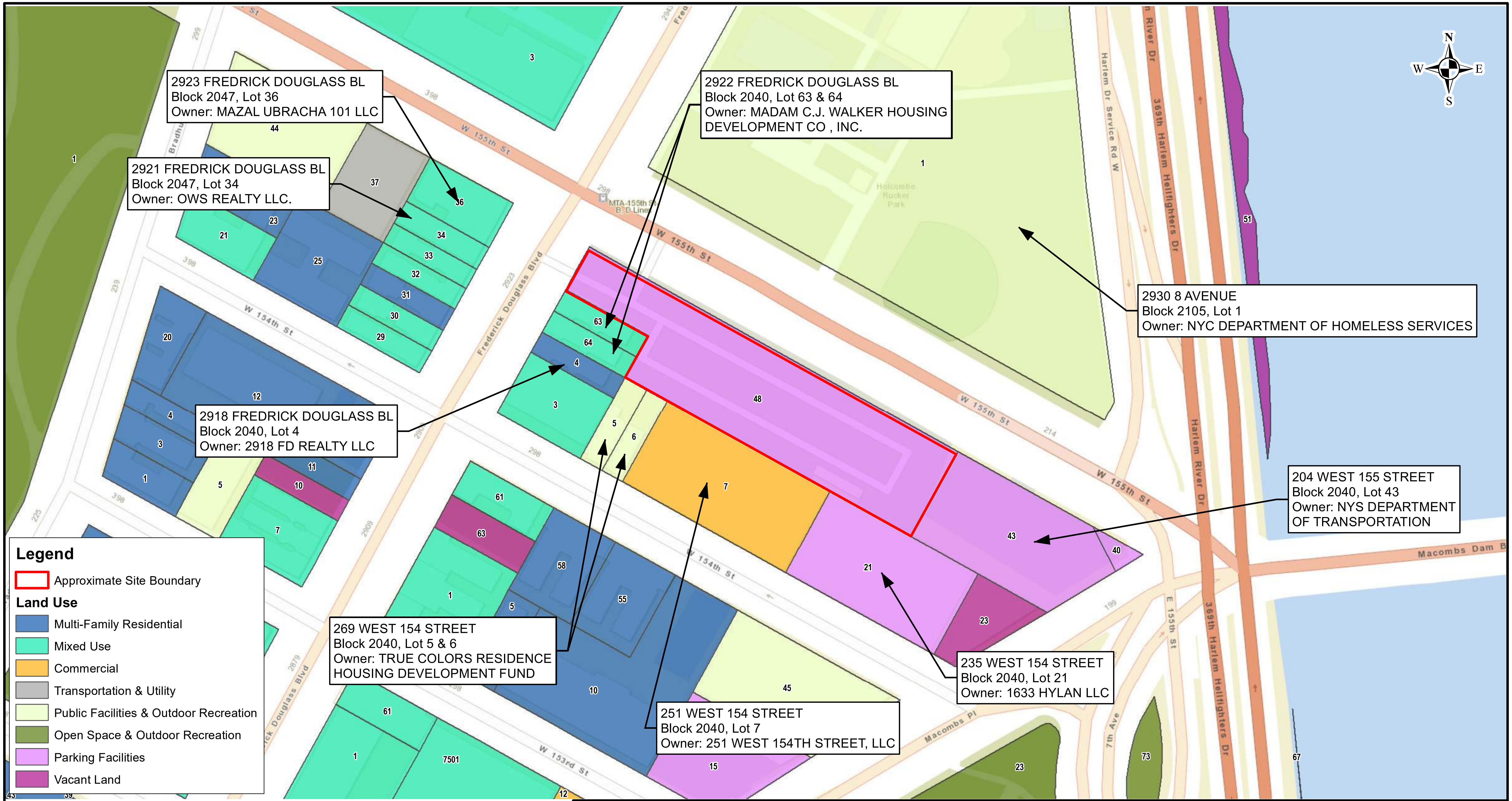
MANHATTAN NEW YORK

Drawing Title

POTENTIOMETRIC SURFACE MAP

Project No. 100765102	Figure
Date 12/30/2020	3
Scale 1 " = 30 '	
Drawn By ATR	

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 3 - Potentiometric Surface Map.mxd Date: 12/30/2020 User: aruane Time: 6:05:54 PM



2923 FREDRICK DOUGLASS BL
Block 2047, Lot 36
Owner: MAZAL UBRACHA 101 LLC

2921 FREDRICK DOUGLASS BL
Block 2047, Lot 34
Owner: OWS REALTY LLC.

2922 FREDRICK DOUGLASS BL
Block 2040, Lot 63 & 64
Owner: MADAM C.J. WALKER HOUSING DEVELOPMENT CO , INC.

2930 8 AVENUE
Block 2105, Lot 1
Owner: NYC DEPARTMENT OF HOMELESS SERVICES

2918 FREDRICK DOUGLASS BL
Block 2040, Lot 4
Owner: 2918 FD REALTY LLC

204 WEST 155 STREET
Block 2040, Lot 43
Owner: NYS DEPARTMENT OF TRANSPORTATION

269 WEST 154 STREET
Block 2040, Lot 5 & 6
Owner: TRUE COLORS RESIDENCE HOUSING DEVELOPMENT FUND

235 WEST 154 STREET
Block 2040, Lot 21
Owner: 1633 HYLAN LLC

251 WEST 154 STREET
Block 2040, Lot 7
Owner: 251 WEST 154TH STREET, LLC

Legend

- ▭ Approximate Site Boundary

Land Use

- 🟦 Multi-Family Residential
- 🟩 Mixed Use
- 🟧 Commercial
- ⬜ Transportation & Utility
- 🟨 Public Facilities & Outdoor Recreation
- 🟩 Open Space & Outdoor Recreation
- 🟪 Parking Facilities
- 🟪 Vacant Land

100 0 100
SCALE IN FEET

Notes:
1.World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
2. Parcel information from MapPLUTO 20v6 copyrighted by the New York City Department of Planning.
3. The Site was an active parking lot until November 2020. The Site has since been vacated

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280 WEST 155TH STREET DEVELOPMENT

NYSDEC BCP Site No.: C231138

BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)

MANHATTAN NEW YORK

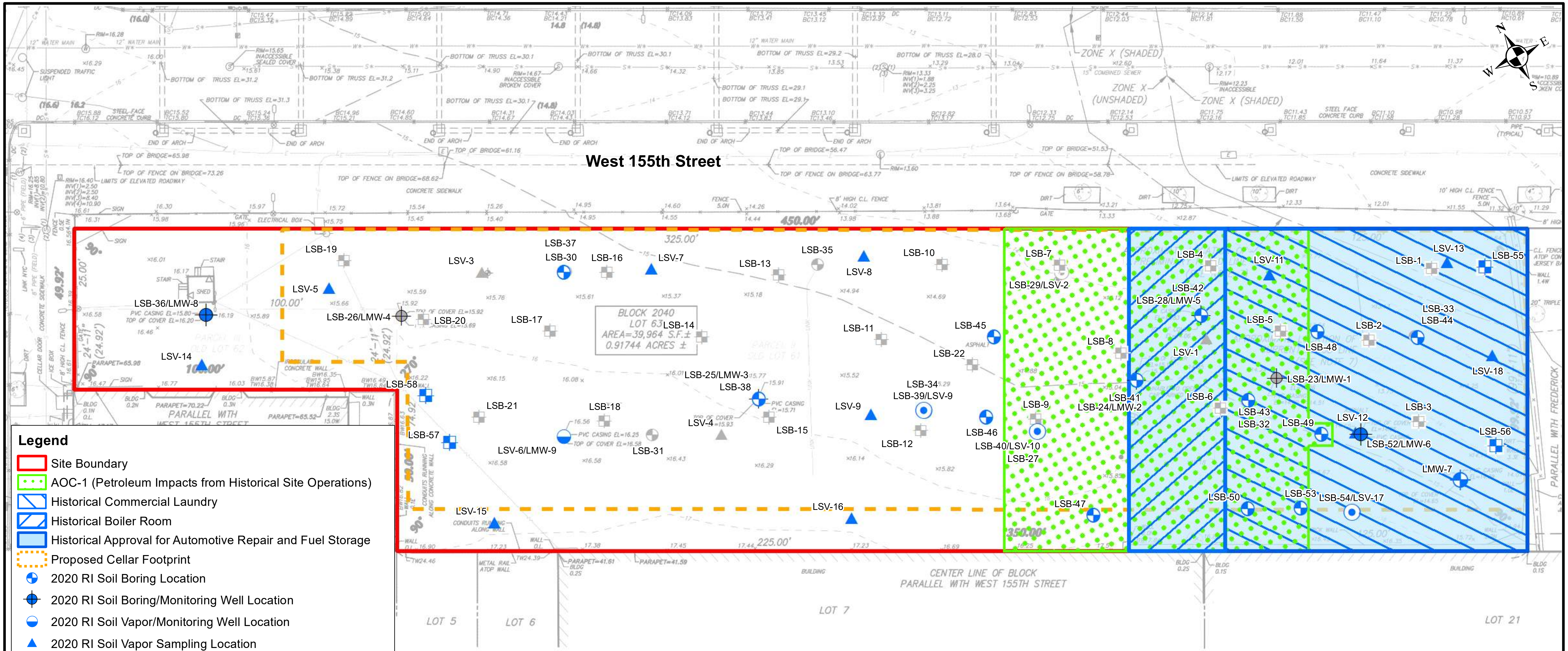
Drawing Title

ADJACENT PROPERTY AND SURROUNDING LAND USE MAP

Project No.	100765102
Date	12/30/2020
Scale	1 " = 100 '
Drawn By	ATR

Figure
4

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 4 - Adjacent Property and Surrounding Land Use.mxd Date: 12/30/2020 User: aruane Time: 11:30:19 AM



Legend

- 🟥 Site Boundary
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▨ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- ⬚ Proposed Cellar Footprint
- ◐ 2020 RI Soil Boring Location
- ⊕ 2020 RI Soil Boring/Monitoring Well Location
- ◒ 2020 RI Soil Vapor/Monitoring Well Location
- ▲ 2020 RI Soil Vapor Sampling Location
- ◉ 2020 RI Soil Vapor/Soil Boring Sampling Location
- ⊕ 2020 RI Monitoring Well Location
- ▣ 2020 Environmental Pre-Characterization Soil Boring Location
- ▣ 2019 Environmental Pre-Characterization Soil Boring Location
- ◐ Historical Soil Boring Location
- ⊕ Historical Soil Boring/Monitoring Well Location
- ◉ Historical Soil Boring/Soil Vapor Sampling Location
- ▲ Historical Soil Vapor Sampling Location

Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 6 November 2020.
3. Sample locations for the Pre-Characterization were collected using field measurements taken from the nearest property line. Sample locations for the Phase II and RI were collected using the ArcGIS Collector application on a tablet utilizing GPS location, with the exception of monitoring wells which were surveyed using GPS measurements
4. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
5. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 were collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.

30 0 30
SCALE IN FEET

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NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138

BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)

NEW YORK
MANHATTAN NEW JERSEY

Drawing Title

SITE PLAN

Project No.
100765102

Date
1/13/2021

Scale
1 " = 30 '

Drawn By
ATR

Figure
5

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 5 - Site Plan.mxd Date: 1/13/2021 User: jrosol Time: 4:41:11 PM

Sample ID	014_LSB-31	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	7-9	
VOCs (mg/kg)		
Acetone	ND	
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	ND	
Anthracene	ND	
Benzo(a)anthracene	0.062	J
Benzo(a)pyrene	0.065	J
Benzo(b)fluoranthene	0.083	J
Benzo(k)fluoranthene	ND	
Chrysene	0.06	J
Dibenz(a,h)anthracene	ND	
Dibenzofuran	ND	
Fluoranthene	0.12	J
Fluorene	ND	
Indeno(1,2,3-cd)pyrene	0.09	J
Naphthalene	ND	
Phenanthrene	0.058	J
Phenol	ND	
Pyrene	0.1	J

Sample ID	013_LSB-30	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	6-8	
VOCs (mg/kg)		
Acetone	0.0086	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	0.22	J
Acenaphthene	1	
Anthracene	3.9	
Benzo(a)anthracene	**7.1**	
Benzo(a)pyrene	**5.6**	
Benzo(b)fluoranthene	**7.3**	
Benzo(k)fluoranthene	**2.6**	
Chrysene	**6.5**	
Dibenz(a,h)anthracene	**0.84**	
Dibenzofuran	1.8	
Fluoranthene	14	
Fluorene	2.1	
Indeno(1,2,3-cd)pyrene	**3**	
Naphthalene	4.5	
Phenanthrene	16	
Phenol	0.17	J
Pyrene	11	

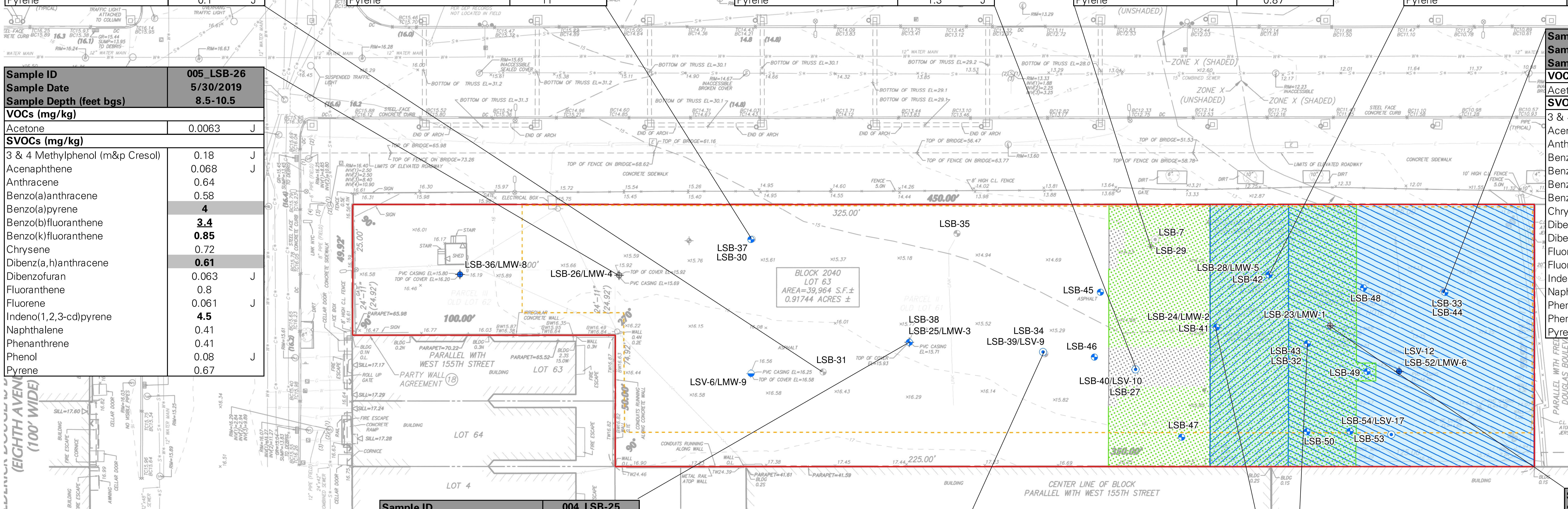
Sample ID	006_LSB-27	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	6-8	
VOCs (mg/kg)		
Acetone	ND	
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	0.47	J
Anthracene	ND	
Benzo(a)anthracene	0.56	J
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	**1.1**	**J**
Dibenz(a,h)anthracene	ND	
Dibenzofuran	0.28	J
Fluoranthene	0.41	J
Fluorene	0.93	J
Indeno(1,2,3-cd)pyrene	ND	
Naphthalene	ND	
Phenanthrene	0.92	J
Phenol	ND	
Pyrene	1.3	J

Sample ID	012_LSB-29	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	3-5	
VOCs (mg/kg)		
Acetone	ND	
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	0.052	J
Anthracene	0.11	J
Benzo(a)anthracene	0.53	
Benzo(a)pyrene	0.58	
Benzo(b)fluoranthene	0.75	
Benzo(k)fluoranthene	0.22	
Chrysene	0.51	
Dibenz(a,h)anthracene	0.091	J
Dibenzofuran	0.027	J
Fluoranthene	1	
Fluorene	0.036	J
Indeno(1,2,3-cd)pyrene	0.43	
Naphthalene	0.044	J
Phenanthrene	0.63	
Phenol	ND	
Pyrene	0.87	

Sample ID	008_LSB-28	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	6-8	
VOCs (mg/kg)		
Acetone	**0.48**	**J**
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	5	
Anthracene	3.3	
Benzo(a)anthracene	**2.8**	
Benzo(a)pyrene	**2**	**J**
Benzo(b)fluoranthene	**1.5**	**J**
Benzo(k)fluoranthene	ND	
Chrysene	**5.4**	
Dibenz(a,h)anthracene	ND	
Dibenzofuran	ND	
Fluoranthene	2.7	
Fluorene	6.9	
Indeno(1,2,3-cd)pyrene	**1.5**	**J**
Naphthalene	1.4	J
Phenanthrene	19	
Phenol	ND	
Pyrene	8.2	

Sample ID	016_LSB-33	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	5-7	
VOCs (mg/kg)		
Acetone	0.021	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	0.028	J
Anthracene	0.25	
Benzo(a)anthracene	0.97	
Benzo(a)pyrene	**1.1**	
Benzo(b)fluoranthene	**1.3**	
Benzo(k)fluoranthene	0.35	
Chrysene	0.79	
Dibenz(a,h)anthracene	0.15	
Dibenzofuran	0.029	J
Fluoranthene	1.6	
Fluorene	0.026	J
Indeno(1,2,3-cd)pyrene	**0.73**	
Naphthalene	0.12	J
Phenanthrene	0.56	
Phenol	ND	
Pyrene	1.4	

Sample ID	005_LSB-26	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	8.5-10.5	
VOCs (mg/kg)		
Acetone	0.0063	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	0.18	J
Acenaphthene	0.068	J
Anthracene	0.64	
Benzo(a)anthracene	0.58	
Benzo(a)pyrene	**4**	
Benzo(b)fluoranthene	**3.4**	
Benzo(k)fluoranthene	**0.85**	
Chrysene	0.72	
Dibenz(a,h)anthracene	**0.61**	
Dibenzofuran	0.063	J
Fluoranthene	0.8	
Fluorene	0.061	J
Indeno(1,2,3-cd)pyrene	**4.5**	
Naphthalene	0.41	
Phenanthrene	0.41	
Phenol	0.08	J
Pyrene	0.67	



Sample ID	004_LSB-25	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	7.5-9.5	
VOCs (mg/kg)		
Acetone	0.037	
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	0.1	J
Anthracene	0.57	
Benzo(a)anthracene	**3.6**	
Benzo(a)pyrene	**4.5**	
Benzo(b)fluoranthene	**5.2**	
Benzo(k)fluoranthene	**1.6**	
Chrysene	**3.3**	
Dibenz(a,h)anthracene	**0.57**	
Dibenzofuran	0.17	J
Fluoranthene	5.7	
Fluorene	0.086	J
Indeno(1,2,3-cd)pyrene	**3.1**	
Naphthalene	0.68	
Phenanthrene	1.6	
Phenol	ND	
Pyrene	5.4	

Sample ID	017_LSB-34	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	6-8	
VOCs (mg/kg)		
Acetone	0.019	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	0.8	J
Anthracene	4.5	
Benzo(a)anthracene	**14**	
Benzo(a)pyrene	**16**	
Benzo(b)fluoranthene	**20**	
Benzo(k)fluoranthene	**5.5**	
Chrysene	**13**	
Dibenz(a,h)anthracene	**2.5**	
Dibenzofuran	0.71	J
Fluoranthene	27	
Fluorene	0.79	J
Indeno(1,2,3-cd)pyrene	**11**	
Naphthalene	1.9	
Phenanthrene	14	
Phenol	ND	
Pyrene	25	

Sample ID	002_LSB-24		003_DUP-1	
Sample Date	5/30/2019		5/30/2019	
Sample Depth (feet bgs)	7.5-9.5		7.5-9.5	
VOCs (mg/kg)				
Acetone	ND		ND	
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	ND		ND	
Acenaphthene	1.2		1	
Anthracene	0.68		0.56	J
Benzo(a)anthracene	0.48	J	0.39	J
Benzo(a)pyrene	0.41	J	0.36	J
Benzo(b)fluoranthene	0.29	J	0.24	J
Benzo(k)fluoranthene	ND		ND	
Chrysene	1		0.91	
Dibenz(a,h)anthracene	ND		ND	
Dibenzofuran	0.72	J	0.6	J
Fluoranthene	0.41	J	0.28	J
Fluorene	1.8		1.5	
Indeno(1,2,3-cd)pyrene	ND		ND	
Naphthalene	0.28	J	0.19	J
Phenanthrene	0.21	J	ND	
Phenol	ND		ND	
Pyrene	1.4		1.3	

Sample ID	015_LSB-32	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	10-12	
VOCs (mg/kg)		
Acetone	0.032	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	ND	
Anthracene	0.22	J
Benzo(a)anthracene	0.43	J
Benzo(a)pyrene	0.46	J
Benzo(b)fluoranthene	0.5	J
Benzo(k)fluoranthene	ND	
Chrysene	0.44	J
Dibenz(a,h)anthracene	ND	
Dibenzofuran	ND	
Fluoranthene	0.5	J
Fluorene	ND	
Indeno(1,2,3-cd)pyrene	**0.58**	**J**
Naphthalene	0.15	J
Phenanthrene	0.26	J
Phenol	ND	
Pyrene	0.67	

Sample ID	001_LSB-23	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	3.5-5.5	
VOCs (mg/kg)		
Acetone	0.0093	J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	
Acenaphthene	ND	
Anthracene	ND	
Benzo(a)anthracene	0.051	J
Benzo(a)pyrene	0.1	J
Benzo(b)fluoranthene	0.14	
Benzo(k)fluoranthene	0.044	J
Chrysene	0.056	J
Dibenz(a,h)anthracene	ND	
Dibenzofuran	ND	
Fluoranthene	0.037	J
Fluorene	ND	
Indeno(1,2,3-cd)pyrene	0.1	J
Naphthalene	0.024	J
Phenanthrene	ND	
Phenol	ND	
Pyrene	0.037	J

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs
VOCs (mg/kg)				
Acetone	67-64-1	**0.05**	500	**0.05**
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	65794-96-9	**0.33**	500	**0.33**
Acenaphthene	83-32-9	**20**	500	**98**
Anthracene	120-12-7	**100**	500	**1,000**
Benzo(a)anthracene	56-55-3	**1**	5.6	**1**
Benzo(a)pyrene	50-32-8	**1**	1	**22**
Benzo(b)fluoranthene	205-99-2	**1**	5.6	**1.7**
Benzo(k)fluoranthene	207-08-9	**0.8**	56	**1.7**
Chrysene	218-01-9	**1**	56	**1**
Dibenz(a,h)anthracene	53-70-3	**0.33**	0.56	**1,000**
Dibenzofuran	132-64-9	**7**	350	**210**
Fluoranthene	206-44-0	**100**	500	**1,000**
Fluorene	86-73-7	**30**	500	**386**
Indeno(1,2,3-cd)pyrene	193-39-5	**0.5**	5.6	**8.2**
Naphthalene	91-20-3	**12**	500	**12**
Phenanthrene	85-01-8	**100**	500	**1,000**
Phenol	108-95-2	**0.33**	500	**0.33**
Pyrene	129-00-0	**100**	500	**1,000**

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and 4-methylphenol (p-cresol).
3. Sample 003_DUP-1 is a duplicate sample of 002_LSB-24
4. bgs = below grade surface
5. mg/kg = milligrams per kilogram
6. ND = Not detected

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Legend

🟥	Approximate Site Boundary
🟩	AOC-1 (Petroleum Impacts from Historical Site Operations)
▧	Historical Commercial Laundry
▨	Historical Boiler Room
🟦	Historical Approval for Automotive Repair and Fuel Storage
⬚	Proposed Cellar Footprint
◕	2020 RI Soil Boring Location
⊕	2020 RI Soil Boring/Monitoring Well Location
◒	2020 RI Soil Vapor/Monitoring Well Location
⊙	2020 RI Soil Vapor/Soil Boring Sampling Location
◕	2019 Phase II EI Soil Boring Location
⊕	2019 Phase II EI Soil Boring/Monitoring Well Location
⊙	2019 Phase II EI Soil Boring/Soil Vapor Sampling Location

Notes:

1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 12/23/2020.
3. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
4. Sample locations for the Phase II EI and RI were collected using the ArcGIS Collector application on a tablet using GPS location, with the exception of monitoring wells which were surveyed using GPS measurements.

0 15 30
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LANGAN
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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
PHASE II SOIL ANALYTICAL RESULTS - VOCs AND SVOCs

Project No. 100765102
Date 4/8/2021
Scale 1"=15'
Drawn By IHB
Submission Date

Figure
6A

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 6A - Phase II Soil Analytical Results - VOCs and SVOCs.mxd Date: 4/8/2021 User: aruane Time: 4:36:08 PM

Sample ID	013_LSB-30	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	6-8	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	ND	
Inorganics (mg/kg)		
Arsenic	5.04	
Barium	60.8	
Cadmium	ND	
Chromium, Total*	13.5	J
Lead	**158**	
Mercury	**0.319**	
Selenium	0.125	J
Silver	ND	
PFAS (ppb)	NA	

Sample ID	006_LSB-27	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	6-8	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)	NA	
Inorganics (mg/kg)		
Arsenic	2.95	
Barium	104	
Cadmium	0.304	J
Chromium, Total*	9.04	
Lead	**136**	
Mercury	**11.6**	
Selenium	0.664	J
Silver	0.177	J
PFAS (ppb)	NA	

Sample ID	012_LSB-29	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	3-5	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	ND	
Inorganics (mg/kg)		
Arsenic	9.98	
Barium	222	
Cadmium	1.06	
Chromium, Total*	11.1	
Lead	**650**	
Mercury	**2.5**	
Selenium	3.29	
Silver	0.318	J
PFAS (ppb)	NA	

Sample ID	008_LSB-28	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	6-8	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	ND	
Inorganics (mg/kg)		
Arsenic	**18.7**	
Barium	132	
Cadmium	**5.6**	
Chromium, Total*	12.2	
Lead	**648**	
Mercury	**0.188**	
Selenium	**31.7**	
Silver	0.283	J
PFAS (ppb)	NA	

Sample ID	005_LSB-26	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	8.5-10.5	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)	NA	
Inorganics (mg/kg)		
Arsenic	ND	
Barium	75.4	
Cadmium	0.837	
Chromium, Total*	16.5	
Lead	15.5	
Mercury	ND	
Selenium	0.402	J
Silver	ND	
PFAS (ppb)	NA	

Sample ID	004_LSB-25	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	7.5-9.5	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)	NA	
Inorganics (mg/kg)		
Arsenic	3.46	
Barium	136	
Cadmium	1.39	
Chromium, Total*	12.3	
Lead	**395**	
Mercury	**0.324**	
Selenium	2.91	
Silver	0.143	J
PFAS (ppb)	NA	

Sample ID	016_LSB-33	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	5-7	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	0.0593	
Inorganics (mg/kg)		
Arsenic	**14.4**	
Barium	153	
Cadmium	ND	
Chromium, Total*	9.6	J
Lead	**225**	
Mercury	**0.438**	**J**
Selenium	1.1	
Silver	ND	
PFAS (ppb)	NA	

Sample ID	014_LSB-31	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	7-9	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	ND	
Inorganics (mg/kg)		
Arsenic	9.62	
Barium	116	
Cadmium	ND	
Chromium, Total*	11.3	J
Lead	**153**	
Mercury	0.106	
Selenium	0.508	J
Silver	ND	
PFAS (ppb)	NA	

Sample ID	001_LSB-23	
Sample Date	5/30/2019	
Sample Depth (feet bgs)	3.5-5.5	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)	NA	
Inorganics (mg/kg)		
Arsenic	8.49	
Barium	135	
Cadmium	1.27	
Chromium, Total*	14.1	
Lead	**291**	
Mercury	**0.881**	
Selenium	1.69	
Silver	0.272	J
PFAS (ppb)	NA	

Sample ID	017_LSB-34	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	6-8	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)		
Total PCBs	ND	
Inorganics (mg/kg)		
Arsenic	3.62	
Barium	113	
Cadmium	ND	
Chromium, Total*	11.9	J
Lead	**225**	
Mercury	**0.444**	
Selenium	0.182	J
Silver	0.143	J
PFAS (ppb)	NA	

Sample ID	002_LSB-24		003_DUP-1	
Sample Date	5/30/2019		5/30/2019	
Sample Depth (feet bgs)	7.5-9.5		7.5-9.5	
Pesticides (mg/kg)	NA		NA	
Herbicides (mg/kg)	NA		NA	
PCBs (mg/kg)				
Total PCBs	ND		NA	
Inorganics (mg/kg)				
Arsenic	2.03		1.61	
Barium	150		111	
Cadmium	0.669		0.679	
Chromium, Total*	**34.1**		**32.2**	
Lead	**477**		**421**	
Mercury	**1.39**	**J**	0.083	J
Selenium	0.697	J	0.944	J
Silver	0.19	J	0.148	J
PFAS (ppb)	NA		NA	

Sample ID	015_LSB-32	
Sample Date	5/31/2019	
Sample Depth (feet bgs)	10-12	
Pesticides (mg/kg)	NA	
Herbicides (mg/kg)	NA	
PCBs (mg/kg)	NA	
Inorganics (mg/kg)		
Arsenic	7.13	
Barium	142	
Cadmium	ND	
Chromium, Total*	**39.6**	**J**
Lead	**175**	
Mercury	**0.709**	**J**
Selenium	2.9	
Silver	0.229	J
PFAS (ppb)	NA	

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs
PCBs (mg/kg)				
Total PCBs	1336-36-3	**0.1**	1	**3.2**
Inorganics (mg/kg)				
Arsenic	7440-38-2	**13**	16	**16**
Barium	7440-39-3	**350**	400	**820**
Cadmium	7440-43-9	**2.5**	9.3	**7.5**
Chromium, Hexavalent	18540-29-9	**1**	400	**19**
Chromium, Total*	7440-47-3	**30**	1,500	**~**
Chromium, Trivalent	16065-83-1	**30**	1,500	**~**
Copper	7440-50-8	**50**	270	**1,720**
Lead	7439-92-1	**63**	1,000	**450**
Mercury	7439-97-6	**0.18**	2.8	**0.73**
Nickel	7440-02-0	**30**	310	**130**
Selenium	7782-49-2	**3.9**	1,500	**4**
Silver	7440-22-4	**2**	1,500	**8.3**
Zinc	7440-66-6	**109**	10,000	**2,480**

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Criterion comparisons for total chromium are provided for reference for the 2019 data. Promulgated SCOs shown are for trivalent chromium.
3. Sample 003_DUP-1 is a duplicate sample of 002_LSB-24
4. ~ = Regulatory limit for this analyte does not exist
5. bgs = below grade surface
6. mg/kg = milligrams per kilogram
7. ppb = parts per billion
8. ND = Not detected
9. NA = Not analyzed

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Legend

▭	Approximate Site Boundary
▦	AOC-1 (Petroleum Impacts from Historical Site Operations)
▧	Historical Commercial Laundry
▨	Historical Boiler Room
■	Historical Approval for Automotive Repair and Fuel Storage
⬚	Proposed Cellar Footprint
◕	2020 RI Soil Boring Location
⊕	2020 RI Soil Boring/Monitoring Well Location
◒	2020 RI Soil Vapor/Monitoring Well Location
◉	2020 RI Soil Vapor/Soil Boring Sampling Location
◕	2019 Phase II EI Soil Boring Location
⊕	2019 Phase II EI Soil Boring/Monitoring Well Location
◉	2019 Phase II EI Soil Boring/Soil Vapor Sampling Location

Notes:

1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 12/23/2020.
3. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
4. Sample locations for the Phase II EI and RI were collected using the ArcGIS Collector application on a tablet using GPS location, with the exception of monitoring wells which were surveyed using GPS measurements.

0 15 30
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LANGAN
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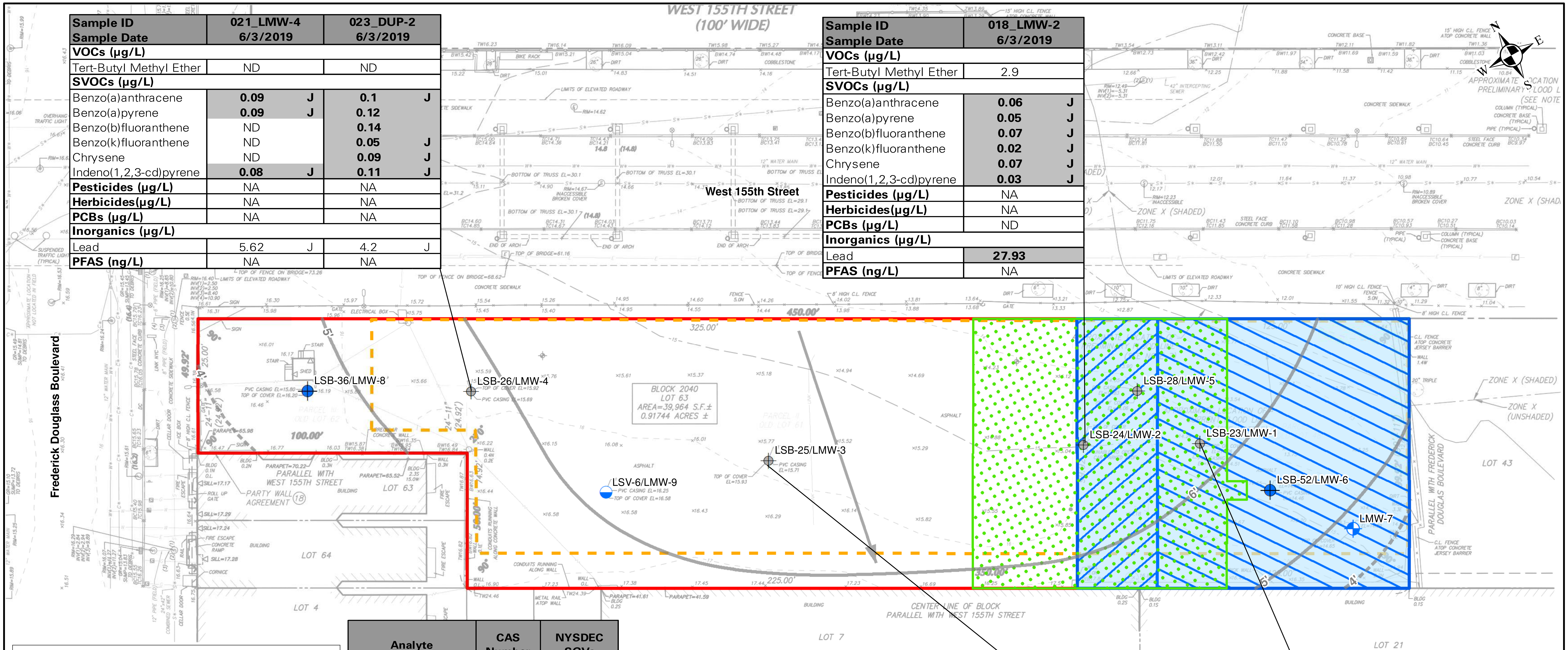
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET
DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
PHASE II
SOIL ANALYTICAL
RESULTS - PESTICIDES,
PCBS, METALS, AND PFAS

Project No. 100765102
Date 4/15/2021
Scale 1"=15'
Drawn By IHB
Submission Date
Figure 6B

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 6B - Phase II Soil Analytical Results – Pesticides, PCBs, Metals, and PFAS.mxd Date: 4/15/2021 User: aruane Time: 5:16:01 PM



Sample ID Sample Date	021_LMW-4 6/3/2019		023_DUP-2 6/3/2019	
VOCs (µg/L)				
Tert-Butyl Methyl Ether	ND		ND	
SVOCs (µg/L)				
Benzo(a)anthracene	**0.09**	**J**	**0.1**	**J**
Benzo(a)pyrene	**0.09**	**J**	**0.12**	
Benzo(b)fluoranthene	ND		**0.14**	
Benzo(k)fluoranthene	ND		**0.05**	**J**
Chrysene	ND		**0.09**	**J**
Indeno(1,2,3-cd)pyrene	**0.08**	**J**	**0.11**	**J**
Pesticides (µg/L)	NA		NA	
Herbicides(µg/L)	NA		NA	
PCBs (µg/L)	NA		NA	
Inorganics (µg/L)				
Lead	5.62	J	4.2	J
PFAS (ng/L)	NA		NA	

Sample ID Sample Date	018_LMW-2 6/3/2019	
VOCs (µg/L)		
Tert-Butyl Methyl Ether	2.9	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.06**	**J**
Benzo(a)pyrene	**0.05**	**J**
Benzo(b)fluoranthene	**0.07**	**J**
Benzo(k)fluoranthene	**0.02**	**J**
Chrysene	**0.07**	**J**
Indeno(1,2,3-cd)pyrene	**0.03**	**J**
Pesticides (µg/L)	NA	
Herbicides(µg/L)	NA	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Lead	**27.93**	
PFAS (ng/L)	NA	

Legend

- 🟥 Approximate Site Boundary
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▧ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- 🟧 Proposed Cellar Footprint
- → Groundwater Flow Direction
- — Groundwater Elevation Contours
- - - Inferred Groundwater Elevation Contours
- ⊕ 2020 RI Soil Boring/Monitoring Well Location
- ◒ 2020 RI Soil Vapor/Monitoring Well Location
- ⊕ 2020 RI Monitoring Well Location
- ⊕ Historical Soil Boring/Monitoring Well Location

Analyte	CAS Number	NYSDEC SGVs
VOCs (µg/L)		
Tert-Butyl Methyl Ether	1634-04-4	**10**
SVOCs (µg/L)		
Benzo(a)anthracene	56-55-3	**0.002**
Benzo(a)pyrene	50-32-8	**0**
Benzo(b)fluoranthene	205-99-2	**0.002**
Benzo(k)fluoranthene	207-08-9	**0.002**
Chrysene	218-01-9	**0.002**
Indeno(1,2,3-cd)pyrene	193-39-5	**0.002**
Inorganics (µg/L)		
Lead	7439-92-1	**25**

Sample ID Sample Date	020_LMW-3 6/3/2019	
VOCs (µg/L)		
Tert-Butyl Methyl Ether	**17**	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.04**	**J**
Benzo(a)pyrene	**0.03**	**J**
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	**0.03**	**J**
Pesticides (µg/L)	NA	
Herbicides(µg/L)	NA	
PCBs (µg/L)	ND	
Inorganics (µg/L)		
Lead	3.19	
PFAS (ng/L)	NA	

Sample ID Sample Date	019_LMW-1 6/3/2019	
VOCs (µg/L)		
Tert-Butyl Methyl Ether	1.2	J
SVOCs (µg/L)		
Benzo(a)anthracene	**0.02**	**J**
Benzo(a)pyrene	**0.03**	**J**
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	**0.03**	**J**
Pesticides (µg/L)	NA	
Herbicides(µg/L)	NA	
PCBs (µg/L)	NA	
Inorganics (µg/L)		
Lead	5.6	
PFAS (ng/L)	NA	

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 (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Sample 023_DUP-2 is a duplicate sample of 021_LMW-4.
4. µg/L = micrograms per liter
5. ng/L = nanograms per liter
6. ND = Not detected
7. NA = Not analyzed

Qualifiers:
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 6 November 2020.
3. Sample locations for the Phase II and RI were surveyed using GPS measurements.
4. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
5. Groundwater measurements and corresponding elevations obtained on 2 September 2020.
6. LMW-5 was not sampled due to the presence of LNAPL. As such, a petroleum fingerprint sample was collected
7. Dissolved metals were not analyzed during the 2019 Phase II EI.

25 0 25
SCALE IN FEET

LANGAN

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138

BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
NEW YORK
MANHATTAN NEW JERSEY

Drawing Title

POTENTIOMETRIC SURFACE MAP AND PHASE II GROUNDWATER ANALYTICAL RESULTS

Project No. 100765102
Date 4/9/2021
Scale 1 " = 25 '
Drawn By JR
Figure 7

Path: \\langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 7 – Phase II Groundwater Analytical Results.mxd Date: 4/9/2021 User: aruane Time: 4:33:21 PM

Sample ID	097_LSV-5	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	12.8	
4-Ethyltoluene	ND	
Acetone	55.1	J
Benzene	ND	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	6.4	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	1.66	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	88.5	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	ND	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	22.4	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	2.05	
Vinyl Chloride	ND	

Sample ID	027_LSV-3	
Sample Date	6/3/2019	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	14	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	3.56	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	2.9	
2-Hexanone	3.16	
4-Ethyltoluene	3.88	
Acetone	96.7	
Benzene	1.22	
Carbon Disulfide	6.45	
Carbon Tetrachloride	ND	
Chloroform	1.85	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	1.47	
Ethanol	15	J
Ethylbenzene	5.86	
Isopropanol	7.64	
M,P-Xylene	26.5	
Methyl Ethyl Ketone (2-Butanone)	22.2	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	3.71	
n-Hexane	1.82	
o-Xylene (1,2-Dimethylbenzene)	9.08	
Tert-Butyl Alcohol	3	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	**308**	
Tetrahydrofuran	ND	
Toluene	21.8	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	5.01	
Vinyl Chloride	ND	

Sample ID	099_LSV-6	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	1	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	4.75	
4-Ethyltoluene	ND	
Acetone	12.6	J
Benzene	ND	
Carbon Disulfide	25.7	
Carbon Tetrachloride	ND	
Chloroform	6.45	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	2.18	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	22.8	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	ND	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	9.9	
Tetrahydrofuran	6.99	
Toluene	0.765	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	1.12	
Vinyl Chloride	ND	

Sample ID	093_LSV-7	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	1.87	
2-Hexanone	68	
4-Ethyltoluene	ND	
Acetone	146	J
Benzene	ND	
Carbon Disulfide	5.57	
Carbon Tetrachloride	ND	
Chloroform	1.79	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	2.43	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	324	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	2.04	
n-Hexane	1.65	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	1.69	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

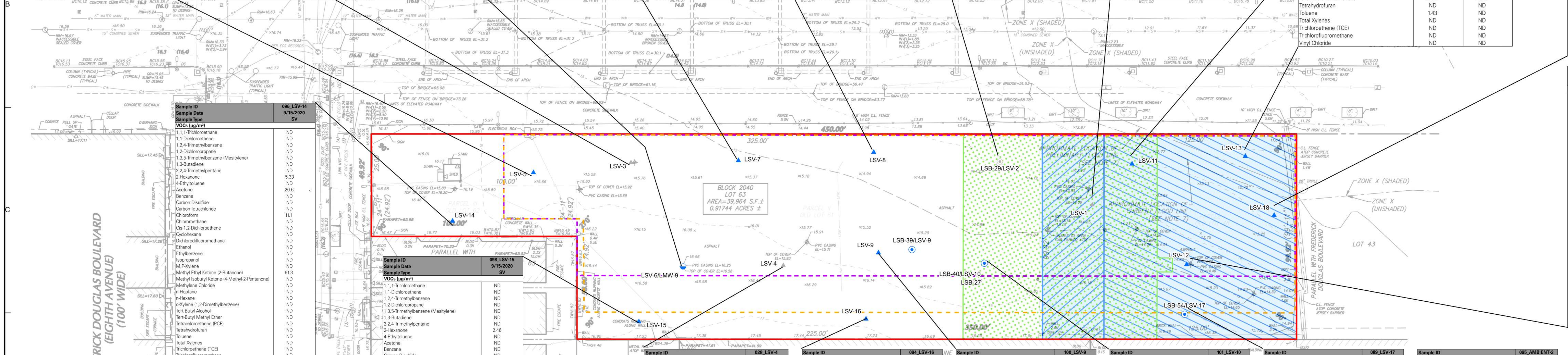
Sample ID	092_LSV-8	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	116	
4-Ethyltoluene	ND	
Acetone	646	J
Benzene	ND	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	18.6	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	1,160	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	4.69	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	026_LSV-2	
Sample Date	6/3/2019	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	13.9	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	3.5	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	10	
4-Ethyltoluene	3.49	
Acetone	162	
Benzene	0.856	
Carbon Disulfide	5.04	
Carbon Tetrachloride	ND	
Chloroform	6.74	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	0.871	
Dichlorodifluoromethane	ND	
Ethanol	13.1	J
Ethylbenzene	3.6	
Isopropanol	ND	
M,P-Xylene	17.6	
Methyl Ethyl Ketone (2-Butanone)	27	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	3.02	
n-Hexane	1.74	
o-Xylene (1,2-Dimethylbenzene)	6.39	
Tert-Butyl Alcohol	6.21	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	**189**	
Tetrahydrofuran	1.55	
Toluene	11	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	20.6	
Vinyl Chloride	ND	

Sample ID	025_LSV-1	
Sample Date	6/3/2019	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	2.22	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	13.6	
1,2-Dichloropropane	6.61	
1,3,5-Trimethylbenzene (Mesitylene)	3.75	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	1.08	
4-Ethyltoluene	3.9	
Acetone	36.1	
Benzene	0.888	
Carbon Disulfide	4.08	
Carbon Tetrachloride	ND	
Chloroform	3.47	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	1.03	
Ethanol	14.5	J
Ethylbenzene	5.73	
Isopropanol	ND	
M,P-Xylene	26.9	
Methyl Ethyl Ketone (2-Butanone)	4.31	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	4.03	
n-Hexane	1.47	
o-Xylene (1,2-Dimethylbenzene)	9.34	
Tert-Butyl Alcohol	1.69	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	**345**	
Tetrahydrofuran	ND	
Toluene	49.7	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	93.3	
Vinyl Chloride	ND	

Sample ID	091_LSV-11	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	ND	
4-Ethyltoluene	ND	
Acetone	ND	
Benzene	ND	
Carbon Disulfide	10.7	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	1,540	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	20.4	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	879	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	422	
n-Hexane	1,190	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	43.9	
Vinyl Chloride	ND	

Sample ID	086_LSV-13		087_DUP-1	
Sample Date	9/14/2020		9/14/2020	
Sample Type	SV		SV	
VOCs (µg/m³)				
1,1,1-Trichloroethane	ND		ND	
1,1-Dichloroethene	ND		ND	
1,2,4-Trimethylbenzene	1.91		ND	
1,2-Dichloropropane	ND		ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND		ND	
1,3-Butadiene	ND		ND	
2,2,4-Trimethylpentane	ND		ND	
2-Hexanone	33.9		44.3	
4-Ethyltoluene	ND		ND	
Acetone	217	J	224	J
Benzene	ND		ND	
Carbon Disulfide	8.91	J	6.26	J
Carbon Tetrachloride	ND		ND	
Chloroform	8.35		8.4	
Chloromethane	ND		ND	
Cis-1,2-Dichloroethene	ND		ND	
Cyclohexane	1.58		1.62	
Dichlorodifluoromethane	ND		ND	
Ethanol	21.5		20.2	
Ethylbenzene	ND		ND	
Isopropanol	4.97		5.14	
M,P-Xylene	ND		ND	
Methyl Ethyl Ketone (2-Butanone)	354		419	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND		ND	
Methylene Chloride	ND		ND	
n-Heptane	2		2.21	
n-Hexane	2.03		2.11	
o-Xylene (1,2-Dimethylbenzene)	ND		ND	
Tert-Butyl Alcohol	ND		ND	
Tert-Butyl Methyl Ether	ND		ND	
Tetrachloroethene (PCE)	62.6		64.9	
Tetrahydrofuran	ND		ND	
Toluene	1.43		ND	
Total Xylenes	ND		ND	
Trichloroethene (TCE)	ND		ND	
Trichlorofluoromethane	ND		ND	
Vinyl Chloride	ND		ND	



Sample ID	088_LSV-18	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	44.7	
4-Ethyltoluene	ND	
Acetone	116	J
Benzene	ND	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	48.3	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	1.69	
Ethanol	12.6	
Ethylbenzene	ND	
Isopropanol	2.35	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	275	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	1.53	
n-Hexane	1.04	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	27.9	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	22.4	
Vinyl Chloride	ND	

Sample ID	090_LSV-12	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	78.7	
4-Ethyltoluene	ND	
Acetone	259	J
Benzene	2.27	
Carbon Disulfide	50.1	
Carbon Tetrachloride	ND	
Chloroform	4.18	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	3.86	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	628	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	4.84	
n-Hexane	9.76	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	10.1	
Tetrahydrofuran	ND	
Toluene	3.58	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	9.5	
Vinyl Chloride	ND	

Sample ID	096_LSV-14	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	5.33	
4-Ethyltoluene	ND	
Acetone	20.6	J
Benzene	ND	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	11.1	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	61.3	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	ND	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	098_LSV-15	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	2.46	
4-Ethyltoluene	ND	
Acetone	ND	
Benzene	ND	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	1.31	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	1.85	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	8.79	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	ND	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	9.22	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	028_LSV-4	
Sample Date	6/3/2019	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	17.9	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	285	
2-Hexanone	25.9	
4-Ethyltoluene	ND	
Acetone	530	
Benzene	ND	
Carbon Disulfide	8.59	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	3.86	
Dichlorodifluoromethane	ND	
Ethanol	109	J
Ethylbenzene	5.47	
Isopropanol	ND	
M,P-Xylene	25.5	
Methyl Ethyl Ketone (2-Butanone)	92.3	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	9.1	
n-Hexane	24.7	
o-Xylene (1,2-Dimethylbenzene)	10.8	
Tert-Butyl Alcohol	13.1	
Tert-Butyl Methyl Ether	1,130	
Tetrachloroethene (PCE)	**309**	
Tetrahydrofuran	ND	
Toluene	26.2	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	094_LSV-16	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	3.53	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	50.4	
4-Ethyltoluene	ND	
Acetone	66	J
Benzene	ND	
Carbon Disulfide	1.56	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	434	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	ND	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	9.7	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	100_LSV-9	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	22.8	
2-Hexanone	20.7	
4-Ethyltoluene	ND	
Acetone	85	J
Benzene	4.25	
Carbon Disulfide	1.38	
Carbon Tetrachloride	ND	
Chloroform	5.81	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	5.16	
Dichlorodifluoromethane	ND	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	2	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	113	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	1.35	
n-Hexane	2.08	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	7.93	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	101_LSV-10	
Sample Date	9/15/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	2.29	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	1.12	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	34.8	
4-Ethyltoluene	ND	
Acetone	51.1	J
Benzene	0.725	
Carbon Disulfide	1.19	
Carbon Tetrachloride	ND	
Chloroform	1.09	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	1.03	
Dichlorodifluoromethane	1.47	
Ethanol	ND	
Ethylbenzene	2.95	
Isopropanol	ND	
M,P-Xylene	9.08	
Methyl Ethyl Ketone (2-Butanone)	181	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.3	
Methylene Chloride	ND	
n-Heptane	4.14	
n-Hexane	2.36	
o-Xylene (1,2-Dimethylbenzene)	3.57	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	0.937	
Tetrachloroethene (PCE)	7.73	
Tetrahydrofuran	24.5	
Toluene	2.71	
Total Xylenes	12.6	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	089_LSV-17	
Sample Date	9/14/2020	
Sample Type	SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	ND	
2-Hexanone	46.3	
4-Ethyltoluene	ND	
Acetone	77.4	J
Benzene	ND	
Carbon Disulfide	1.25	
Carbon Tetrachloride	ND	
Chloroform	47	
Chloromethane	ND	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	2.07	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	ND	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	401	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	1.43	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	37.5	
Tetrahydrofuran	ND	
Toluene	ND	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	5.29	
Vinyl Chloride	ND	

Sample ID	095_AMBIENT-2	
Sample Date	9/15/2020	
Sample Type	AA	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	ND	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	ND	
2,2,4-Trimethylpentane	1.64	
2-Hexanone	ND	
4-Ethyltoluene	ND	
Acetone	3.75	J
Benzene	0.802	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	0.843	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	ND	
Dichlorodifluoromethane	2.09	
Ethanol	ND	
Ethylbenzene	ND	
Isopropanol	1.98	
M,P-Xylene	ND	
Methyl Ethyl Ketone (2-Butanone)	ND	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	ND	
n-Hexane	0.789	
o-Xylene (1,2-Dimethylbenzene)	ND	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	1.93	
Total Xylenes	ND	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Sample ID	085_AMBIENT-1	
Sample Date	9/14/2020	
Sample Type	AA	
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	
1,1-Dichloroethene	ND	
1,2,4-Trimethylbenzene	1.59	
1,2-Dichloropropane	ND	
1,3,5-Trimethylbenzene (Mesitylene)	ND	
1,3-Butadiene	0.535	
2,2,4-Trimethylpentane	2.52	
2-Hexanone	ND	
4-Ethyltoluene	ND	
Acetone	7.22	J
Benzene	3.48	
Carbon Disulfide	ND	
Carbon Tetrachloride	ND	
Chloroform	ND	
Chloromethane	0.892	
Cis-1,2-Dichloroethene	ND	
Cyclohexane	0.706	
Dichlorodifluoromethane	2.07	
Ethanol	20.2	
Ethylbenzene	1.17	
Isopropanol	2.61	
M,P-Xylene	3.17	
Methyl Ethyl Ketone (2-Butanone)	ND	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	
Methylene Chloride	ND	
n-Heptane	1.07	
n-Hexane	1.74	
o-Xylene (1,2-Dimethylbenzene)	1.25	
Tert-Butyl Alcohol	ND	
Tert-Butyl Methyl Ether	ND	
Tetrachloroethene (PCE)	ND	
Tetrahydrofuran	ND	
Toluene	5.31	
Total Xylenes	4.43	
Trichloroethene (TCE)	ND	
Trichlorofluoromethane	ND	
Vinyl Chloride	ND	

Legend

- ● 2020 RI Soil Vapor/Monitoring Well Location
- ▲ 2020 RI Soil Vapor Sampling Location
- ⊙ 2020 RI Soil Vapor/Soil Boring Sampling Location
- ⊙ Historical Soil Boring/Soil Vapor Sampling Location
- ▲ Historical Soil Vapor Sampling Location
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▨ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- ▭ Proposed Cellar Footprint
- ▭ Proposed Building Footprint
- 🟥 Approximate Site Boundary
- ▭ Proposed Cellar Footprint

Analyte	CAS Number	NYSDOH Decision Matrices Minimum Concentrations
VOCs (µg/m³)		
1,1,1-Trichloroethane	71-55-6	**100**
1,1-Dichloroethene	75-35-4	**6**
1,2,4-Trimethylbenzene	95-63-6	~
1,2-Dichloropropane	78-87-5	~
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	~
1,3-Butadiene	106-99-0	~
2,2,4-Trimethylpentane	540-84-1	~
2-Hexanone	591-78-6	~
4-Ethyltoluene	622-96-8	~
Acetone	67-64-1	~
Benzene	71-43-2	~
Carbon Disulfide	75-15-0	~
Carbon Tetrachloride	56-23-5	**6**
Chloroform	67-66-3	~
Chloromethane	74-87-3	~
Cis-1,2-Dichloroethene	156-59-2	**6**
Cyclohexane	110-82-7	~
Dichlorodifluoromethane	75-71-8	~
Ethanol	64-17-5	~
Ethylbenzene	100-41-4	~
Isopropanol	67-63-0	~
M,P-Xylene	179601-23-1	~
Methyl Ethyl Ketone (2-Butanone)	78-93-3	~
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	~
Methylene Chloride	75-09-2	**100**
n-Heptane	142-82-5	~
n-Hexane	110-54-3	~
o-Xylene (1,2-Dimethylbenzene)	95-47-6	~
Tert-Butyl Alcohol	75-65-0	~
Tert-Butyl Methyl Ether	1634-04-4	~
Tetrachloroethene (PCE)	127-18-4	**100**
Tetrahydrofuran	109-99-9	~
Toluene	108-88-3	~
Total Xylenes	1330-20-7	~
Trichloroethene (TCE)	79-01-6	6
Trichlorofluoromethane	75-69-4	~
Vinyl Chloride	75-01-4	6

Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 12/23/2020.
3. Proposed Building Footprint shown according to Site Plan A-001 prepared by SGW Architects, P.C. as part of the architectural package dated 18 December 2020.
4. Sample locations for the Phase II and RI were collected using the ArcGIS Collector application on a tablet utilizing GPS location, with the exception of monitoring wells which were surveyed using GPS measurements
5. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.

0 25 50
SCALE IN FEET

Notes:
1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Ambient air sample analytical results are shown for reference only.
3. Compounds detected above the reporting limit are shown.
4. AA = Ambient Air
5. SV = Soil Vapor
6. ND = Not detected
7. J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
8. ug/m3 = micrograms per cubic meter

LANGAN
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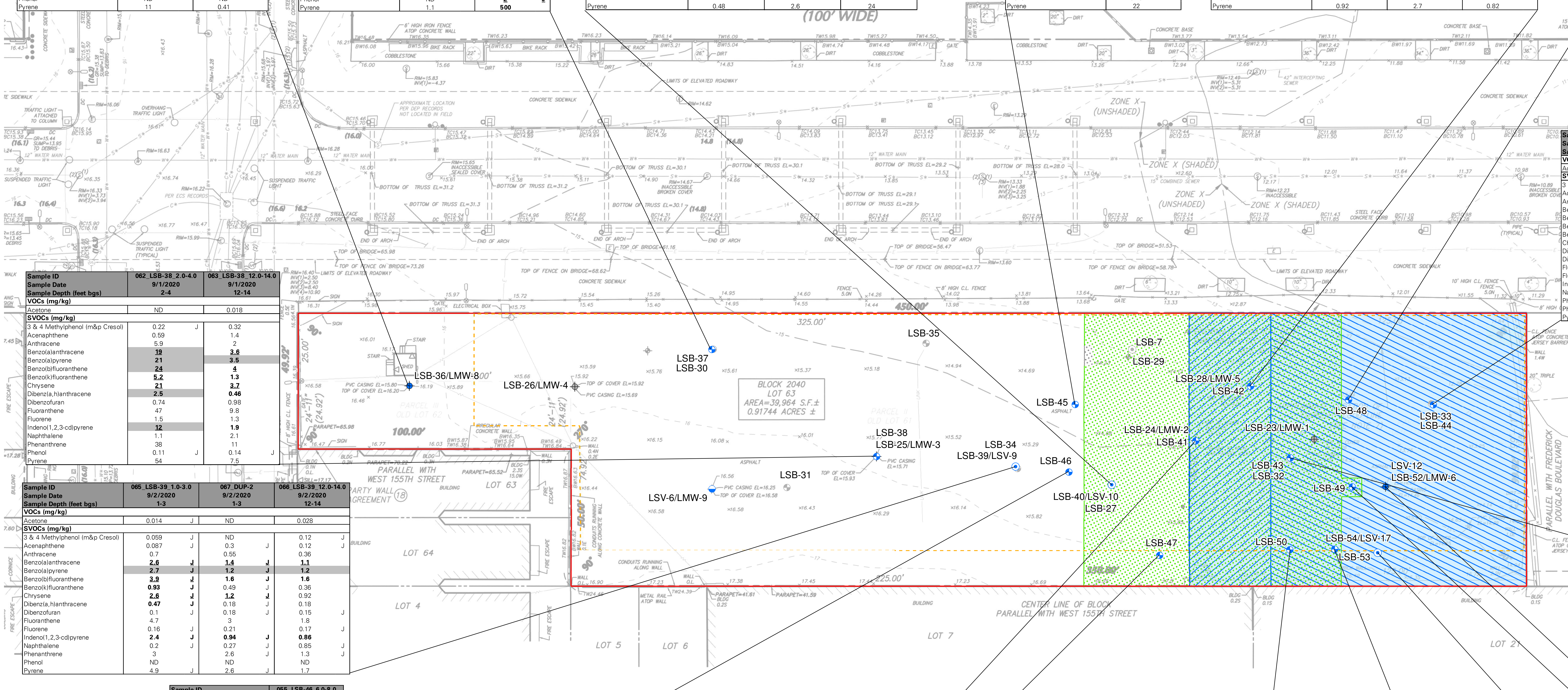
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
NEW YORK
MANHATTAN NEW YORK

Drawing Title
PHASE II AND REMEDIAL SOIL VAPOR ANALYTICAL RESULTS

Project No. 100765102
Date 04/15/2021
Scale 1"= 300'
Drawn By ELB
Figure 8

Path: \\langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\APRX\100765102\100765102_Map8+10.aprx Date: 4/15/2021 User: eburns Time: 5:37 PM



Sample ID	060_LSB-36_1.0-3.0	061_LSB-36_12.0-14.0
Sample Date	9/1/2020	9/1/2020
Sample Depth (feet bgs)	1-3	12-14
VOCs (mg/kg)		
Acetone	ND	0.0077 J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	**0.85**
Acenaphthene	0.86	0.041 J
Anthracene	2.2	0.1 J
Benzo(a)anthracene	**6.2**	0.22
Benzo(a)pyrene	**5.2**	0.21
Benzo(b)fluoranthene	**6.7**	0.23
Benzo(k)fluoranthene	**2.4**	0.078 J
Chrysene	**6.2**	0.2
Dibenz(a,h)anthracene	**1**	0.028 J
Dibenzofuran	0.58	0.031 J
Fluoranthene	12	0.45
Fluorene	0.91	0.045 J
Indeno(1,2,3-cd)pyrene	**4**	0.11 J
Naphthalene	0.56	0.087 J
Phenanthrene	11	0.35
Phenol	ND	ND
Pyrene	11	0.41

Sample ID	050_LSB-37_1.0-3.0	051_LSB-37_12.0-14.0
Sample Date	8/31/2020	8/31/2020
Sample Depth (feet bgs)	1-3	12-14
VOCs (mg/kg)		
Acetone	ND	0.0068 J
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	**3.6** **J**
Acenaphthene	0.033 J	**100**
Anthracene	0.14	**220**
Benzo(a)anthracene	0.64	**200**
Benzo(a)pyrene	0.68	**170**
Benzo(b)fluoranthene	0.82	**180**
Benzo(k)fluoranthene	0.2	**64**
Chrysene	0.57	**170**
Dibenz(a,h)anthracene	0.086 J	**22**
Dibenzofuran	0.025 J	**110**
Fluoranthene	1.2	**570**
Fluorene	0.023 J	**140**
Indeno(1,2,3-cd)pyrene	0.46	**86**
Naphthalene	0.072 J	**200**
Phenanthrene	0.65	**810**
Phenol	ND	**2** **J**
Pyrene	1.1	**500**

Sample ID	053_LSB-40_1.0-3.0	058_LSB-40_6.0-8.0	054_LSB-40_12.0-14.0
Sample Date	8/31/2020	8/31/2020	8/31/2020
Sample Depth (feet bgs)	1-3	6-8	12-14
VOCs (mg/kg)			
Acetone	ND	ND	0.0073 J
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	0.16 J
Acenaphthene	ND	0.031 J	4.5
Anthracene	0.056 J	0.28	8
Benzo(a)anthracene	0.27	**1.8**	**8.3**
Benzo(a)pyrene	0.3	**2.8**	**7.2**
Benzo(b)fluoranthene	0.36	**3.1**	**8.1**
Benzo(k)fluoranthene	0.13	**0.92**	**2**
Chrysene	0.28	**1.7**	**6.7**
Dibenz(a,h)anthracene	0.038 J	**0.34**	**0.92**
Dibenzofuran	0.036 J	0.084 J	2.8
Fluoranthene	0.51	2.4	28
Fluorene	0.029 J	0.03 J	4.3
Indeno(1,2,3-cd)pyrene	0.2	**1.8**	**4.7**
Naphthalene	0.17 J	0.45	2.8
Phenanthrene	0.37	0.76	36
Phenol	ND	ND	ND
Pyrene	0.48	2.6	24

Sample ID	056_LSB-45_7.5-9.5
Sample Date	8/31/2020
Sample Depth (feet bgs)	7.5-9.5
VOCs (mg/kg)	
Acetone	0.0074 J
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	**1.5**
Acenaphthene	2.8
Anthracene	2.3
Benzo(a)anthracene	**8.5**
Benzo(a)pyrene	**8.1**
Benzo(b)fluoranthene	**9.1**
Benzo(k)fluoranthene	**3**
Chrysene	**7.5**
Dibenz(a,h)anthracene	**1.1**
Dibenzofuran	1.6
Fluoranthene	25
Fluorene	1.6
Indeno(1,2,3-cd)pyrene	**5.5**
Naphthalene	7
Phenanthrene	6
Phenol	0.28
Pyrene	22

Sample ID	040_LSB-42_1.5-3.5	044_LSB-42_7.5-9.5	041_LSB-42_12.0-14.0
Sample Date	8/28/2020	8/28/2020	8/28/2020
Sample Depth (feet bgs)	1.5-3.5	7.5-9.5	12-14
VOCs (mg/kg)			
Acetone	ND	ND	0.018
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	0.071 J
Acenaphthene	ND	1.3	0.25
Anthracene	ND	0.98	0.19
Benzo(a)anthracene	0.3 J	**1.1**	0.25
Benzo(a)pyrene	ND	0.6 J	0.23
Benzo(b)fluoranthene	0.53 J	0.53 J	0.22
Benzo(k)fluoranthene	ND	ND	0.057 J
Chrysene	**1.6**	**1.8**	0.39
Dibenz(a,h)anthracene	0.12 J	ND	0.038 J
Dibenzofuran	0.22 J	ND	0.054 J
Fluoranthene	0.7	0.88	0.57
Fluorene	0.21 J	2.7	0.3
Indeno(1,2,3-cd)pyrene	0.18 J	0.19 J	0.096 J
Naphthalene	0.86 J	ND	0.37
Phenanthrene	2.4	4.4	1.2
Phenol	ND	ND	ND
Pyrene	0.92	2.7	0.82

Sample ID	039_LSB-48_8.0-10.0
Sample Date	8/28/2020
Sample Depth (feet bgs)	8-10
VOCs (mg/kg)	
Acetone	ND
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	0.052 J
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	0.06 J
Benzo(a)pyrene	0.078 J
Benzo(b)fluoranthene	0.08 J
Benzo(k)fluoranthene	ND
Chrysene	0.055 J
Dibenz(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.13 J
Fluorene	ND
Indeno(1,2,3-cd)pyrene	0.055 J
Naphthalene	0.036 J
Phenanthrene	0.045 J
Phenol	ND
Pyrene	0.12 J

Sample ID	030_LSB-44_3.0-5.0	031_LSB-44_12.0-14.0	032_DUP-1
Sample Date	8/27/2020	8/27/2020	8/27/2020
Sample Depth (feet bgs)	3-5	12-14	12-14
VOCs (mg/kg)			
Acetone	ND	0.013	0.014
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	0.09 J	ND
Acenaphthene	ND	0.032 J	ND
Anthracene	ND	0.072 J	ND
Benzo(a)anthracene	0.16	0.22	0.052 J
Benzo(a)pyrene	0.29	0.22	ND
Benzo(b)fluoranthene	0.32	0.25	0.048 J
Benzo(k)fluoranthene	0.12	0.11 J	ND
Chrysene	0.19	0.22	0.048 J
Dibenz(a,h)anthracene	0.047 J	ND	ND
Dibenzofuran	0.036 J	0.019 J	ND
Fluoranthene	0.19	0.48 J	0.095 J
Fluorene	ND	0.031 J	ND
Indeno(1,2,3-cd)pyrene	0.25	0.13 J	ND
Naphthalene	0.21	0.068 J	0.037 J
Phenanthrene	0.12	0.34 J	0.062 J
Phenol	ND	ND	ND
Pyrene	0.17	0.43 J	0.083 J

Sample ID	062_LSB-38_2.0-4.0	063_LSB-38_12.0-14.0
Sample Date	9/1/2020	9/1/2020
Sample Depth (feet bgs)	2-4	12-14
VOCs (mg/kg)		
Acetone	ND	0.018
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	0.22 J	0.32
Acenaphthene	0.59	1.4
Anthracene	5.9	2
Benzo(a)anthracene	**19**	**3.6**
Benzo(a)pyrene	**21**	**3.5**
Benzo(b)fluoranthene	**24**	**4**
Benzo(k)fluoranthene	**5.2**	**1.3**
Chrysene	**21**	**3.7**
Dibenz(a,h)anthracene	**2.5**	**0.46**
Dibenzofuran	0.74	0.98
Fluoranthene	47	9.8
Fluorene	1.5	1.3
Indeno(1,2,3-cd)pyrene	**12**	**1.9**
Naphthalene	1.1	2.1
Phenanthrene	38	11
Phenol	0.11 J	0.14 J
Pyrene	54	7.5

Sample ID	065_LSB-39_1.0-3.0	067_DUP-2	066_LSB-39_12.0-14.0
Sample Date	9/2/2020	9/2/2020	9/2/2020
Sample Depth (feet bgs)	1-3	1-3	12-14
VOCs (mg/kg)			
Acetone	0.014 J	ND	0.028
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	0.059 J	ND	0.12 J
Acenaphthene	0.087 J	0.3 J	0.12 J
Anthracene	0.7	0.55	0.36
Benzo(a)anthracene	**2.6** **J**	**1.4** **J**	**1.1**
Benzo(a)pyrene	**2.7** **J**	**1.2** **J**	**1.2**
Benzo(b)fluoranthene	**3.9** **J**	**1.6** **J**	**1.6**
Benzo(k)fluoranthene	**0.93** **J**	0.49 J	0.36
Chrysene	**2.6** **J**	**1.2** **J**	0.92
Dibenz(a,h)anthracene	**0.47** **J**	0.18 J	0.18
Dibenzofuran	0.1 J	0.18 J	0.15 J
Fluoranthene	4.7	3	1.8
Fluorene	0.16 J	0.21	0.17 J
Indeno(1,2,3-cd)pyrene	**2.4** **J**	**0.94** **J**	**0.86**
Naphthalene	0.2 J	0.27 J	0.85 J
Phenanthrene	3	2.6 J	1.3 J
Phenol	ND	ND	ND
Pyrene	4.9 J	2.6 J	1.7

Sample ID	055_LSB-46_6.0-8.0
Sample Date	8/31/2020
Sample Depth (feet bgs)	6-8
VOCs (mg/kg)	
Acetone	ND
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	ND
Acenaphthene	0.025 J
Anthracene	0.13
Benzo(a)anthracene	0.68
Benzo(a)pyrene	0.86
Benzo(b)fluoranthene	0.96
Benzo(k)fluoranthene	0.27
Chrysene	0.63
Dibenz(a,h)anthracene	0.12
Dibenzofuran	0.032 J
Fluoranthene	1.2
Fluorene	0.026 J
Indeno(1,2,3-cd)pyrene	**0.53**
Naphthalene	0.11 J
Phenanthrene	0.46
Phenol	ND
Pyrene	1.1

Sample ID	037_LSB-43_2.5-4.5	038_LSB-43_12.0-14.0
Sample Date	8/28/2020	8/28/2020
Sample Depth (feet bgs)	2.5-4.5	12-14
VOCs (mg/kg)		
Acetone	ND	0.018
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	**0.46** **J**
Acenaphthene	ND	0.81 J
Anthracene	0.087 J	2.3
Benzo(a)anthracene	0.16	**8.3**
Benzo(a)pyrene	0.24	**7.6**
Benzo(b)fluoranthene	0.3	**8.2**
Benzo(k)fluoranthene	0.09 J	**2.4**
Chrysene	0.16	**7.1**
Dibenz(a,h)anthracene	0.052 J	**0.98**
Dibenzofuran	ND	1.1
Fluoranthene	0.23	20
Fluorene	ND	1.2
Indeno(1,2,3-cd)pyrene	0.21	**4.8**
Naphthalene	0.11 J	4.6
Phenanthrene	0.11	4.4
Phenol	ND	ND
Pyrene	0.22	18

Sample ID	035_LSB-52_9.5-11.5
Sample Date	8/27/2020
Sample Depth (feet bgs)	9.5-11.5
VOCs (mg/kg)	
Acetone	0.021
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	0.042 J
Acenaphthene	0.064 J
Anthracene	0.071 J
Benzo(a)anthracene	0.32
Benzo(a)pyrene	0.36
Benzo(b)fluoranthene	0.4
Benzo(k)fluoranthene	0.16
Chrysene	0.33
Dibenz(a,h)anthracene	0.049 J
Dibenzofuran	0.029 J
Fluoranthene	0.68
Fluorene	0.046 J
Indeno(1,2,3-cd)pyrene	0.22
Naphthalene	0.079 J
Phenanthrene	0.5
Phenol	ND
Pyrene	0.66

Sample ID	033_LSB-49_9.5-11.5
Sample Date	8/27/2020
Sample Depth (feet bgs)	9.5-11.5
VOCs (mg/kg)	
Acetone	0.011
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	ND
Acenaphthene	0.22 J
Anthracene	0.48 J
Benzo(a)anthracene	**1.4**
Benzo(a)pyrene	0.97
Benzo(b)fluoranthene	**1.2**
Benzo(k)fluoranthene	0.45 J
Chrysene	**1.5**
Dibenz(a,h)anthracene	0.16 J
Dibenzofuran	ND
Fluoranthene	3
Fluorene	0.4 J
Indeno(1,2,3-cd)pyrene	**0.53** **J**
Naphthalene	ND
Phenanthrene	1.8
Phenol	ND
Pyrene	3

Sample ID	047_LSB-41_4.0-6.0	057_LSB-41_7.5-9.5	048_LSB-41_12.0-14.0
Sample Date	8/31/2020	8/31/2020	8/31/2020
Sample Depth (feet bgs)	4-6	7.5-9.5	12-14
VOCs (mg/kg)			
Acetone	ND	0.018 J	0.0093 J
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	0.036 J	ND	0.12 J
Acenaphthene	0.036 J	0.65 J	0.032 J
Anthracene	0.53	0.51 J	0.11 J
Benzo(a)anthracene	0.86	0.54 J	0.52
Benzo(a)pyrene	**1.3**	0.37 J	0.57
Benzo(b)fluoranthene	**1.9**	0.31 J	0.66
Benzo(k)fluoranthene	0.52	ND	0.22
Chrysene	0.92	0.9	0.45
Dibenz(a,h)anthracene	0.32	ND	0.082 J
Dibenzofuran	0.14 J	0.27 J	0.027 J
Fluoranthene	1.1	0.38 J	0.61
Fluorene	0.076 J	1.1	0.052 J
Indeno(1,2,3-cd)pyrene	**1.4**	0.16 J	0.34
Naphthalene	0.32	ND	0.087 J
Phenanthrene	0.53	ND	0.3
Phenol	ND	ND	ND
Pyrene	1	1.2	0.65

Sample ID	049_LSB-47_8.5-10.5
Sample Date	8/31/2020
Sample Depth (feet bgs)	8.5-10.5
VOCs (mg/kg)	
Acetone	**0.11** **J**
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	ND
Acenaphthene	0.94
Anthracene	0.82
Benzo(a)anthracene	**1.3**
Benzo(a)pyrene	0.7 J
Benzo(b)fluoranthene	0.46 J
Benzo(k)fluoranthene	ND
Chrysene	**1.7**
Dibenz(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.49 J
Fluorene	1.5
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	0.21 J
Phenanthrene	0.5 J
Phenol	ND
Pyrene	2.3

Sample ID	042_LSB-50_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
VOCs (mg/kg)	
Acetone	**0.067** **J**
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	0.12 J
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	0.035 J
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenz(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.04 J
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Phenol	ND
Pyrene	0.048 J

Sample ID	043_LSB-53_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
VOCs (mg/kg)	
Acetone	0.018
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	ND
Acenaphthene	0.45 J
Anthracene	ND
Benzo(a)anthracene	0.68
Benzo(a)pyrene	0.45 J
Benzo(b)fluoranthene	0.32 J
Benzo(k)fluoranthene	ND
Chrysene	**1.3**
Dibenz(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.39 J
Fluorene	0.83 J
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Phenol	ND
Pyrene	1.6

Sample ID	045_LSB-54_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
VOCs (mg/kg)	
Acetone	ND
SVOCs (mg/kg)	
3 & 4 Methylphenol (m&p Cresol)	ND
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	0.062 J
Benzo(b)fluoranthene	0.052 J
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenz(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Fluorene	ND
Indeno(1,2,3-cd)pyrene	0.05 J
Naphthalene	ND
Phenanthrene	ND
Phenol	ND
Pyrene	ND

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs
VOCs (mg/kg)				
Acetone	67-64-1	**0.05**	500	**0.05**
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	65794-96-9	**0.33**	500	**0.33**
Acenaphthene	83-32-9	**20**	500	**98**
Anthracene	120-12-7	**100**	500	**1,000**
Benzo(a)anthracene	56-55-3	**1**	5.6	**1**
Benzo(a)pyrene	50-32-8	**1**	1	**22**
Benzo(b)fluoranthene	205-99-2	**1**	5.6	**1.7**
Benzo(k)fluoranthene	207-08-9	**0.8**	56	**1.7**
Chrysene	218-01-9	**1**	56	**1**
Dibenz(a,h)anthracene	53-70-3	**0.33**	0.56	**1,000**
Dibenzofuran	132-64-9	**7**	350	**210**
Fluoranthene	206-44-0	**100**	500	**1,000**
Fluorene	86-73-7	**30**	500	**386**
Indeno(1,2,3-cd)pyrene	193-39-5	**0.5**	5.6	**8.2**
Naphthalene	91-20-3	**12**	500	**12**
Phenanthrene	85-01-8	**100**	500	**1,000**
Phenol	108-95-2	**0.33**	500	**0.33**
Pyrene	129-00-0	**100**	500	**1,000**

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and 4-methylphenol (p-cresol).
3. Sample 067_DUP-2 is a duplicate sample of 065_LSB-39_1.0-3.0 and sample 032_DUP-1 is a duplicate sample of 031_LSB-44_12.0-14.0.
4. bgs = below grade surface
5. mg/kg = milligrams per kilogram
6. ND = Not detected

Qualifiers:
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Legend

🟥	Approximate Site Boundary
🟩	AOC-1 (Petroleum Impacts from Historical Site Operations)
▧	Historical Commercial Laundry
▨	Historical Boiler Room
🟦	Historical Approval for Automotive Repair and Fuel Storage
⬚	Proposed Cellar Footprint
●	2020 RI Soil Boring Location
⊕	2020 RI Soil Boring/Monitoring Well Location
◒	2020 RI Soil Vapor/Monitoring Well Location
⊙	2020 RI Soil Vapor/Soil Boring Sampling Location
●	2019 Phase II EI Soil Boring Location
⊕	2019 Phase II EI Soil Boring/Monitoring Well Location
⊙	2019 Phase II EI Soil Boring/Soil Vapor Sampling Location

Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 12/23/2020.
3. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
4. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 were collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
5. Sample locations for the Phase II EI and RI were collected using the ArcGIS Collector application on a tablet using GPS location, with the exception of monitoring wells which were surveyed using GPS measurements.

0 15 30
SCALE IN FEET

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Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS - VOCs AND SVOCs

Project No.: 100765102
Date: 4/8/2021
Scale: 1"=15'
Drawn By: IHB
Submission Date:
Figure: 9A

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 9A - Remedial Investigation Soil Analytical Results - VOCs and SVOCs.mxd Date: 4/8/2021 User: ibaker Time: 5:53:55 PM

Sample ID	050_LSB-37_1.0-3.0	051_LSB-37_12.0-14.0
Sample Date	8/31/2020	8/31/2020
Sample Depth (feet bgs)	1-3	12-14
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)		
Total PCBs	ND	ND
Inorganics (mg/kg)		
Arsenic	1.68	5
Barium	71.5	114
Cadmium	0.182 J	0.21 J
Chromium, Hexavalent	ND	ND
Chromium, Trivalent	13	11
Copper	17	17.7
Lead	47.9	**114**
Mercury	0.154	**0.45**
Nickel	12.1	12.9
Selenium	ND	ND
Silver	ND	ND
Zinc	65.4	53.5
PFAS (ppb)		
Perfluorooctanesulfonic Acid (PFOS)	0.251 J	0.225 J
Perfluorooctanoic Acid (PFOA)	0.242 J	0.057 J

Sample ID	053_LSB-40_1.0-3.0	058_LSB-40_6.0-8.0	054_LSB-40_12.0-14.0
Sample Date	8/31/2020	8/31/2020	8/31/2020
Sample Depth (feet bgs)	1-3	6-8	12-14
Pesticides (mg/kg)			
4,4'-DDD	ND	NA	ND
4,4'-DDE	ND	NA	ND
4,4'-DDT	ND	NA	ND
Herbicides (mg/kg)	ND	NA	ND
PCBs (mg/kg)			
Total PCBs	ND	ND	ND
Inorganics (mg/kg)			
Arsenic	**51**	NA	4.23
Barium	184	NA	132
Cadmium	0.997	NA	0.261 J
Chromium, Hexavalent	ND	NA	ND
Chromium, Trivalent	13	NA	17
Copper	**323**	NA	31.8
Lead	**1,230**	NA	**234**
Mercury	**2.44**	NA	**0.355**
Nickel	21.1	NA	16.8
Selenium	**25.2**	NA	ND
Silver	1.39	NA	ND
Zinc	**969**	NA	109
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.611	NA	ND
Perfluorooctanoic Acid (PFOA)	0.166 J	NA	0.17 J

Sample ID	056_LSB-45_7.5-9.5
Sample Date	8/31/2020
Sample Depth (feet bgs)	7.5-9.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	040_LSB-42_1.5-3.5	044_LSB-42_7.5-9.5	041_LSB-42_12.0-14.0
Sample Date	8/28/2020	8/28/2020	8/28/2020
Sample Depth (feet bgs)	1.5-3.5	7.5-9.5	12-14
Pesticides (mg/kg)			
4,4'-DDD	ND	NA	ND
4,4'-DDE	**0.0118**	NA	ND
4,4'-DDT	**0.0232**	NA	ND
Herbicides (mg/kg)	ND	NA	ND
PCBs (mg/kg)			
Total PCBs	ND	0.00632 J	ND
Inorganics (mg/kg)			
Arsenic	8.65	NA	2.2
Barium	128	NA	44.2
Cadmium	**4.34**	NA	0.207 J
Chromium, Hexavalent	**2.52**	NA	ND
Chromium, Trivalent	**120**	NA	8.9
Copper	**155**	NA	39.3
Lead	**652**	NA	**63.1**
Mercury	0.129	NA	**0.466**
Nickel	**252**	NA	14.8
Selenium	1.45 J	NA	ND
Silver	0.531 J	NA	ND
Zinc	**1,000**	NA	100
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.602 J	NA	ND
Perfluorooctanoic Acid (PFOA)	**0.784**	NA	ND

Sample ID	060_LSB-36_1.0-3.0	061_LSB-36_12.0-14.0
Sample Date	9/1/2020	9/1/2020
Sample Depth (feet bgs)	1-3	12-14
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	**0.00989**	ND
4,4'-DDT	**0.0372**	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)		
Total PCBs	0.0337 J	ND
Inorganics (mg/kg)		
Arsenic	**23.7**	2.07
Barium	**586**	96.9
Cadmium	1.52	0.258 J
Chromium, Hexavalent	ND	ND
Chromium, Trivalent	28	16
Copper	**77.4**	25.8
Lead	**1,360**	**76.1**
Mercury	**0.279**	**0.604**
Nickel	21.9	19.9
Selenium	1.62 J	ND
Silver	0.282 J	ND
Zinc	**764**	58.7
PFAS (ppb)		
Perfluorooctanesulfonic Acid (PFOS)	ND	ND
Perfluorooctanoic Acid (PFOA)	ND	0.265 J

Sample ID	039_LSB-48_8.0-10.0
Sample Date	8/28/2020
Sample Depth (feet bgs)	8-10
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	030_LSB-44_3.0-5.0	031_LSB-44_12.0-14.0	032_DUP-1
Sample Date	8/27/2020	8/27/2020	8/27/2020
Sample Depth (feet bgs)	3-5	12-14	12-14
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	ND	ND	ND
Inorganics (mg/kg)			
Arsenic	4.91	6.59	5.97
Barium	161	64.3	89.1
Cadmium	0.344 J	0.194 J	0.221 J
Chromium, Hexavalent	ND	ND	ND
Chromium, Trivalent	13	14	17
Copper	**62.8**	23.3 J	**133 J**
Lead	**265**	**143 J**	**284 J**
Mercury	**0.789**	**0.488 J**	**0.182 J**
Nickel	15.3	12.7	12.8
Selenium	1.07 J	0.66 J	0.432 J
Silver	ND	ND	0.464 J
Zinc	**157**	84.8 J	**515 J**
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**2.02 J**	ND	ND
Perfluorooctanoic Acid (PFOA)	0.26 J	ND	ND

Sample ID	035_LSB-52_9.5-11.5
Sample Date	8/27/2020
Sample Depth (feet bgs)	9.5-11.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	062_LSB-38_2.0-4.0	063_LSB-38_12.0-14.0
Sample Date	9/1/2020	9/1/2020
Sample Depth (feet bgs)	2-4	12-14
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)		
Total PCBs	**0.112 J**	ND
Inorganics (mg/kg)		
Arsenic	4.06	6.38
Barium	85.3	99.9
Cadmium	0.296 J	0.32 J
Chromium, Hexavalent	ND	ND
Chromium, Trivalent	12	12
Copper	25.7 J	31.9
Lead	**263**	**310**
Mercury	**0.469 J**	**0.672**
Nickel	11.9	15.5
Selenium	0.626 J	0.421 J
Silver	ND	ND
Zinc	99.1	**198**
PFAS (ppb)		
Perfluorooctanesulfonic Acid (PFOS)	0.5 J	ND
Perfluorooctanoic Acid (PFOA)	0.124 J	ND

Sample ID	033_LSB-49_9.5-11.5
Sample Date	8/27/2020
Sample Depth (feet bgs)	9.5-11.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	0.0389 J
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	045_LSB-54_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	049_LSB-47_8.5-10.5
Sample Date	8/31/2020
Sample Depth (feet bgs)	8.5-10.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Protection of Groundwater SCOs
Pesticides (mg/kg)				
4,4'-DDD	72-54-8	**0.0033**	92	**14**
4,4'-DDE	72-55-9	**0.0033**	62	**17**
4,4'-DDT	50-29-3	**0.0033**	47	**136**
PCBs (mg/kg)				
Total PCBs	1336-36-3	**0.1**	1	**3.2**
Inorganics (mg/kg)				
Arsenic	7440-38-2	**13**	16	**16**
Barium	7440-39-3	**350**	400	**820**
Cadmium	7440-43-9	**2.5**	9.3	**7.5**
Chromium, Hexavalent	18540-29-9	**1**	400	**19**
Chromium, Trivalent	16065-83-1	**30**	1,500	**~**
Copper	7440-50-8	**50**	270	**1,720**
Lead	7439-92-1	**63**	1,000	**450**
Mercury	7439-97-6	**0.18**	2.8	**0.73**
Nickel	7440-02-0	**30**	310	**130**
Selenium	7782-49-2	**3.9**	1,500	**4**
Silver	7440-22-4	**2**	1,500	**8.3**
Zinc	7440-66-6	**109**	10,000	**2,480**
Analyte	**CAS Number**	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Commercial Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	**0.88**	440	**3.7**
Perfluorooctanoic Acid (PFOA)	335-67-1	**0.66**	500	**1.1**

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, Restricted Use Commercial and Protection of Groundwater Soil Cleanup Objectives (SCO).
2. Sample 067_DUP-2 is a duplicate sample of 065_LSB-39_1.0-3.0 and sample 032_DUP-1 is a duplicate sample of 031_LSB-44_12.0-14.0.
3. ~ = Regulatory limit for this analyte does not exist
4. bgs = below grade surface
5. mg/kg = milligrams per kilogram
6. ppb = parts per billion
7. NA = Not analyzed
8. ND = Not detected

Qualifiers:
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Sample ID	055_LSB-46_6.0-8.0
Sample Date	8/31/2020
Sample Depth (feet bgs)	6-8
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	ND
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	065_LSB-39_1.0-3.0	067_DUP-2	066_LSB-39_12.0-14.0
Sample Date	9/2/2020	9/2/2020	9/2/2020
Sample Depth (feet bgs)	1-3	1-3	12-14
Pesticides (mg/kg)			
4,4'-DDD	**0.00971 J**	0.00118 J	**0.00692 J**
4,4'-DDE	ND	0.000609 J	ND
4,4'-DDT	ND	0.00274 J	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0489	ND	ND
Inorganics (mg/kg)			
Arsenic	8.06	5.86 J	11.2 J
Barium	222	160 J	89.7 J
Cadmium	1.01 J	ND	ND
Chromium, Hexavalent	ND	ND	ND
Chromium, Trivalent	25 J	13 J	20
Copper	**64.4**	47.2 J	**3,220 J**
Lead	**508**	**308 J**	**9,450 J**
Mercury	**0.909**	**0.384 J**	**1.92 J**
Nickel	23.4	12.2 J	20.6 J
Selenium	ND	ND	ND
Silver	0.569 J	0.409 J	**10.2 J**
Zinc	**721 J**	**179 J**	**163**
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.02**	**1.12**	ND
Perfluorooctanoic Acid (PFOA)	**1.58**	**1.37**	ND

Legend

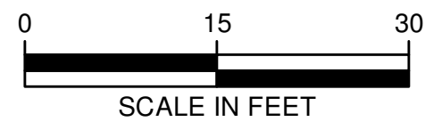
- 🟥 Approximate Site Boundary
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▨ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- ▭ Proposed Cellar Footprint
- ● 2020 RI Soil Boring Location
- ● 2020 RI Soil Boring/Monitoring Well Location
- ● 2020 RI Soil Vapor/Monitoring Well Location
- ◉ 2020 RI Soil Vapor/Soil Boring Sampling Location
- ● 2019 Phase II EI Soil Boring Location
- ● 2019 Phase II EI Soil Boring/Monitoring Well Location
- ◉ 2019 Phase II EI Soil Boring/Soil Vapor Sampling Location

Sample ID	047_LSB-41_4.0-6.0	057_LSB-41_7.5-9.5	048_LSB-41_12.0-14.0
Sample Date	8/31/2020	8/31/2020	8/31/2020
Sample Depth (feet bgs)	4-6	7.5-9.5	12-14
Pesticides (mg/kg)			
4,4'-DDD	ND	NA	ND
4,4'-DDE	0.000585 J	NA	ND
4,4'-DDT	0.002 J	NA	ND
Herbicides (mg/kg)	ND	NA	ND
PCBs (mg/kg)			
Total PCBs	ND	ND	0.00861 J
Inorganics (mg/kg)			
Arsenic	4.47 J	NA	**15.5**
Barium	145 J	NA	106
Cadmium	0.984	NA	**21**
Chromium, Hexavalent	ND	NA	ND
Chromium, Trivalent	**120**	NA	12
Copper	**197 J**	NA	33.4
Lead	**222**	NA	**370**
Mercury	**0.181 J**	NA	**0.206**
Nickel	**31**	NA	17.6
Selenium	ND	NA	ND
Silver	ND	NA	ND
Zinc	**326**	NA	**5,310**
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.456 J	NA	ND
Perfluorooctanoic Acid (PFOA)	0.191 J	NA	ND

Sample ID	037_LSB-43_2.5-4.5	038_LSB-43_12.0-14.0
Sample Date	8/28/2020	8/28/2020
Sample Depth (feet bgs)	2.5-4.5	12-14
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	0.0023	ND
4,4'-DDT	**0.00692 J**	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)		
Total PCBs	0.0623	ND
Inorganics (mg/kg)		
Arsenic	3	1.18
Barium	82.9	69.7
Cadmium	0.264 J	0.126 J
Chromium, Hexavalent	ND	ND
Chromium, Trivalent	13	16
Copper	42	44.8
Lead	**830**	54
Mercury	**0.33**	**0.22**
Nickel	10.9	**35.4**
Selenium	0.672 J	ND
Silver	ND	ND
Zinc	**137**	95.4
PFAS (ppb)		
Perfluorooctanesulfonic Acid (PFOS)	**1.33 J**	0.569 J
Perfluorooctanoic Acid (PFOA)	0.286 J	ND

Sample ID	042_LSB-50_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	0.0637 J
Inorganics (mg/kg)	NA
PFAS (ppb)	NA

Sample ID	043_LSB-53_9.5-11.5
Sample Date	8/28/2020
Sample Depth (feet bgs)	9.5-11.5
Pesticides (mg/kg)	NA
Herbicides (mg/kg)	NA
PCBs (mg/kg)	
Total PCBs	**0.211 J**
Inorganics (mg/kg)	NA
PFAS (ppb)	NA



Notes:
1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 12/23/2020.
3. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
4. Sample locations for the Phase II EI and RI were collected using the ArcGIS Collector application on a tablet using GPS location, with the exception of monitoring wells which were surveyed using GPS measurements.

LANGAN
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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

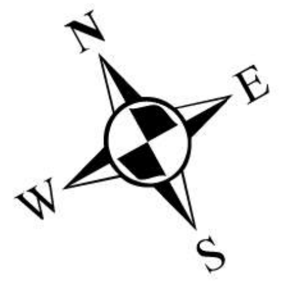
Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK

Drawing Title
REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS - PESTICIDES, PCBS, METALS, AND PFAS

Project No. 100765102
Date 4/12/2021
Scale 1"=15'
Drawn By IHB
Submission Date

Figure
9B

Path: \\langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 9B - Remedial Investigation Soil Analytical Results – Pesticides, PCBs, Metals, and PFAS.mxd Date: 4/12/2021 User: aruane Time: 1:05:44 PM

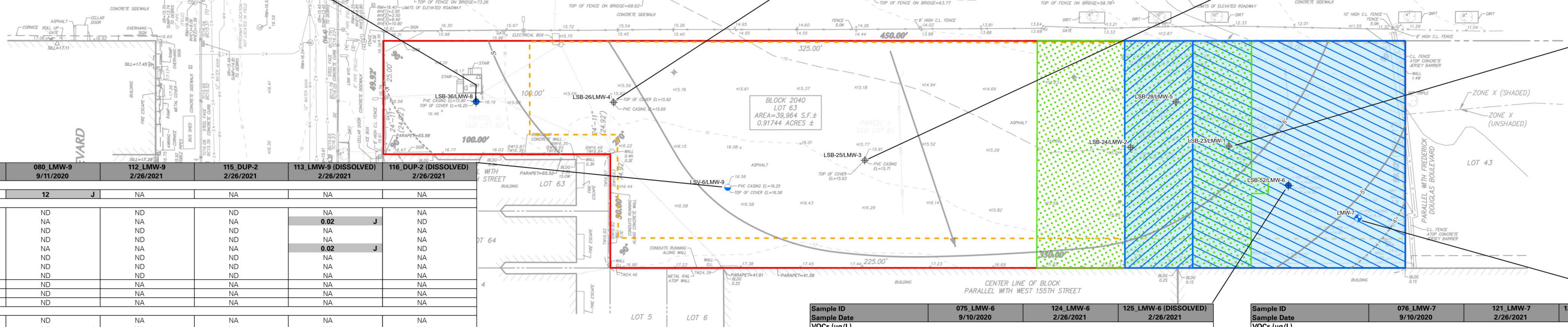


Sample ID Sample Date	082_LMW-8 9/11/2020	109_LMW-8 2/26/2021	110_LMW-8 (DISSOLVED) 2/26/2021
VOCs (µg/L)			
Tert-Butyl Methyl Ether	1.8 J	NA	NA
SVOCs (µg/L)			
Benzo(a)anthracene	**2.2**	**0.07 J**	NA
Benzo(a)anthracene (Dissolved)	NA	NA	ND
Benzo(a)pyrene	**2**	**0.05 J**	NA
Benzo(b)fluoranthene	**2.2**	**0.05 J**	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	ND
Benzo(k)fluoranthene	**0.77**	ND	NA
Chrysene	**2.1**	**0.06 J**	NA
Indeno(1,2,3-cd)pyrene	**1.2**	ND	NA
Pesticides (µg/L)	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA
PCBs (µg/L)	ND	NA	NA
Inorganics (µg/L)			
Antimony	2.06 J	NA	NA
Antimony (Dissolved)	1.23 J	NA	NA
Iron	**4,210**	NA	NA
Iron (Dissolved)	185	NA	NA
Lead	**68.6**	NA	NA
Magnesium	**118,000**	NA	NA
Magnesium (Dissolved)	**117,000**	NA	NA
Manganese	**429.1**	NA	NA
Manganese (Dissolved)	**447.5**	NA	NA
Mercury	**0.77**	NA	NA
Sodium	**186,000**	NA	NA
Sodium (Dissolved)	**182,000**	NA	NA
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	8.54 J	NA	NA
Perfluorooctanoic Acid (PFOA)	**43.4**	NA	NA

Sample ID Sample Date	081_LMW-4 9/11/2020	106_LMW-4 2/26/2021	107_LMW-4 (DISSOLVED) 2/26/2021
VOCs (µg/L)			
Tert-Butyl Methyl Ether	5.7 J	NA	NA
SVOCs (µg/L)			
Benzo(a)anthracene	**0.09 J**	ND	NA
Benzo(a)anthracene (Dissolved)	NA	NA	ND
Benzo(a)pyrene	**0.09 J**	ND	NA
Benzo(b)fluoranthene	**0.1 J**	ND	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	ND
Benzo(k)fluoranthene	**0.03 J**	ND	NA
Chrysene	**0.08 J**	ND	NA
Indeno(1,2,3-cd)pyrene	**0.06 J**	ND	NA
Pesticides (µg/L)	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA
PCBs (µg/L)	ND	NA	NA
Inorganics (µg/L)			
Antimony	**4.2**	NA	NA
Antimony (Dissolved)	**6.38**	NA	NA
Iron	**12,600**	NA	NA
Iron (Dissolved)	56	NA	NA
Lead	**117.6**	NA	NA
Magnesium	**96,100**	NA	NA
Magnesium (Dissolved)	**104,000**	NA	NA
Manganese	**669**	NA	NA
Manganese (Dissolved)	**579.8**	NA	NA
Mercury	**2.63**	NA	NA
Sodium	**139,000**	NA	NA
Sodium (Dissolved)	**154,000**	NA	NA
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	6.37	NA	NA
Perfluorooctanoic Acid (PFOA)	**31.8**	NA	NA

Sample ID Sample Date	083_LMW-3 9/11/2020	118_LMW-3 2/26/2021	119_LMW-3 (DISSOLVED) 2/26/2021
VOCs (µg/L)			
Tert-Butyl Methyl Ether	**18 J**	NA	NA
SVOCs (µg/L)			
Benzo(a)anthracene	ND	ND	NA
Benzo(a)anthracene (Dissolved)	NA	NA	ND
Benzo(a)pyrene	ND	ND	NA
Benzo(b)fluoranthene	ND	ND	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	ND
Benzo(k)fluoranthene	ND	ND	NA
Chrysene	ND	ND	NA
Indeno(1,2,3-cd)pyrene	ND	ND	NA
Pesticides (µg/L)	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA
PCBs (µg/L)	ND	NA	NA
Inorganics (µg/L)			
Antimony	ND	NA	NA
Antimony (Dissolved)	ND	NA	NA
Iron	**5,920**	NA	NA
Iron (Dissolved)	**2,320**	NA	NA
Lead	1.04	NA	NA
Magnesium	22,500	NA	NA
Magnesium (Dissolved)	22,200	NA	NA
Manganese	**675**	NA	NA
Manganese (Dissolved)	**671**	NA	NA
Mercury	ND	NA	NA
Sodium	**43,900**	NA	NA
Sodium (Dissolved)	**43,300**	NA	NA
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	6.87	NA	NA
Perfluorooctanoic Acid (PFOA)	**33.1**	NA	NA

Sample ID Sample Date	073_LMW-1 9/10/2020	074_DUP-1 9/10/2020	127_LMW-1 2/26/2021	128_LMW-1 (DISSOLVED) 2/26/2021
VOCs (µg/L)				
Tert-Butyl Methyl Ether	ND	ND	NA	NA
SVOCs (µg/L)				
Benzo(a)anthracene	ND	ND	ND	NA
Benzo(a)anthracene (Dissolved)	NA	NA	NA	ND
Benzo(a)pyrene	ND	ND	ND	NA
Benzo(b)fluoranthene	ND	ND	ND	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	NA	ND
Benzo(k)fluoranthene	ND	ND	ND	NA
Chrysene	ND	**0.01 J**	ND	NA
Indeno(1,2,3-cd)pyrene	**0.04 J**	ND	ND	NA
Pesticides (µg/L)	ND	ND	NA	NA
Herbicides (µg/L)	ND	ND	NA	NA
PCBs (µg/L)	ND	ND	NA	NA
Inorganics (µg/L)				
Antimony	ND	ND	NA	NA
Antimony (Dissolved)	ND	ND	NA	NA
Iron	**1,880**	**1,930**	NA	NA
Iron (Dissolved)	42.6 J	54.5	NA	NA
Lead	ND	0.46 J	NA	NA
Magnesium	19,900	19,400	NA	NA
Magnesium (Dissolved)	20,000	21,100	NA	NA
Manganese	**641.6**	**639**	NA	NA
Manganese (Dissolved)	**660.5**	**685.6**	NA	NA
Mercury	ND	ND	NA	NA
Sodium	**52,500**	**51,000**	NA	NA
Sodium (Dissolved)	**52,900**	**55,700**	NA	NA
PFAS (ng/L)				
Perfluorooctanesulfonic Acid (PFOS)	**30.9 J**	**31 J**	NA	NA
Perfluorooctanoic Acid (PFOA)	**21.2**	**21.6**	NA	NA



Sample ID Sample Date	080_LMW-9 9/11/2020	112_LMW-9 2/26/2021	115_DUP-2 2/26/2021	113_LMW-9 (DISSOLVED) 2/26/2021	116_DUP-2 (DISSOLVED) 2/26/2021
VOCs (µg/L)					
Tert-Butyl Methyl Ether	**12 J**	NA	NA	NA	NA
SVOCs (µg/L)					
Benzo(a)anthracene	ND	ND	ND	NA	NA
Benzo(a)anthracene (Dissolved)	NA	NA	NA	**0.02 J**	ND
Benzo(a)pyrene	ND	ND	ND	NA	NA
Benzo(b)fluoranthene	ND	ND	ND	NA	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	NA	**0.02 J**	ND
Benzo(k)fluoranthene	ND	ND	ND	NA	NA
Chrysene	ND	ND	ND	NA	NA
Indeno(1,2,3-cd)pyrene	ND	ND	ND	NA	NA
Pesticides (µg/L)	ND	NA	NA	NA	NA
Herbicides (µg/L)	ND	NA	NA	NA	NA
PCBs (µg/L)	ND	NA	NA	NA	NA
Inorganics (µg/L)					
Antimony	ND	NA	NA	NA	NA
Antimony (Dissolved)	2.5 J	NA	NA	NA	NA
Iron	**3,010**	NA	NA	NA	NA
Iron (Dissolved)	**896**	NA	NA	NA	NA
Lead	ND	NA	NA	NA	NA
Magnesium	16,100	NA	NA	NA	NA
Magnesium (Dissolved)	16,400	NA	NA	NA	NA
Manganese	**425.7**	NA	NA	NA	NA
Manganese (Dissolved)	**422.1**	NA	NA	NA	NA
Mercury	ND	NA	NA	NA	NA
Sodium	**36,800 J**	NA	NA	NA	NA
Sodium (Dissolved)	**37,400**	NA	NA	NA	NA
PFAS (ng/L)					
Perfluorooctanesulfonic Acid (PFOS)	6.86 J	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	7.53	NA	NA	NA	NA

Sample ID Sample Date	075_LMW-6 9/10/2020	124_LMW-6 2/26/2021	125_LMW-6 (DISSOLVED) 2/26/2021
VOCs (µg/L)			
Tert-Butyl Methyl Ether	ND	NA	NA
SVOCs (µg/L)			
Benzo(a)anthracene	ND	ND	NA
Benzo(a)anthracene (Dissolved)	NA	NA	ND
Benzo(a)pyrene	ND	ND	NA
Benzo(b)fluoranthene	ND	ND	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	ND
Benzo(k)fluoranthene	ND	ND	NA
Chrysene	ND	ND	NA
Indeno(1,2,3-cd)pyrene	ND	ND	NA
Pesticides (µg/L)	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA
PCBs (µg/L)	ND	NA	NA
Inorganics (µg/L)			
Antimony	ND	NA	NA
Antimony (Dissolved)	ND	NA	NA
Iron	**2,920**	NA	NA
Iron (Dissolved)	60.6	NA	NA
Lead	1.18	NA	NA
Magnesium	24,000	NA	NA
Magnesium (Dissolved)	24,900	NA	NA
Manganese	**489.8**	NA	NA
Manganese (Dissolved)	**505.3**	NA	NA
Mercury	ND	NA	NA
Sodium	**55,200**	NA	NA
Sodium (Dissolved)	**57,000**	NA	NA
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	**33.5 J**	NA	NA
Perfluorooctanoic Acid (PFOA)	9.01	NA	NA

Sample ID Sample Date	076_LMW-7 9/10/2020	121_LMW-7 2/26/2021	122_LMW-7 (DISSOLVED) 2/26/2021
VOCs (µg/L)			
Tert-Butyl Methyl Ether	ND	NA	NA
SVOCs (µg/L)			
Benzo(a)anthracene	ND	ND	NA
Benzo(a)anthracene (Dissolved)	NA	NA	ND
Benzo(a)pyrene	ND	ND	NA
Benzo(b)fluoranthene	ND	ND	NA
Benzo(b)fluoranthene (Dissolved)	NA	NA	ND
Benzo(k)fluoranthene	ND	ND	NA
Chrysene	ND	ND	NA
Indeno(1,2,3-cd)pyrene	ND	ND	NA
Pesticides (µg/L)	ND	NA	NA
Herbicides (µg/L)	ND	NA	NA
PCBs (µg/L)	ND	NA	NA
Inorganics (µg/L)			
Antimony	ND	NA	NA
Antimony (Dissolved)	ND	NA	NA
Iron	**3,740**	NA	NA
Iron (Dissolved)	32.2 J	NA	NA
Lead	3.17	NA	NA
Magnesium	18,700	NA	NA
Magnesium (Dissolved)	19,600	NA	NA
Manganese	**486.1**	NA	NA
Manganese (Dissolved)	**514**	NA	NA
Mercury	ND	NA	NA
Sodium	**67,600**	NA	NA
Sodium (Dissolved)	**72,300**	NA	NA
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	**62.8 J**	NA	NA
Perfluorooctanoic Acid (PFOA)	8.85	NA	NA

Analyte	CAS Number	NYSDEC SGVs
VOCs (µg/L)		
Tert-Butyl Methyl Ether	1634-04-4	**10**
SVOCs (µg/L)		
Benzo(a)anthracene	56-55-3	**0.002**
Benzo(a)pyrene	50-32-8	**0**
Benzo(b)fluoranthene	205-99-2	**0.002**
Benzo(k)fluoranthene	207-08-9	**0.002**
Chrysene	218-01-9	**0.002**
Indeno(1,2,3-cd)pyrene	193-39-5	**0.002**
Inorganics (µg/L)		
Antimony	7440-36-0	**3**
Iron	7439-89-6	**300**
Lead	7439-92-1	**25**
Magnesium	7439-95-4	**35,000**
Manganese	7439-96-5	**300**
Mercury	7439-97-6	**0.7**
Sodium	7440-23-5	**20,000**
Analyte	**CAS Number**	**NYSDEC January 2021 Guidance Values**
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	**10**
Perfluorooctanoic Acid (PFOA)	335-67-1	**10**

Legend

- 🟥 Approximate Site Boundary
- 🟩 AOC-1 (Petroleum Impacts from Historical Site Operations)
- ▧ Historical Commercial Laundry
- ▨ Historical Boiler Room
- 🟦 Historical Approval for Automotive Repair and Fuel Storage
- → Groundwater Flow Direction
- — Groundwater Elevation Contours
- --- Inferred Groundwater Elevation Contours
- ● 2020 RI Soil Boring/Monitoring Well Location
- ● 2020 RI Soil Vapor/Monitoring Well Location
- ● 2020 RI Monitoring Well Location
- ● Historical Soil Boring/Monitoring Well Location

Notes:

1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 6 November 2020.
3. Sample locations for the Phase II and RI were surveyed using GPS measurements.
4. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
5. Groundwater measurements and corresponding obtained on 2 September 2020.
6. LMW-2 and LMW-5 were not sampled due to the presence of LNAPL. As such, petroleum fingerprint samples were collected.
7. Pesticides, herbicides, and PCBs were not detected during the 2020 RI sampling event.

0 25 50
SCALE IN FEET

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 (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Sample 074_DUP-1 is a duplicate sample of 073_LMW-1 and sample 115_DUP-2 is a duplicate sample of 116_DUP-2 (DISSOLVED).
4. µg/L = micrograms per liter
5. ng/L = nanograms per liter
6. NA = Not analyzed
7. ND = Not detected

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

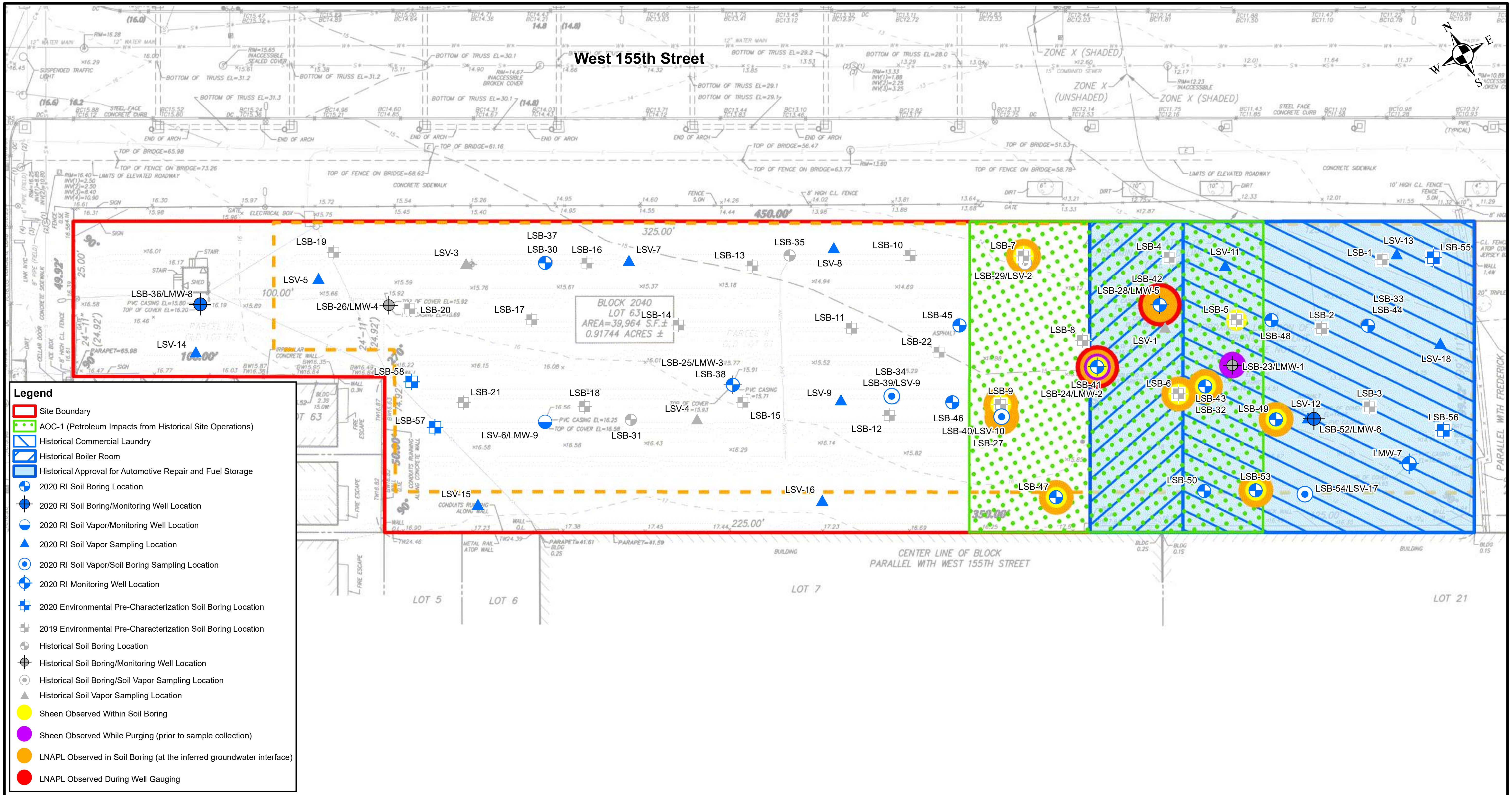
Project
280 WEST 155TH STREET
DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
NEW YORK
MANHATTAN NEW YORK

Drawing Title
POTENTIOMETRIC
SURFACE MAP
AND REMEDIAL
INVESTIGATION
GROUNDWATER
ANALYTICAL RESULTS

Project No. 100765102
Date 04/15/2021
Scale 1"= 300'
Drawn By ELB

Figure
10

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\APRX\100765102\100765102_Map8+10.aprx Date: 4/15/2021 User: eburns Time: 5:18 PM



Notes:

1. Site boundary from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed Cellar Footprint shown according to site plan SOE Overall Plan SOE-100 prepared by Ancora Engineering PLLC as part of the support of excavation package dated 6 November 2020.
3. Sample locations for the Pre-Characterization were collected using field measurements taken from the nearest property line. Sample locations for the Phase II and RI were collected using the ArcGIS Collector application on a tablet utilizing GPS location, with the exception of monitoring wells which were surveyed using GPS measurements.
4. AOC-2 (Chlorinated VOC Impacts from Historical Site Operations) and AOC-3 (Historical Filling Associated with Harlem River) encompass the entire Site footprint.
5. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 were collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
6. A minor sheen was observed during purging activites at LMW-3 on 3 June 2019 during the Phase II EI, but was not observed 11 September 2020 during the RI.

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project	Drawing Title	Project No.	Figure
280 WEST 155TH STREET DEVELOPMENT NYSDEC BCP Site No.: C231138 BLOCK No. 2040, LOT No. 48 (Former Lots 48, 61 and 62) NEW YORK MANHATTAN NEW JERSEY	SHEEN AND NAPL OBSERVATIONS	100765102 Date 4/8/2021 Scale 1 " = 30 ' Drawn By ATR	11

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2020-11 - RIR\Figure 11 - Sheen and LNAPL Observations.mxd Date: 4/8/2021 User: ibaker Time: 5:47:49 PM

APPENDIX A

Geophysical Report

HAGER-RICHTER
GEOSCIENCE, INC.

GEOPHYSICAL SURVEY
280W 155TH STREET
MANHATTAN, NEW YORK

Prepared for:

Langan
300 Kimball Drive, 4th Floor
Parsippany, New jersey 07054

Prepared by:

Hager-Richter Geoscience, Inc.
8 Industrial Way - D10
Salem, New Hampshire 03079

File 19JCC101
September, 2020

HAGER-RICHTER
GEOSCIENCE, INC.

GEOPHYSICS FOR THE ENGINEERING COMMUNITY
SALEM, NEW HAMPSHIRE
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FORDS, NEW JERSEY
Tel: 732.661.0555

September 28, 2020
File 19JCC101

Allyson Kritzer
Senior Staff Engineer
Langan
300 Kimball Drive, 4th Floor
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Tel: 973.560.4289
Cell: 201.755.6973
Email: AKritzer@Langan.com

RE: Geophysical Survey
280 W.155th Street
Manhattan, New York

Dear Ms. Kritzer:

In this report, we summarize the results of a geophysical survey conducted by Hager-Richter Geoscience, Inc. (HRGS) at the above referenced site in Manhattan, New York for Langan in August 2020. The scope of the survey and area of interest were specified by Langan.

INTRODUCTION

The site is a currently active asphalt-paved parking lot located at 280 W. 155th street in Manhattan, New York. The general location of the site is shown in Figure 1. Langan requested a geophysical survey to determine the locations of utilities in the accessible exterior portions of the area of interest and to clear of utilities thirty-seven (37) proposed boring locations

The area of interest (AOI) measured approximately 440 feet by 100 feet. The limits of the area of interest are shown in Figure 2. We note that the parking lot was active during the time of the geophysical survey which limited the access for the sitewide survey. An effort was made to relocate as many vehicles as possible, however not all vehicles were able to be moved.

OBJECTIVE

The objective of the geophysical survey was to detect, and if detected, to locate subsurface utilities in the accessible portions of an approximately 440 ft by 100ft area of interest at the Site specified by Langan.

THE SURVEY

Alexis Martinez, Amanda Fabian, P.G., and Justin Covert of HRGS conducted the geophysical survey over three days between August 27 and August 31, 2020. The project was coordinated with Ms. Allyson Kritzer of Langan. Ms. Molly Gutelius, also of Langan, was onsite during the survey.

The utility location survey of the specified area of interest was conducted using three complementary methods: time domain electromagnetic induction metal detection (EM), ground penetrating radar (GPR), and precision utility location (PUL). The EM data were acquired at approximately 8-inch intervals along lines spaced 5 feet apart across the accessible portions of the specified areas of interest. The EM survey detects buried metal. However, the EM method cannot provide information on the type of objects causing an EM anomaly.

GPR data were acquired along traverses oriented in two mutually perpendicular directions, with lines spaced no more than 5 feet apart across the accessible portions of the areas of interest. The GPR method is capable of detecting both metal and nonmetal objects.

The PUL method was used to search for subsurface utilities in the areas of interest by passively searching for signals from active electric lines and by actively tracing signals applied by direct connections to accessible utility structures such as hydrants, valves, and other exposed pipes or conduits.

A local survey grid was established in the area of interest based on surrounding fences. The locations of utilities detected at the time of the survey were marked on site and their locations were recorded with respect to the local survey grid for inclusion on the site plan. The geophysical data were reviewed in the office and additional utility segments and other structures were identified, and their locations are shown on the plan included in this report.

EQUIPMENT

EM61. The EM survey was conducted using a Geonics EM61-MK2 time domain electromagnetic induction metal detector. The EM61-MK2 instrument was designed specifically for detecting buried metal objects such as utilities, underground storage tanks (USTs), and drums. An air-cored transmitter coil generates a pulsed primary magnetic field in the earth, thereby inducing eddy currents in nearby metal objects. The eddy current produces a secondary magnetic field that is sensed by two receiver coils, one coincident with the transmitter and one positioned 40 cm above the main coil. By measuring the secondary magnetic field after the current in the ground has dissipated but before the current in metal objects has dissipated, the instrument responds only to the secondary magnetic field produced by metal objects. Four channels of secondary response are measured in mV and are recorded on a digital data logger. The system is generally operated by pushing the coils configured as a wagon with an odometer mounted on the axle to trigger the data logger automatically at approximately 8-inch intervals.

GPR. The GPR survey was conducted using a Geophysical Survey Systems, Inc. UtilityScan Hyper Stacking digital GPR system using both 350 MHZ antenna with 50 ns time window.

GPR uses a high-frequency electromagnetic pulse (referred to herein as “radar signal”) transmitted from a radar antenna to probe the subsurface. The transmitted radar signals are reflected from subsurface interfaces of materials with contrasting electrical properties. Travel times of the radar signal can be converted to approximate depth below the surface by correlation with targets of known depths and by a curve matching routine. We monitor the acquisition of GPR data in the field and record the GPR data digitally for subsequent processing. Interpretation of the records is based on the nature and intensity of the reflected signals and on the resulting patterns.

Data from the GPR survey were processed using RADAN 7.4 GPR processing software from Geophysical Survey Systems, Inc. We reviewed profile images of the GPR data. Interpretation of the records is based on the nature and intensity of the reflected signals and on the resulting patterns.

PUL. The PUL survey was conducted using a Radiodetection RD 8000 series PUL instrument. The RD 8000 series consists of separate transmitter and receiver. The system can be used in "passive" and "active" modes to locate buried pipes by detecting electromagnetic signals carried by the pipes. In the "passive" mode, only the receiver unit is used to detect signals carried by the pipe from nearby power lines, live signals transmitted along underground power cables, or very low frequency radio signals resulting from long wave radio transmissions that flow along buried conductors. In the "active" mode of operation, the transmitter is used to induce a signal on a target pipe, and the receiver is used to trace the signal along the length of the pipe. Our system uses a 10W transmitter.

LIMITATIONS OF THE METHODS

> HRGS MAKES NO GUARANTEE THAT ALL TARGETS WERE DETECTED IN THIS SURVEY. HRGS IS NOT RESPONSIBLE FOR DETECTING TARGETS THAT CANNOT BE DETECTED BY THE METHODS EMPLOYED OR BECAUSE OF SITE CONDITIONS. GPR SIGNAL PENETRATION MIGHT NOT BE SUFFICIENT TO DETECT ALL TARGETS.

Field mark-outs. Utilities detected by the PUL method at the time of the survey are marked in the field. Adverse weather and site conditions (rain, snow, snow and soil piles, uneven surfaces, high traffic, etc.) can hamper in-field interpretation. Mark-outs made on wet pavement, snow, snow piles, gravel surfaces, or in active construction zones may not last. HRGS is not responsible for maintaining utility mark-outs after leaving the work area.

EM61. The EM61 cannot detect non-metallic objects. The data from an EM61 survey are adversely affected by surface metal. The EM61 has a depth sensitivity limited to about 12 feet.

The instrument is relatively cumbersome and works best where the transmit and receive coils can be hand pushed in a small wagon.

Detection and identification should be clearly differentiated. Detection is the recognition of the presence of a metal object, and the electromagnetic method is excellent for such purposes. Identification, on the other hand, is determination of the nature of the causative body (i.e., what is the body -- a cache of drums, UST, automobile, white goods, etc.?). Although the EM data cannot be used to identify all buried metal objects, they provide excellent guides to the identification of some objects. For example, buried metal utilities produce anomalies with lengths many times their widths.

GPR. There are limitations of the GPR technique as used to detect and/or locate targets such as those of the objectives of this survey. Limitations include: (1) surface conditions, (2) electrical conductivity of the ground, (3) contrast of the electrical properties of the target and the surrounding soil, and (4) spacing of the traverses. Of these restrictions, only the last is controllable by us.

The condition of the ground surface can affect the quality of the GPR data and the depth of penetration of the GPR signal. Sites covered with snow piles, high grass, bushes, landscape structures, debris, obstacles, soil mounds, etc. limit the survey access and the coupling of the GPR antenna with the ground. In many cases, the GPR signal will not penetrate below concrete pavement, especially inside buildings, and a target may not be detectable. The GPR method also commonly does not provide useful data under canopies found at some facilities.

The electrical conductivity of the ground determines the attenuation of the GPR signal and thereby limits the maximum depth of exploration. For example, the GPR signal does not penetrate clay-rich soils, and targets buried in clay might not be detected.

A definite contrast in the electrical conductivities of the surrounding ground and the target material is required to obtain a reflection of the GPR signal. If the contrast is too small, possibly due to construction details or deeply corroded metal in the target, then the reflection may be too weak to recognize, and the target can be missed.

Spacing of the traverses is limited by access at many sites, but where flexibility of traverse spacing is possible, the spacing is adjusted to the size of the target. The GPR operator controls the spacing between lines, and the design of the survey is based on the dimensions of the smallest feature of interest. Targets with dimensions smaller than the spacing between GPR survey lines can be missed.

PUL. The PUL equipment cannot detect non-metallic utilities, such as pipes constructed of vitrified clay, transite, plastic, PVC, and unreinforced concrete, when used in passive mode alone. Such pipes can be detected if a wire tracer is installed with access to such tracer for transmission of a signal or where access (such as floor drains and clean-outs) permits insertion of a device on which a signal can be transmitted. In some, but not all cases, the subsurface utility designation equipment cannot detect metal utilities reliably under reinforced concrete because the signal couples onto the metal reinforcing in the concrete. Similarly, the method commonly cannot be used adjacent to grounded metal structures such as chain link fences and metal guardrails. In congested areas, where several utilities are bundled or located within a short distance of each other, the signal transmitted on one utility can couple onto adjacent utilities, and the accuracy of the location indicated by the instrument decreases.

RESULTS

General. The geophysical survey was conducted using the EM61, GPR, and PUL methods across the accessible portions of the area of interest specified by Langan. Figure 2 shows a color contour plot of the EM61, and Figure 3 the locations of the GPR traverses and the integrated interpretation of the geophysical data.

EM61. Interpretation of EM61 data is based on the relative response of the instrument in millivolts to local conditions. The instrument is not calibrated to provide an absolute measure of a particular property, such as the conductivity of the soil or the strength of the earth's magnetic field. Subsurface metal objects produce sharply defined positive anomalies when the EM61 is positioned directly over them. Acquiring data at short intervals along closely spaced lines, as was done at the subject site, provides high spatial resolution of the location and footprint of the targets. Thus, buried metal is recognized in contour plots of EM61 data by positive anomalies with spatial dimensions roughly corresponding to the dimensions of the buried metal.

Several high amplitude EM anomalies are evident in Figure 2. Surface metal objects typically produce high amplitude EM anomalies, and those EM anomalies attributed to the effects of surface metal structures such as vehicles, fences, buildings, etc. are depicted as blue hatched areas in Figure 3. We note that the presence or absence of subsurface metal in such areas cannot be determined on the basis of the EM data alone due to the anomaly caused by the surface metal object.

Additional moderate to high amplitude EM anomalies were detected in the survey area. GPR records in these locations were carefully examined to determine a cause. Linear low-amplitude EM anomalies are evident in the EM data and are attributed to possible utilities. A portion of a large high amplitude EM anomaly detected in the eastern portion of the AOI is caused by a buried reinforced structure. The other EM anomalies are attributed to buried metal and are shown as red hatched areas on Figure 3.

GPR. The locations of the GPR traverses and the integrated interpretation of the geophysical data are shown in Figure 3. Apparent GPR signal penetration was fair, with two-way travel time reflections received from 10 to 15 ns. Based on velocity matching calibrations made for the area of interest, the GPR signal penetration is estimated to have been about 2-3 feet.

The GPR records exhibit linear reflections typical for utilities or segments of utilities. GPR reflections typical for USTs were not observed in the GPR records for the Site. As noted, the

GPR records at the locations of EM anomalies were reviewed. The GPR records did not reveal the presence of regularly shaped objects such as USTs or drums, therefore, we attribute those anomalies to the presence of buried debris containing metal. Whether buried structures such as USTs, utilities, foundations, etc. occur at a depth greater than the effective depth of investigation of the GPR (about 2-3 feet) or in areas inaccessible to the geophysical survey cannot be determined from the geophysical data.

Some of the utilities were also detected by the PUL method, and their locations are shown in Figure 3.

PUL. The PUL transmitter was attached to conduits located in and on the perimeter of the AOI. We also conducted a PUL survey in "passive" mode to detect signals carried by utilities from nearby power lines. The locations of utilities detected were marked in the field at the time of the survey and are shown in Figure 3.

The proposed locations of several boreholes to be installed by Langan were marked in the field. Additional GPR records were acquired in the vicinity of the proposed boring locations to ensure that obstructions were not present. The approximate locations of the proposed borings are shown in the figures for reference.

CONCLUSIONS

Based upon the geophysical survey conducted by HRGS at an active parking lot located at 280 W.155th Street in Manhattan, New York for Langan in August 2020, we conclude:

- Several electric lines were detected in the area of interest.
- Unidentified possible utilities were detected in the area of interest.
- An unidentified buried reinforced area was detected in the east portion of the area of interest.
- No USTs were detected within the investigated areas of interest. Whether buried structures such as USTs, utilities, foundations, etc. occur at a depth greater than the effective depth of investigation of the GPR (about 2-3 feet) or in areas inaccessible to the geophysical survey cannot be determined from the geophysical data.

LIMITATIONS ON USE OF THIS REPORT

This letter report was prepared for the exclusive use of Langan (Client). No other party shall be entitled to rely on this Report, or any information, documents, records, data, interpretations, advice or opinions given to Client by Hager-Richter Geoscience, Inc. (HRGS) in the performance of its work. The Report relates solely to the specific project for which HRGS has been retained and shall not be used or relied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the express written permission of HRGS. Any unpermitted use by Client or any third party shall be at Client's or such third party's own risk and without any liability to HRGS.

HRGS has used reasonable care, skill, competence and judgment in the performance of' its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by HRGS should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

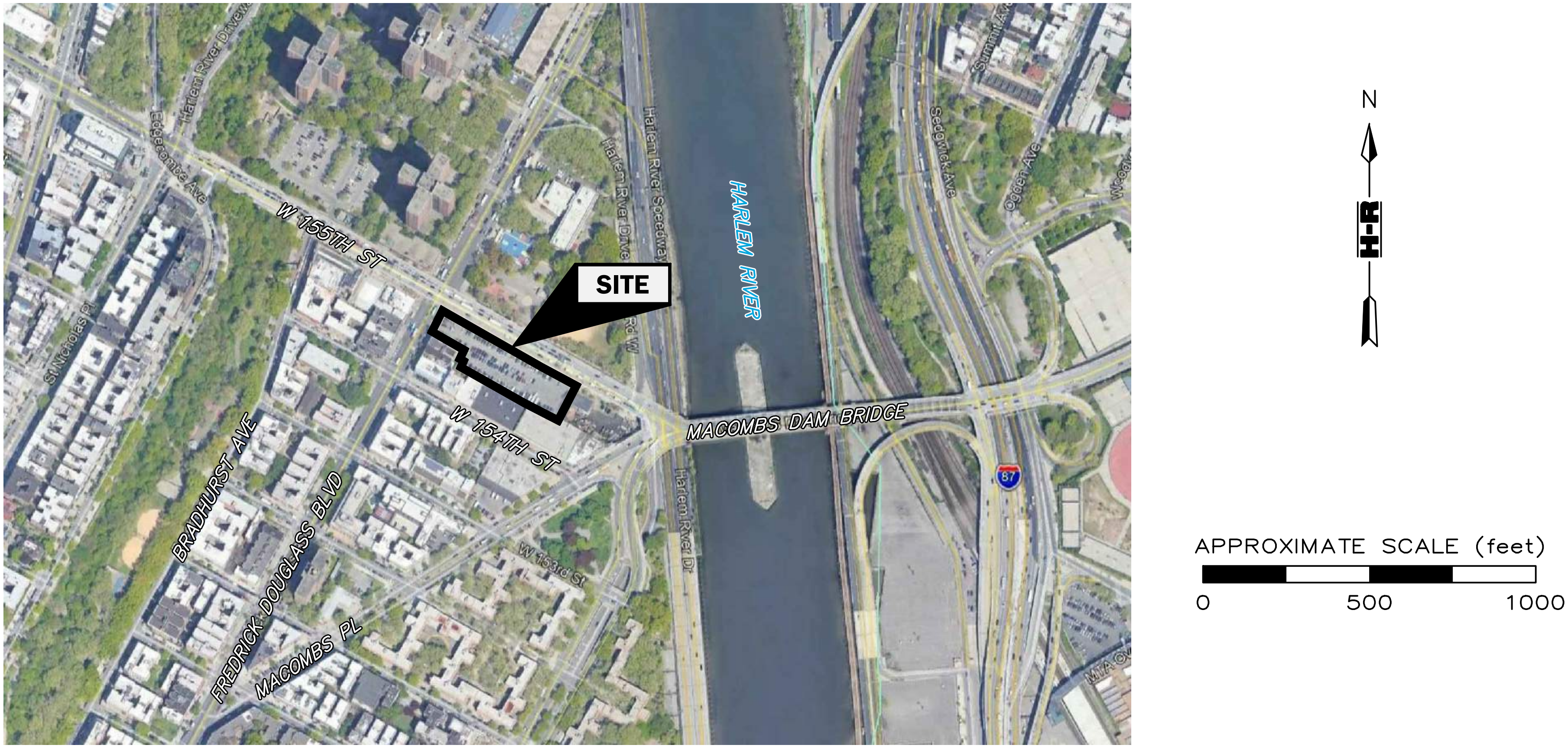
Except as expressly provided in this limitations section, HRGS makes no other representation or warranty of any kind whatsoever, oral or written, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed. If you have any questions or comments on this letter report, please contact us at your convenience. It has been a pleasure to work with Langan on this project. We look forward to working with you again in the future.

Sincerely,
HAGER-RICHTER GEOSCIENCE, INC.

Amanda Fabian

Amanda Fabian, P.G.
Geophysicist

Attachments: Figures 1 - 3



LOCATION

NOTE:

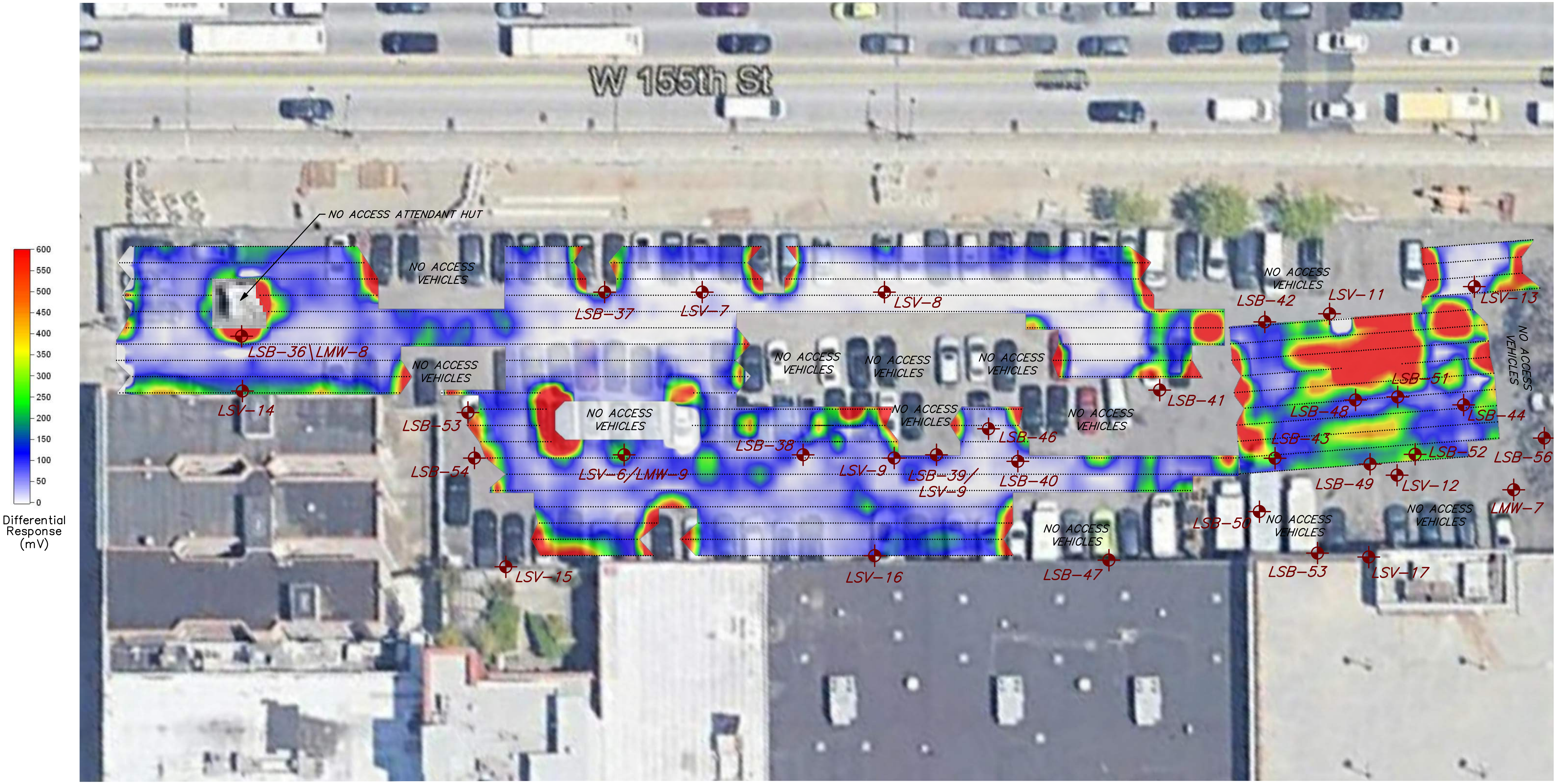
Modified from Google Earth Pro aerial photograph.

* DBA HR Geological
Services in New York

Figure 1
General Site Location
280 W 155th Street
Manhattan, New York

File 19JCC101 | September, 2020

HAGER–RICHTER*
Salem, NH | Fords, NJ



NOTES:

1. Modified from Google Earth Pro aerial photograph.
2. Data were acquired with Geonics EM61–MK2. Differential response shown.
3. Differential response equals top coil response – bottom coil response.

SCALE (feet)

0 30 60

LEGEND

········ DATA STATIONS

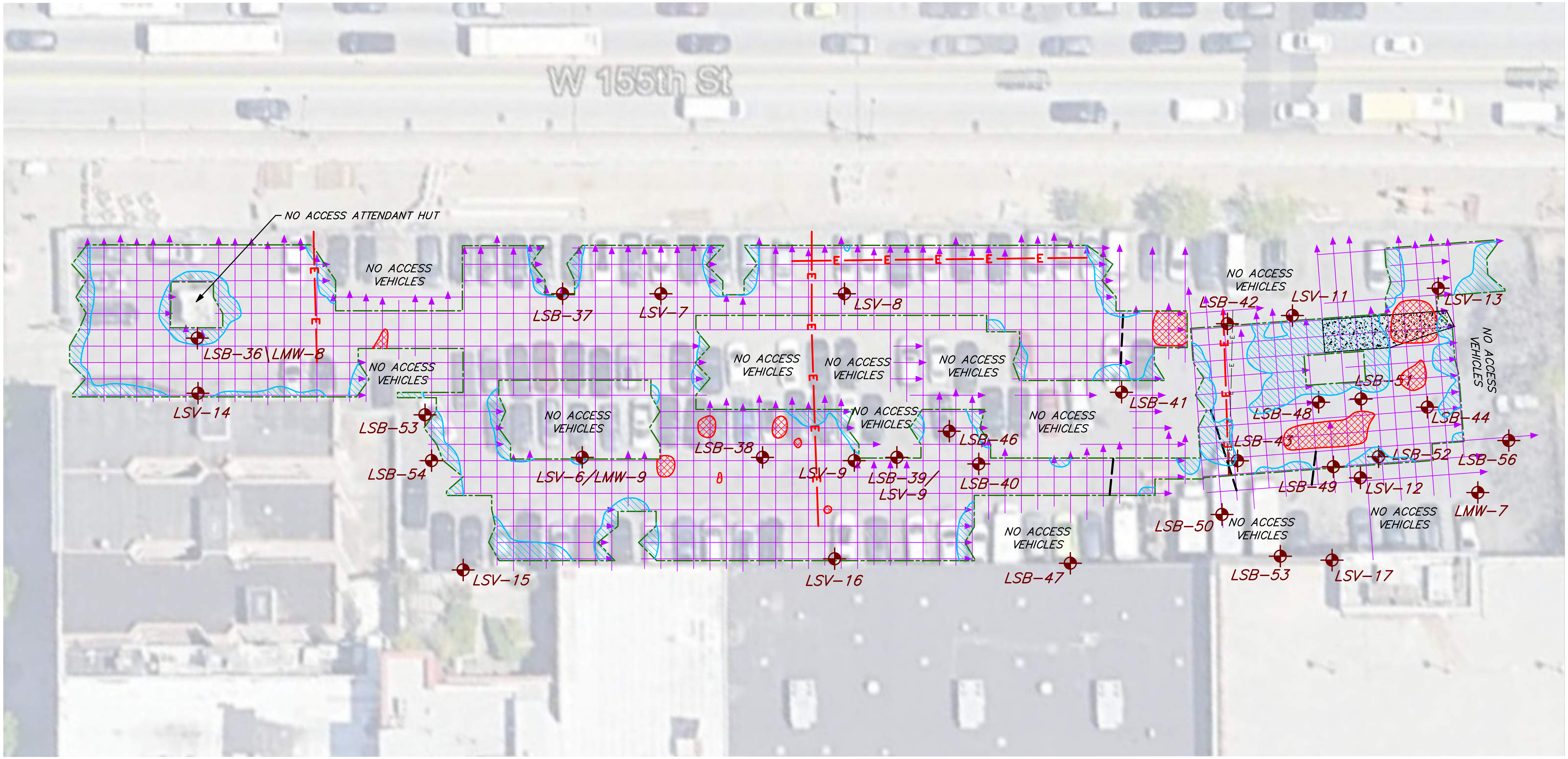
⌖ BORING

* DBA HR Geological Services in New York

Figure 2
EM Survey
280 W 155th Street
Manhattan, New York

File 19JCC101 | September, 2020

HAGER–RICHTER*
Salem, NH | Fords, NJ



LEGEND

SCALE (feet)
0 30 60

NOTE:

Modified from Google Earth Pro aerial photograph.

- — · — APPROXIMATE LIMITS OF EM SURVEY AREA
- → GPR TRAVERSE
- ▨ AREA OF POSSIBLE BURIED METAL
- —E— ELECTRIC LINE
- — — POSSIBLE UTILITY
- ▨ EM ANOMALY ATTRIBUTED TO EFFECTS OF SURFACE OBJECTS. THE PRESENCE OR ABSENCE OF BURIED METAL WITHIN THIS AREA CANNOT BE DETERMINED ON THE BASIS OF THE EM61 DATA ALONE.
- ⊕ BORING

N

H-R

* DBA HR Geological Services in New York

Figure 3
GPR Survey &
Integrated Interpretation
280 W 155th Street
Manhattan, New York

File 19JCC101 | September, 2020

HAGER-RICHTER*
Salem, NH | Fords, NJ

APPENDIX B

Boring and Well Logs

LANGAN

Log of Boring **LSB-36/LMW-8** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 16.19-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 9/1/20	Date Finished 9/1/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ∇ 10 / Completion ▼ 11 / 24 HR. ▼ --
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 9/1/2020.
▨		Light brown to dark brown fine-medium SAND, some brick, trace concrete, trace slag, trace f-c gravel (dry)[FILL]						0.0	
▨			1					0.0	Collected 060_LSB-36_1.0-3.0 from 1.0-3.0' bgs. VOCs from 1.5-2.0' bgs.
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	
▨								0.0	
▨			4					0.0	
▨								0.0	
▨		Light brown to dark brown fine-medium SAND, some brick, trace concrete, trace slag, trace f-c gravel (moist)[FILL]	5	M-2	Macrocore	42		0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨			8					0.0	
▨								0.0	
▨			9					0.0	
▨								0.0	
▨		Light brown to dark brown fine-medium SAND, some brick, trace concrete, trace slag, trace f-c gravel (wet)[FILL]	∇ 10	M-3	Macrocore	42		0.0	
▨								0.0	
▨		Grayish brown to gray silty fine-coarse SAND, trace brick, trace f-c gravel (wet)[FILL]	▼ 11					0.0	
▨								0.0	
▨			12					0.0	Collected 061_LSB-36_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
▨								0.0	
▨			13					0.0	
▨								0.0	
▨			14					0.0	
▨								0.0	
			15						Bottom of boring at 15.0' bgs. LMW-8 installed to 15.0' bgs and screened 5.0-15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-37** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 15.61-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	8/31/20
		Date Finished	8/31/20
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	15 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 9 Completion ▼ --- 24 HR. ▼ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	Nick Turro
Weight (lbs)	---		
Drop (in)	---		
Sampler	1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer	Molly Mattern
Sampler Hammer	---		
Weight (lbs)	---		
Drop (in)	---		

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.)
▦		Red BRICK (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/31/2020.
								0.0	
▨		Dark brown to reddish brown fine-medium SAND, trace brick, trace concrete, trace f-c gravel (dry)[FILL]	1					0.0	Collected 050_LSB-37_1.0-3.0 from 1.0-3.0' bgs. VOCs from 1.5-2.0' bgs.
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
⁘		CONCRETE (dry)[FILL]						0.0	
▨		Tannish brown fine-medium SAND, trace concrete, trace brick, trace silt (dry)[FILL]	5	M-2	Macrocore	36		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	
								0.0	
		Tannish brown fine-medium SAND, trace concrete, trace brick, trace silt (wet)[FILL]	▽ 9					0.0	
								0.0	
			10	M-3	Macrocore	48		0.0	
								0.0	
		Gray silty fine-coarse SAND, trace brick, trace gravel (wet)[FILL]	11					0.0	
								0.0	
			12					0.0	Collected 051_LSB-37_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.5-13.0' bgs.
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

\\LANGAN.COM\DATA\PAR\DATA1\100765102\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100765102_ENTERPRISE.GPJ ... 12/22/2020 5:22:04 PM ... Report: Log - LANGAN

LANGAN

Log of Boring **LSB-38** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 15.91-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 9/1/20	Date Finished 9/1/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ∇ 8 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer --- Weight (lbs) --- Drop (in) ---		Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- Weight (lbs) --- Drop (in) ---			

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	54		0.0	Started Drilling on 9/1/2020.
		Reddish brown fine-coarse SAND, some brick, trace concrete, trace f-c gravel (dry)[FILL]						0.0	
			1					0.0	
								0.0	
		Reddish brown fine-medium SAND, trace concrete, trace brick (dry)[FILL]	2					0.0	Collected 062_LSB-38_2.0-4.0 from 2.0-4.0' bgs. VOCs from 2.0-2.5' bgs.
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
		Reddish brown fine-medium SAND, trace concrete, trace brick, trace slag (moist)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
		Tannish gray fine-medium SAND, trace wood, trace concrete (wet)[FILL]	∇ 8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	M-3	Macrocore	42		0.0	
								0.0	
			11					0.0	
								0.0	
		Gray silty fine-medium SAND, trace wood, trace f-c gravel (wet)[FILL]	12					0.0	Collected 063_LSB-38_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-39** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 15.82-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 9/2/20
Date Finished: 9/2/20
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 15 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 8 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: ---
Weight (lbs): ---
Drop (in): ---
Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore
Field Engineer: Molly Mattern
Sampler Hammer: ---
Weight (lbs): ---
Drop (in): ---

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.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 9/2/2020.
▨		Brown to tannish brown fine-coarse SAND, some brick, some wood, trace concrete, trace f-c gravel (dry)[FILL]						0.0	
			1					0.0	Collected 065_LSB-39_1.0-3.0 and 067_DUP-2 from 1.0-3.0' bgs. VOCs from 1.5-2.0' bgs.
		Brown to tannish brown fine-coarse SAND, trace concrete, trace brick, trace slag, trace wood, trace f-c gravel (dry)[FILL]						0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
		Brown to tannish brown fine-coarse SAND, some f-c gravel, trace brick, trace concrete, trace wood, trace slag (moist)[FILL]	4					0.0	
								0.0	
		Brown to tannish brown fine-coarse SAND, some f-c gravel, trace brick, trace wood, trace slag (moist)[FILL]	5	M-2	Macrocore	42		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
		Brown to tannish brown fine-coarse SAND, some f-c gravel, trace brick, trace wood, trace slag (wet)[FILL]	▽ 8					0.0	
								0.0	
			9					0.0	
								0.0	
		Brownish gray silty fine-medium SAND, trace brick, trace f-c gravel (wet)[FILL]	10	M-3	Macrocore	48		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	Collected 066_LSB-39_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-40/LSV-10** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 15.4-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 8/31/20
Date Finished: 8/31/20
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 15 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 | Undisturbed --- | Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ∇ 7 | Completion ▼ --- | 24 HR. ▼ ---
Casing Hammer: --- | Weight (lbs): --- | Drop (in): ---
Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore
Sampler Hammer: --- | Weight (lbs): --- | Drop (in): ---
Field Engineer: Molly Mattern

Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	
	ASPHALT (dry)[FILL]	0					0.0	Started Drilling on 8/31/2020.
	WOOD and CONCRETE (dry)[FILL]						0.0	
	Tannish brown fine-medium SAND, trace slag, trace brick, trace concrete (dry)[FILL]	1					0.0	Collected 053_LSB-40_1.0-3.0 from 1.0-3.0' bgs. VOCs from 1.5-2.0' bgs.
							0.0	
		2	M-1	Macrocore	48		0.0	
							0.0	
		3					0.0	
							0.0	
		4					0.0	
							0.0	
		5					0.0	
							0.0	
		6					0.0	Collected 058_LSB-40_6.0-8.0 from 6.0-8.0' bgs. VOCs from 6.5-7.0' bgs.
							0.0	
	Reddish brown to grayish brown fine-medium SAND, trace brick, trace concrete (wet)[FILL]	∇ 7	M-2	Macrocore	42		0.0	
							0.0	
		8					0.0	
							0.0	
		9					0.0	
							0.0	
	Grayish brown silty fine-medium SAND, trace brick, trace f-c gravel (wet)[FILL]	10					0.0	
							0.0	
		11					0.0	
							0.0	
		12	M-3	Macrocore	36		0.0	Collected 054_LSB-40_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
		15						Bottom of boring at 15.0' bgs.
		16						
		17						
		18						
		19						
		20						

LANGAN

Log of Boring **LSB-41** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 15.15-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/31/20	Date Finished 8/31/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3 / Undisturbed --- / Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ∇ 7.5 / Completion ▼ --- / 24 HR. ▼ ---	
Casing Hammer --- / Weight (lbs) --- / Drop (in) ---		Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) --- / Drop (in) ---			

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.)
	ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/31/2020.
	CONCRETE, trace brick (dry)[FILL]						0.0	
		1					0.0	
							0.0	
		2					0.0	
							0.0	
		3					0.0	
							0.0	
	Brown to tannish brown fine-medium SAND, trace concrete, trace wood, trace brick (dry)[FILL]	4					0.0	Collected 047_LSB-41_4.0-6.0 from 4.0-6.0' bgs. VOCs from 4.0-4.5' bgs.
							0.0	
		5	M-2	Macrocore	54		0.0	
							0.0	
		6					0.0	
							0.3	
		7					0.2	
	∇ Reddish brown fine-medium SAND, trace brick (wet)[FILL]						3.5	Odor and globules of product from 7.5-9.0' bgs.
		8					3.4	Collected 057_LSB-41_7.5-9.5 from 7.5-9.5' bgs. VOCs from 8.0-8.5' bgs.
							16.6	
	Light gray to dark gray silty fine-medium SAND, trace brick, trace wood, trace concrete (wet)[FILL]	9					1.2	
							0.0	
		10	M-3	Macrocore	42		0.0	
							0.0	
		11					0.0	
							0.0	
		12					0.0	Collected 048_LSB-41_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
		15						Bottom of boring at 15.0' bgs.
		16						
		17						
		18						
		19						
		20						

LANGAN

Log of Boring **LSB-42** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	14.05-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	8/28/20
		Date Finished	8/28/20
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	15 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 8.5 Completion ▼ --- 24 HR. ▼ ---
Casing Depth (ft)	---	Drilling Foreman	Nick Turro
Casing Hammer	---	Weight (lbs)	---
Drop (in)	---	Field Engineer	Molly Mattern
Sampler	1.75 in x 5 ft Acetate Lined Macrocore		
Sampler Hammer	---	Weight (lbs)	---
Drop (in)	---		

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.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/28/2020.
▨		Dark gray to dark brown fine-medium SAND, some wood, some concrete, some f-c gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨		Dark brown fine-medium SAND, trace brick, trace concrete, trace fine gravel (dry)[FILL]						0.0	Collected 040_LSB-42_1.5-3.5 from 1.5-3.5' bgs. VOCs from 2.0-2.5' bgs.
▨			2					0.0	
▨								0.0	
▨			3					0.0	
▨								0.0	
▨			4					0.0	
▨								0.0	
▨			5	M-2	Macrocore	48		0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨		Dark gray silty fine-medium SAND, trace brick, trace concrete (dry)[FILL]						0.6	Collected 044_LSB-42_7.5-9.5 from 7.5-9.5' bgs. VOCs from 8.5-9' bgs.
▨			8					1.3	
▨		▽ Dark gray silty fine-medium SAND, trace brick, trace concrete (wet)[FILL]						14.6	
▨			9					13.8	Sheen on liner and soil from 8.5-9.5' bgs. Odor from 8.0-11.0' bgs
▨								6.9	
▨		Gray silty SAND, trace brick (wet)[FILL]	10	M-3	Macrocore	48		2.7	
▨								1.9	
▨			11					0.8	
▨								0.0	
▨			12					0.2	Collected 041_LSB-42_12.0-14.0 from 12.0-14.0' bgs. VOCs from 12.0-12.5' bgs.
▨								0.0	
▧		Gray CLAY, trace organics (moist)[NATIVE]	13					0.1	
▧								0.4	
▧			14					0.2	
▧								0.2	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-43** Sheet 1 of 1

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation and Datum Approx. 14.5-ft NAVD88
Drilling Company AARCO Environmental Services, Corp.	Date Started 8/28/20 — Date Finished 8/28/20
Drilling Equipment Geoprobe 7822 DT	Completion Depth 15 ft — Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push	Number of Samples — Disturbed 3 — Undisturbed --- — Core ---
Casing Diameter (in) --- — Casing Depth (ft) ---	Water Level (ft.) — First ▽ 10 — Completion ▼ --- — 24 HR. ▼ ---
Casing Hammer --- — Weight (lbs) --- — Drop (in) ---	Drilling Foreman Nick Turro
Sampler 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer Molly Mattern
Sampler Hammer --- — Weight (lbs) --- — Drop (in) ---	

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.)
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	42		0.0	Started Drilling on 8/28/2020.
		Tannish red to red GRAVEL, BRICK AND CONCRETE (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
		Tannish brown to brown fine-coarse SAND, trace concrete, trace f-c gravel (dry)[FILL]						0.0	Collected 037_LSB-43_2.5-4.5 from 2.5-4.5' bgs. VOCs from 3.0-3.5' bgs.
			3					0.0	
								0.0	
			4					0.0	
								0.0	
			5	M-2	Macrocore	42		0.0	
								0.0	
		Brown to reddish brown fine-medium SAND, trace concrete (moist)[FILL]	6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		▽ Grayish brown fine-medium SAND, trace concrete, trace brick (wet)[FILL]	10	M-3	Macrocore	42		0.0	
								0.0	
		Grayish brown silty fine-medium SAND, trace concrete, trace f-c gravel (wet)[FILL]	11					0.0	
								0.0	
			12					0.0	Collected 038_LSB-43_12.0-14.0 from 12.0-14.0' bgs. VOCs from 13.0-13.5' bgs
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-44** Sheet 1 of 1

Project: 280 West 155th Street	Project No.: 100765102
Location: New York, New York	Elevation and Datum: Approx. 12.78-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.	Date Started: 8/27/20 / Date Finished: 8/27/20
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft / Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push	Number of Samples: Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in): --- / Casing Depth (ft): ---	Water Level (ft.): First ∇ 7 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer: --- / Weight (lbs): --- / Drop (in): ---	Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer: Molly Mattern
Sampler Hammer: --- / Weight (lbs): --- / Drop (in): ---	

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.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/27/2020.
░		CONCRETE and BRICK (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
▩		Brown fine-coarse SAND, some f-c gravel, trace brick, trace wood (dry)[FILL]	3					0.0	Collected 030_LSB-44_3.0-5.0 from 3.0-5.0' bgs. VOCs from 3.5-4.0' bgs.
								0.0	
			4					0.0	
								0.0	
		Reddish brown fine-medium SAND, trace f-c gravel (dry)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
		Gray silty fine-medium SAND, trace brick, trace f-c gravel (dry)[FILL]	6					0.0	
								0.0	
		∇ Gray silty fine-medium SAND, trace brick, trace f-c gravel (wet)[FILL]	7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		Gray silty fine-medium SAND, trace brick, trace wood (wet)[FILL]	10	M-3	Macrocore	48		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	Collected 031_LSB-44_12.0-14.0 and 032_DUP-1 from 12.0-14.0' bgs. VOCs from 12.5-13.0' bgs.
								0.0	
			13					0.0	
								0.0	
▨		Gray CLAY, trace organics (moist)[NATIVE]	14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-45** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.0-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/31/20	Date Finished 8/31/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 8.5 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) --- Drop (in) ---	Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer ---	Weight (lbs) --- Drop (in) ---		

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.)
		ASPHALT (dry)[FILL] Tannish brown fine-coarse SAND, some f-c gravel, trace brick, trace slag (dry)[FILL]	0	M-1	Macrocore	42		0.0	Started Drilling on 8/31/2020.
								0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
		Reddish brown fine-medium SAND, trace brick, trace silt (dry)[FILL]						0.0	
			5	M-2	Macrocore	48		0.0	
								0.0	
		Dark gray to gray fine-medium SAND, trace brick, trace concrete (moist)[FILL]	6					0.0	
								0.0	
			7					0.0	
								0.0	Collected 056_LSB-45_7.5-9.5 from 7.5-9.5' bgs. VOCs from 8.0-8.5' bgs.
			8					0.0	
		▽ Gray to light gray fine-coarse SAND, some f-c gravel, trace concrete, trace silt (wet)[FILL]						0.0	
			9					0.0	
								0.0	
		Gray to light gray fine-coarse SAND, trace concrete, trace brick, trace silt, trace fine gravel (wet)[FILL]	10	M-3	Macrocore	48		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	
								0.0	
			13					0.0	
								0.0	
		Gray CLAY, trace organics (moist)[NATIVE]	14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-46** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.4-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/31/20	Date Finished 8/31/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 9 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	42		0.0	Started Drilling on 8/31/2020.
		Brown fine-medium SAND, some wood, trace concrete, trace brick (dry)[FILL]						0.2	
		Grayish brown to light brown fine-coarse SAND, trace slag, trace wood, trace brick (dry)[FILL]	1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
		Reddish brown fine-medium SAND, trace wood, trace slag, trace silt (dry)[FILL]	5	M-2	Macrocore	42		0.0	
								0.0	
			6					0.0	Collected 055_LSB-46_6.0-8.0 from 6.0-8.0' bgs. VOCs from 6.5-7.0' bgs.
								0.0	
			7					0.0	
		Grayish brown to gray silty fine-coarse SAND, trace brick, trace concrete (dry)[FILL]						0.0	
			8					0.0	
								0.0	
		Grayish brown to gray silty fine-coarse SAND, trace brick, trace concrete (wet)[FILL]	▽ 9					0.0	
								0.0	
		Grayish brown to gray silty fine-coarse SAND, trace brick, trace wood, trace f-c gravel (wet)[FILL]	10	M-3	Macrocore	36		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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LANGAN Log of Boring **LSB-47** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 17.5-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	8/31/20
		Date Finished	8/31/20
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	15 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 8 Completion ▼ --- 24 HR. ▼ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	Nick Turro
Weight (lbs)	---	Drop (in)	---
Sampler	1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer	Molly Mattern
Sampler Hammer	---	Weight (lbs)	---
Drop (in)	---		

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.)
	ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/31/2020.
	Reddish brown fine-medium SAND, some brick, some concrete, trace wood (dry)[FILL]						0.0	
		1					0.0	
							0.0	
		2					0.0	
							0.0	
		3					0.0	
							0.0	
	Dark brown to brown fine-coarse SAND, some slag, trace concrete, trace wood (moist)[FILL]	4					0.0	
							0.0	
		5	M-2	Macrocore	48		0.0	
							0.0	
		6					0.0	
							0.0	
		7					0.0	
							0.0	
	Grayish brown to light gray fine-coarse SAND, some f-c gravel, trace brick, trace concrete (wet)[FILL]	▽ 8					0.5	
							2.6	Sheen, globules, and odor from 8.5-10.0' bgs. Collected 049_LSB-47_8.5-10.5 from 8.5-10.5' bgs. VOCs from 9.0-9.5' bgs.
		9					4.5	
							3.9	
	Gray to grayish brown silty fine-medium SAND, some f-c gravel, trace concrete, trace brick (wet)[FILL]	10	M-3	Macrocore	48		0.9	
							0.0	
		11					0.0	
							0.0	
		12					0.0	
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
		15						Bottom of boring at 15.0' bgs.
		16						
		17						
		18						
		19						
		20						

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Log of Boring **LSB-48** Sheet 1 of 1

Project 280 West 155th Street			Project No. 100765102		
Location New York, New York			Elevation and Datum Approx. 13.54-ft NAVD88		
Drilling Company AARCO Environmental Services, Corp.			Date Started 8/28/20	Date Finished 8/28/20	
Drilling Equipment Geoprobe 7822 DT			Completion Depth 15 ft	Rock Depth ---	
Size and Type of Bit 2in Stainless Steel Direct Push			Number of Samples	Disturbed 3	Undisturbed ---
				Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---		Water Level (ft.)	First ▽ 9	Completion ▼ ---
				24 HR. ▼ ---	
Casing Hammer ---	Weight (lbs) ---	Drop (in) ---	Drilling Foreman Nick Turro		
Sampler 1.75 in x 5 ft Acetate Lined Macrocore			Field Engineer Molly Mattern		
Sampler Hammer ---	Weight (lbs) ---	Drop (in) ---			

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/28/2020.
▒		BRICK AND CONCRETE, trace f-c gravel (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
▩		Reddish brown fine-medium SAND, some brick, trace concrete (dry)[FILL]	5	M-2	Macrocore	42		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	Collected 039_LSB-48_8.0-10.0 from 8.0-10.0' bgs. VOCs from 9.0-9.5' bgs.
								0.0	
		Gray silty fine-medium SAND, trace brick, trace wood (wet)[FILL]	▽ 9					0.0	
								0.0	
			10	M-3	Macrocore	48		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	
								0.0	
			13					0.0	
								0.0	
▨		Gray CLAY, trace organics (moist)[NATIVE]	14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-49** Sheet 1 of 1

Project: 280 West 155th Street	Project No.: 100765102
Location: New York, New York	Elevation and Datum: Approx. 14.65-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.	Date Started: 8/27/20 Date Finished: 8/27/20
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push	Number of Samples: Disturbed 3; Undisturbed ---; Core ---
Casing Diameter (in): --- Casing Depth (ft): ---	Water Level (ft.): First ∇ 9.5; Completion ▼ ---; 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---	Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer: Molly Mattern
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---	

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.)
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/27/2020.
		Brown to tannish brown fine SAND, some concrete, some wood, trace brick (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
		Tannish brown fine-medium SAND, trace fine gravel (dry)[FILL]	4					0.0	
								0.0	
		Tannish brown fine-medium SAND, some concrete, trace fine gravel (dry)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
		Dark brown fine SAND, some f-c gravel (dry)[FILL]	6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	
								0.0	
			9 ∇					0.0	
		Dark brown fine SAND, some f-c gravel (wet)[FILL]						0.6	Collected 033_LSB-49_9.5-11.5 from 9.5-11.5' bgs. VOCs collected from 10.0-10.5' bgs.
			10	M-3	Macrocore	48		0.3	
								0.6	
			11					0.0	
		Dark brown silty fine SAND (wet)[FILL]						0.0	Small globules, slight sheen, and odors from 9.75-11.0' bgs.
			12					0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-50** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 16.6-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/28/20	Date Finished 8/28/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 10 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/28/2020.
		Tannish brown fine-coarse SAND, some concrete, some f-c gravel, trace brick (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
		Brown fine-medium SAND, some f-c gravel, trace concrete (dry)[FILL]	3					0.0	
								0.0	
			4					0.0	
								0.0	
		Tannish brown fine-coarse SAND, trace concrete, trace silt (dry)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
			6					0.0	
								0.0	
		Reddish brown fine-medium SAND, trace concrete, trace brick, trace silt (moist)[FILL]	7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		Dark gray fine-coarse SAND, some f-c gravel, trace wood (wet)[FILL]	▽ 10	M-3	Macrocore	42		0.8	Collected 042_LSB-50_1 9.5-11.5 from 9.5-11.5' bgs. VOCs collected from 10.0-10.5' bgs. Slight odor and slight sheen from 10.0-10.5' bgs.
								1.2	
			11					0.2	
								0.0	
		Light gray silty fine-medium SAND, trace wood, trace f-c gravel (wet)[FILL]	12					0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-52/LMW-6** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 14.65-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/27/20	Date Finished 8/27/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ∇ 9.5 / Completion ▼ 8.6 / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
		ASPHALT (dry)[FILL]	0					0.0	Started Drilling on 8/27/2020.
		Grayish brown coarse GRAVEL, some concrete, some wood, some brick, trace f-m sand (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
				M-1	Macrocore	48		0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
			5					0.0	
								0.0	
			6					0.0	
								0.0	
		Brown to light gray fine-medium SAND, trace brick, trace wood (dry)[FILL]	7					0.0	
				M-2	Macrocore	48		0.0	
			8					0.0	
		▼						0.0	
			9					0.0	
		∇ Brown to light gray fine-medium SAND, trace brick, trace wood (wet)[FILL]						0.0	Collected 035_LSB-52_9.5-11.5 from 9.5-11.5' bgs. VOCs collected from 10.0-10.5' bgs.
			10					0.0	
								0.0	
		Grayish brown silty fine-medium SAND, trace f-m gravel (wet)[FILL]	11					0.0	
								0.0	
			12					0.0	
				M-3	Macrocore	42		0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs. LMW-6 installed to 15.0' bgs and screened 5.0-15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-53** Sheet 1 of 1

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation and Datum Approx. 16.49-ft NAVD88
Drilling Company AARCO Environmental Services, Corp.	Date Started: 8/28/20 / Date Finished: 8/28/20
Drilling Equipment Geoprobe 7822 DT	Completion Depth: 15 ft / Rock Depth: ---
Size and Type of Bit 2in Stainless Steel Direct Push	Number of Samples: Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in): --- / Casing Depth (ft): ---	Water Level (ft.): First ∇ 9.5 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) --- / Drop (in) ---	Drilling Foreman Nick Turro
Sampler 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer Molly Mattern
Sampler Hammer --- / Weight (lbs) --- / Drop (in) ---	

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.)
		ASPHALT (dry) [FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/28/2020.
		Tannish brown fine-coarse SAND, some concrete, some wood, trace brick, trace silt (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
		Reddish brown to brown fine-medium SAND, trace brick, trace concrete (dry)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
			6					0.0	
								0.0	
		Reddish brown to brown fine-medium SAND, trace brick, trace concrete (moist)[FILL]	7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.2	
		Brown to dark brown fine-coarse SAND, some f-c gravel, trace brick (wet)[FILL]	∇					3.6	Sheen, some product, and odor from 9.5-10.5' bgs. Collected 043_LSB-53_9.5-11.5 from 9.5-11.5' bgs. VOCs from 10.0-10.5' bgs.
			10	M-3	Macrocore	42		1.2	
								2.4	
			11					1.0	
								0.0	
		Gray silty fine-medium SAND, trace brick, trace concrete (wet)[FILL]	12					0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-54/LSV-17** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 16.4-ft NAVD88	
Drilling Company: AARCO Environmental Services, Corp.		Date Started: 8/28/20	Date Finished: 8/28/20
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 15 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 8.5	Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: ---	Weight (lbs): --- Drop (in): ---	Drilling Foreman: Nick Turro	
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer: Molly Mattern	
Sampler Hammer: ---	Weight (lbs): --- Drop (in): ---		

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.)
	ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 8/28/2020.
	BRICK and CONCRETE, trace wood (dry)[FILL]						0.0	
		1					0.0	
							0.0	
		2					0.0	
							0.0	
		3					0.0	
							0.0	
		4					0.0	
							0.0	
	BRICK and CONCRETE, trace wood, trace f-c sand (dry)[FILL]	5	M-2	Macrocore	42		0.0	
							0.0	
		6					0.0	
	Reddish brown to gray fine-medium SAND, trace brick, trace silt, trace fine gravel (dry)[FILL]						0.0	
		7					0.0	
							0.0	
		8					0.0	
	▽ Reddish brown to gray fine-medium SAND, trace brick, trace silt, trace fine gravel (wet)[FILL]						0.0	
		9					0.0	
							0.0	Collected 045_LSB-54_9.5-11.5 from 9.5-11.5' bgs. VOCs collected from 10.0-10.5' bgs.
	Light gray to grayish brown silty fine-medium SAND, trace wood, trace f-c gravel (wet)[FILL]	10	M-3	Macrocore	48		0.0	
							0.0	
		11					0.0	
							0.0	
		12					0.0	
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
		15						Bottom of boring 15.0' bgs.
		16						
		17						
		18						
		19						
		20						

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Log of Boring **LSB-55** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 12.0-ft NAVD88	
Drilling Company: AARCO Environmental Services, Corp.		Date Started: 9/2/20	Date Finished: 9/2/20
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ∇ 5	Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: ---	Weight (lbs): --- Drop (in): ---	Drilling Foreman: Nick Turro	
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer: Molly Mattern	
Sampler Hammer: ---	Weight (lbs): --- Drop (in): ---		

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.)
■ ▨		ASPHALT (dry)[FILL] Dark brown to brown fine-coarse SAND, some f-c gravel, trace brick, trace concrete, trace wood (dry)[FILL]	0					0.0 0.0	Started Drilling on 9/2/2020. Collected 069_WC-9 from LSB-55 and LSB-56 from 0.0-12.0' bgs. VOCs from 2.0-2.5' bgs from LSB-55.
			1					0.0 0.0	
			2	M-1	Macrocore	48		0.0 0.0	
			3					0.0 0.0	
			4					0.0 0.0	
		∇ Dark brown to brown fine-coarse SAND, some f-c gravel, trace brick, trace concrete, trace wood (wet)[FILL]	5					0.0 0.0	
		Grayish brown fine-medium SAND, trace brick, trace wood, trace f-c gravel (wet)[FILL]	6					0.0 0.0	
			7	M-2	Macrocore	48		0.0 0.0	
			8					0.0 0.0	
			9					0.0 0.0	
		Grayish brown silty fine-medium SAND, trace brick, trace wood, trace f-c gravel (wet)[FILL]	10					0.0 0.0	
			11	M-3	Macrocore	24		0.0 0.0	
			12						Bottom of boring at 12.0' bgs.
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-56** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 13.0-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 9/2/20	Date Finished 9/2/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3 / Undisturbed --- / Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 7 / Completion ▼ --- / 24 HR. ▼ ---	
Casing Hammer --- / Weight (lbs) --- / Drop (in) ---		Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer --- / Weight (lbs) --- / Drop (in) ---			

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.)
		ASPHALT (dry)[FILL]	0	M-1	Macrocore	48		0.0	Started Drilling on 9/2/2020. Collected 069_WC-9 from LSB-55 and LSB-56 from 0.0-12.0' bgs. VOCs from 2.0-2.5' bgs from LSB-55.
		Grayish red fine-coarse SAND, some brick, some concrete (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
		Reddish brown fine-coarse SAND, trace brick, trace wood, trace slag (dry)[FILL]	3					0.0	
								0.0	
			4					0.0	
								0.0	
		Reddish brown fine-coarse SAND, trace brick, trace wood, trace slag (moist)[FILL]	5	M-2	Macrocore	48		0.0	
								0.0	
			6					0.0	
								0.0	
		▽ Grayish brown to gray fine-medium SAND, some f-c gravel, trace brick (wet)[FILL]	7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		Grayish brown to gray silty fine-medium SAND, trace brick, trace fine gravel (wet)[FILL]	10	M-3	Macrocore	24		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 12.0' bgs.
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-57** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 16.44-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 9/2/20
Date Finished: 9/2/20
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 12 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 10 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---
Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore
Field Engineer: Molly Mattern
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---

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.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	36		0.0	Started Drilling on 9/2/2020. Collected 070_WC-10 from LSB-57 and LSB-58 from 0.0-12.0' bgs. VOCs from LSB-57 from 4.0-4.5' bgs.
▨		Brown fine-coarse SAND, some brick, trace concrete, trace wood (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
		Brown fine-coarse SAND, some brick, trace concrete, trace wood (moist)[FILL]	4					0.0	
								0.0	
			5	M-2	Macrocore	36		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		▽ Grayish brown fine-medium SAND, trace brick, trace silt, trace f-c gravel (wet)[FILL]	10	M-3	Macrocore	18		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 12.0' bgs.
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-58** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 16.22-ft NAVD88	
Drilling Company: AARCO Environmental Services, Corp.		Date Started: 9/2/20	Date Finished: 9/2/20
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ∇ 7	Completion ▼ --- 24 HR. ∇ ---
Casing Hammer: ---	Weight (lbs): --- Drop (in): ---	Drilling Foreman: Nick Turro	
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer: Molly Mattern	
Sampler Hammer: ---	Weight (lbs): --- Drop (in): ---		

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.)
■		ASPHALT (dry)[FILL]	0					0.0	Started Drilling on 9/2/2020. Collected 070_WC-10 from LSB-57 and LSB-58 from 0.0-12.0' bgs. VOCs from LSB-57 from 4.0-4.5' bgs.
▨		Brown fine-medium SAND, trace brick, trace concrete, trace f-c gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨				M-1	Macrocore	48		0.0	
▨			3					0.0	
▨								0.0	
▨		Brown fine-medium SAND, some brick, trace concrete, trace f-c gravel (moist)[FILL]	4					0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨		Grayish brown fine-medium SAND, some f-c gravel, trace brick, trace concrete (wet)[FILL]	∇ 7					0.0	
▨				M-2	Macrocore	42		0.0	
▨			8					0.0	
▨								0.0	
▨			9					0.0	
▨								0.0	
▨		Gray silty fine-medium SAND, trace brick, trace f-c gravel (wet)[FILL]	10					0.0	
▨								0.0	
▨			11	M-3	Macrocore	18		0.0	
▨								0.0	
			12						Bottom of boring at 12.0' bgs.
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LMW-7** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 14.63-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 8/27/20	Date Finished 8/27/20
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3; Undisturbed ---; Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ∇ 6.5; Completion ▼ 8.3; 24 HR. ▼ ---	
Casing Hammer ---; Weight (lbs) ---; Drop (in) ---		Drilling Foreman Nick Turro	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Molly Mattern	
Sampler Hammer ---; Weight (lbs) ---; Drop (in) ---			

Sample Description:

- ASPHALT (dry)[FILL]
- Tannish brown fine-medium SAND, some concrete, some brick (dry)[FILL]
- Tannish brown fine-medium SAND, some brick, some f-c gravel (dry)[FILL]
- CONCRETE (dry)[FILL]
- Tannish brown fine SAND (moist) [FILL]
- ∇ Brown fine-medium SAND, trace fine gravel (moist)[FILL]
- Brown fine-medium SAND, trace fine gravel (wet)[FILL]
- Brownish gray to dark fine-coarse SAND, some fine gravel, trace wood, trace silt (wet)[FILL] ▼

Sample Data:

Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in
0–5	M-1	Macrocore	48	
5–10	M-2	Macrocore	42	
10–15	M-3	Macrocore	48	

PID Reading (ppm): 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, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.3, 3.0, 1.4

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

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

- Started Drilling on 8/27/2020.
- Slight odor at 13.0' bgs.
- Bottom of boring at 15.0' bgs.
  LMW-7 installed to 13.0' bgs and screened 3.0-13.0' bgs.

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Log of Boring **LMW-9/LSV-6** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: 16.56-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 9/1/20
Date Finished: 9/1/20
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 15 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 7.5 Completion ▼ 9.9 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---
Drilling Foreman: Nick Turro
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore
Field Engineer: Molly Mattern
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data Number	Sample Data Type	Sample Data Recov. (in)	Sample Data Penetr. resist BL/6in	Sample Data PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
■		ASPHALT (dry)[FILL]	0	M-1	Macrocore	42		0.0	Started Drilling on 9/1/2020.
▨		Tannish gray fine-coarse SAND, trace concrete, trace brick (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	LSV-6 installed to 3.5' bgs.
			4					0.0	
		Light gray to gray fine-medium SAND, trace concrete, trace silt, trace f-c gravel (moist)[FILL]						0.0	
			5	M-2	Macrocore	42		0.0	
		Reddish brown to tannish brown fine-medium SAND, trace slag, trace brick, trace f-c gravel (moist)[FILL]						0.0	
			6					0.0	
								0.0	
			7					0.0	
		Reddish brown to tannish brown fine-medium SAND, trace slag, trace brick, trace f-c gravel (wet)[FILL]	▽					0.0	
			8					0.0	
								0.0	
			9					0.0	
			▼					0.0	
		Tannish gray silty fine-medium SAND, trace brick, trace f-c gravel (wet)[FILL]	10	M-3	Macrocore	42		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
			15						Bottom of boring at 15.0' bgs. LMW-9 installed to 13.0' bgs and screened 3.0-13.0' bgs.
			16						
			17						
			18						
			19						
			20						

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WELL CONSTRUCTION SUMMARY

Well No. LMW-6

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 14.65 ft NAVD88
Drilling Agency AARCO Environmental Services, Corp.	Date Started 8/27/2020 Date Finished 8/27/2020
Drilling Equipment Geoprobe 7822 DT	Driller Nick Turro
Size And Type of Bit 3.75-inch Direct Push	Inspector Molly Mattern

Method of Installation

Soil boring drilled to 15' bgs. Direct push of a 3.75" stainless steel macrocore to a depth of 15' bgs. 10-feet of Schedule-40, 0.020-inch slotted 2-inch diameter PVC screen was installed from 5-15' bgs. No. 2 Sand was backfilled to approximately 2-feet above the top of screen. A 2-foot bentonite seal was installed above the sand, and the remainder of the borehole was backfilled with bentonite. Manhole installed and secured with concrete.

Method of Well Development

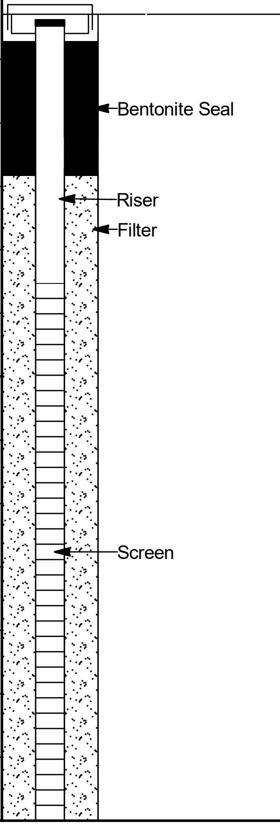
LMW-6 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing --	Diameter --	Type of Backfill Material Non-Impacted Drill Cuttings
Type of Screen Schedule-40 PVC	Diameter 2-inch	Type of Seal Material Bentonite
Borehole Diameter 3.75-inch		Type of Filter Material No. 2 Sand

	Elevation	Depth
Top of Casing	14.40'	0.25' bgs
Top of Seal	14.15'	0.5' bgs
Top of Filter	11.65'	3' bgs
Top of Screen	9.65'	5' bgs
Bottom of Filter	-0.35'	15' bgs
Bottom of Well	-0.35'	15' bgs
Screen Length	10.0'	
Slot Size		0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
5.76'	8.64'	9/2/2020
5.67'	8.73'	9/10/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25
		3
		5
		15

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-7

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 14.63 ft NAVD88
Drilling Agency AARCO Environmental Services, Corp.	Date Started 8/27/2020 Date Finished 8/27/2020
Drilling Equipment Geoprobe 7822 DT	Driller Nick Turro
Size And Type of Bit 3.75-inch Direct Push	Inspector Molly Mattern

Method of Installation

Soil boring drilled to 15' bgs. Bottom of drilled soil boring backfilled with non-impacted drill cuttings. Direct push of a 3.75" stainless steel macrocore to a depth of 13' bgs. 10-feet of Schedule-40, 0.020-inch slotted 2-inch diameter PVC screen was installed from 3-13' bgs. No. 2 Sand was backfilled to approximately 2-feet above the top of screen. A 0.5-foot bentonite seal was installed above the sand. Manhole installed and secured with concrete.

Method of Well Development

LMW-7 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

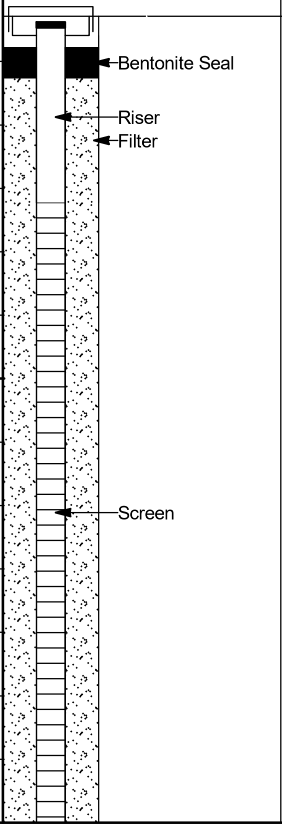
Type of Casing --	Diameter --	Type of Backfill Material Non-Impacted Drill Cuttings
Type of Screen Schedule-40 PVC	Diameter 2-inch	Type of Seal Material Bentonite
Borehole Diameter 3.75-inch		Type of Filter Material No. 2 Sand

	Elevation	Depth
Top of Casing	14.38'	0.25' bgs
Top of Seal	14.13'	0.5' bgs
Top of Filter	13.63'	1' bgs
Top of Screen	11.63'	3' bgs
Bottom of Filter	1.63'	13' bgs
Bottom of Well	1.63'	13' bgs
Screen Length	10.0'	Slot Size 0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
6.07'	8.31'	9/2/2020
5.95'	8.43'	9/10/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25
		1
		3
		13



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WELL CONSTRUCTION SUMMARY

Well No. LMW-8

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 16.19 ft NAVD88
Drilling Agency AARCO Environmental Services, Corp.	Date Started 9/1/2020 Date Finished 9/1/2020
Drilling Equipment Geoprobe 7822 DT	Driller Nick Turro
Size And Type of Bit 3.75-inch Direct Push	Inspector Molly Mattern

Method of Installation

Soil boring drilled to 15' bgs. Direct push of a 3.75" stainless steel macrocore to a depth of 15' bgs. 10-feet of Schedule-40, 0.020-inch slotted 2-inch diameter PVC screen was installed from 5-15' bgs. No. 2 Sand was backfilled to approximately 2-feet above the top of screen. A 2-foot bentonite seal was installed above the sand, and the remainder of the borehole was backfilled with bentonite. Manhole installed and secured with concrete.

Method of Well Development

LMW-8 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

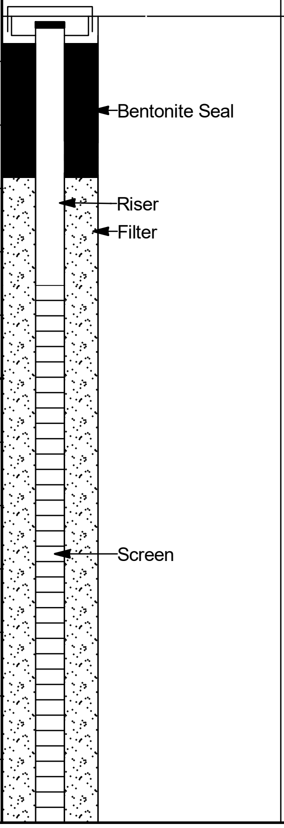
Type of Casing --	Diameter --	Type of Backfill Material Non-Impacted Drill Cuttings
Type of Screen Schedule-40 PVC	Diameter 2-inch	Type of Seal Material Bentonite
Borehole Diameter 3.75-inch		Type of Filter Material No. 2 Sand

	Elevation	Depth
Top of Casing	15.94'	0.25' bgs
Top of Seal	15.69'	0.5' bgs
Top of Filter	13.19'	3' bgs
Top of Screen	11.19'	5' bgs
Bottom of Filter	1.19'	15' bgs
Bottom of Well	1.19'	15' bgs
Screen Length	10.0'	Slot Size 0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
4.96'	10.98'	9/2/2020
5.10'	10.84'	9/10/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25
		3
		5
		15



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WELL CONSTRUCTION SUMMARY

Well No. LMW-9

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 16.56 ft NAVD88
Drilling Agency AARCO Environmental Services, Corp.	Date Started 9/1/2020 Date Finished 9/1/2020
Drilling Equipment Geoprobe 7822 DT	Driller Nick Turro
Size And Type of Bit 3.75-inch Direct Push	Inspector Molly Mattern

Method of Installation

Soil boring drilled to 15' bgs. Bottom of drilled soil boring backfilled with non-impacted drill cuttings. Direct push of a 3.75" stainless steel macrocore to a depth of 13' bgs. 10-feet of Schedule-40, 0.020-inch slotted 2-inch diameter PVC screen was installed from 3-13' bgs. No. 2 Sand was backfilled to approximately 2-feet above the top of screen. A 0.5-foot bentonite seal was installed above the sand. Manhole installed and secured with concrete.

Method of Well Development

LMW-9 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing --	Diameter --	Type of Backfill Material Non-Impacted Drill Cuttings
Type of Screen Schedule-40 PVC	Diameter 2-inch	Type of Seal Material Bentonite
Borehole Diameter 3.75-inch		Type of Filter Material No. 2 Sand

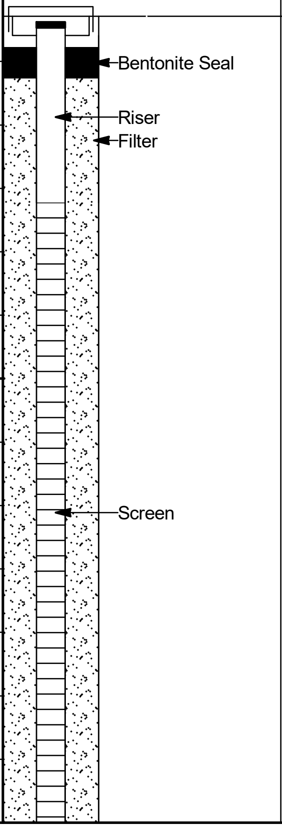
	Elevation	Depth
Top of Casing	16.31'	0.25' bgs
Top of Seal	16.06'	0.5' bgs
Top of Filter	15.56'	1' bgs
Top of Screen	13.56'	3' bgs
Bottom of Filter	3.56'	13' bgs
Bottom of Well	3.56'	13' bgs

Screen Length	Slot Size
10.0'	0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
6.38'	9.93'	9/2/2020
6.40'	9.91'	9/10/2020

Well Details



Soil / Rock Classification	Depth (ft)
Fill	0.25
	1
	3
	13

\\LANGAN.COM\DATA\PAR\DATA1\100765102\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100765102_ENTERPRISE.GPJ ... 1/13/2021 1:08:24 PM ... Report: Log - LANGAN_WELL_CONSTRUCTION_SUMMARY

APPENDIX C

Groundwater Sampling Field Logs

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-1	**Date:**	9/10/2020
Job Number:	100765102	**Weather:**	78, rain	**Sampler(s):**	MG		
Initial DTW (ft):	8.21	**Well Depth (ft):**	12	**Pump Depth (ft):**	10		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	2-12		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
7:45	---	---	---	---	---	---	8.21	200	---	---	Begin Purging
7:50	24.18	6.21	48.0	0.845	1.3	1.14	8.21	200	Clear	None	
7:55	23.95	6.65	-101.0	0.824	1.4	0.00	8.21	200	Clear	None	
8:00	23.72	6.66	-111.0	0.834	4.1	0.00	8.21	200	Clear	None	
8:05	23.56	6.67	-114.0	0.844	3.5	0.00	8.21	200	Clear	None	
8:10	23.45	6.68	-117.0	0.855	2.9	0.00	8.21	200	Clear	None	
8:15	23.39	6.70	-120.0	0.863	3.5	0.00	8.21	200	Clear	None	
8:20	23.37	6.71	-121.0	0.864	3.3	0.00	8.21	200	Clear	None	
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	073_LMW-1	Sample Time:	8:25	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	074_DUP-1	QA/QC Sample Time:	8:30	QA/QC Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-2	**Date:**	9/10/2020
Job Number:	100765102	**Weather:**	78, rain	**Sampler(s):**	MG		
Initial DTW (ft):	--	**Well Depth (ft):**	--	**Pump Depth (ft):**	--		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	--		
Water Quality Meter:	--	**Water Quality Meter ID:**	--	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
LMW-2 was not sampled due to product in well.											
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	--	Sample Time:	--	Sample Analyses:	--
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-3	**Date:**	9/11/2020
Job Number:	100765102	**Weather:**	78, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	9.25	**Well Depth (ft):**	15	**Pump Depth (ft):**	12		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	1		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
14:15	---	---	---	---	---	---	9.25	200	---	---	Begin Purging
14:20	25.49	6.97	-60.0	1.170	57.5	0.00	9.25	200	Light brown	None	
14:25	24.08	6.91	-81.0	1.140	57.9	0.00	9.25	200	Light brown	None	
14:30	23.08	6.83	-78.0	1.020	59.8	0.00	9.25	200	Light brown	None	
14:35	22.96	6.80	-76.0	0.989	61.8	0.00	9.25	200	Light brown	None	
14:40	22.71	6.79	-73.0	0.955	31.4	0.00	9.25	200	Clear	None	
14:45	22.64	6.79	-74.0	0.948	23.6	0.00	9.25	200	Clear	None	
14:50	22.61	6.79	-74.0	0.943	14.8	0.00	9.25	200	Clear	None	
14:55	22.64	6.79	-75	0.937	9.8	0.00	9.25	200	Clear	None	
15:00	22.68	6.79	-75	0.934	9.7	0.00	9.25	200	Clear	None	
15:05	22.66	6.80	-76	0.930	9.5	0.00	9.25	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

DTB = 14.10'

Sample Number:	083_LMW-3	Sample Time:	15:10	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-4	**Date:**	9/11/2020
Job Number:	100765102	**Weather:**	78, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	9.96	**Well Depth (ft):**	15	**Pump Depth (ft):**	13		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	1		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
11:25	---	---	---	---	---	---	9.96	200	---	---	Begin Purging
11:30	28.16	7.07	-37.0	2.600	56.0	0.96	12.26	100	Clear	None	
11:35	27.90	7.10	-84.0	2.590	52.1	1.02	12.45	100	Clear	None	
11:40	27.96	7.08	-87.0	2.490	53.4	1.21	12.56	100	Clear	None	
11:45	27.72	7.08	-102.0	2.510	54.9	1.26	12.58	100	Clear	None	
11:50	27.96	7.05	-108.0	2.490	55.3	1.22	12.62	100	Clear	None	
11:55	27.93	7.05	-111.0	2.480	55.4	1.20	12.65	100	Clear	None	
12:00	27.90	7.05	-113.0	2.470	57.4	1.19	12.68	100	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	081_LMW-4	Sample Time:	12:05	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-5	**Date:**	9/10/2020
Job Number:	100765102	**Weather:**	78, rain	**Sampler(s):**	MG		
Initial DTW (ft):	--	**Well Depth (ft):**	--	**Pump Depth (ft):**	--		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	--		
Water Quality Meter:	--	**Water Quality Meter ID:**	--	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
LMW-5 was not sampled due to product in well.											
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	--	Sample Time:	--	Sample Analyses:	--
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th St.	**Site Location:**	Manhattan, NY	**Well No:**	LMW-6	**Date:**	9/10/2020
Job Number:	100765102	**Weather:**	78, Rain	**Sampler(s):**	MG		
Initial DTW (ft):	8.73	**Well Depth (ft):**	15	**Pump Depth (ft):**	12		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
9:35	---	---	---	---	---	---	8.73	200	---	---	Begin Purging
9:40	22.14	6.83	-120.0	1.120	6.3	2.28	8.80	200	Clear	None	
9:45	21.97	6.84	-127.0	1.120	5.3	0.00	8.80	200	Clear	None	
9:50	22.08	6.83	-124.0	1.060	4.8	0.00	8.80	200	Clear	None	
9:55	22.04	6.82	-121.0	1.020	7.7	0.00	8.80	200	Clear	None	
10:00	22.07	6.81	-121.0	1.000	7.9	0.00	8.80	200	Clear	None	
10:05	22.05	6.82	-124.0	0.983	7.3	0.00	8.80	200	Clear	None	
10:10	22.09	6.84	-128.0	0.965	7.4	0.00	8.80	200	Clear	None	
10:15	22.10	6.84	-130	0.96	7.8	0.00	8.80	200	Clear	None	
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:
DTB = 14.80'

Sample Number:	075_LMW-6	Sample Time:	10:20	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-7	**Date:**	9/10/2020
Job Number:	100765102	**Weather:**	78, Rain	**Sampler(s):**	Mg		
Initial DTW (ft):	8.43	**Well Depth (ft):**	13	**Pump Depth (ft):**	11		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	3-13		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
11:05	—	—	—	—	—	—	8.43	200	—	—	Begin Purging
11:10	26.72	6.87	-102.0	1.230	0.8	0.51	8.48	200	Clear	None	
11:15	25.87	6.97	-127.0	1.230	0.0	0.00	8.48	200	Clear	None	
11:20	25.63	7.00	-132.0	1.220	4.0	0.00	8.48	200	Clear	None	
11:25	25.32	7.05	-135.0	1.170	3.7	0.00	8.48	200	Clear	None	
11:30	25.16	7.06	-133.0	1.060	4.6	0.00	8.48	200	Clear	None	
11:35	24.94	7.04	-128.0	0.954	4.7	0.00	8.48	200	Clear	None	
11:40	24.75	7.01	-124.0	0.832	4.6	0.00	8.48	200	Clear	None	
11:45	24.65	6.99	-121	0.817	4.6	0.00	8.48	200	Clear	None	
11:50	24.59	6.97	-119	0.808	4.5	0.00	8.48	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

DTB = 12.85'

Sample Number:	076_LMW-7	Sample Time:	11:55	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-8	**Date:**	9/11/2020
Job Number:	100765102	**Weather:**	78, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	10.84	**Well Depth (ft):**	15	**Pump Depth (ft):**	13		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
13:00	---	---	---	---	---	---	10.84	200	---	---	Begin Purging
13:05	25.76	7.01	72.0	2.700	53.1	0.00	11.25	150	Light Brown	None	
13:10	25.21	6.97	69.0	2.730	54.8	0.00	11.45	150	Light Brown	None	
13:15	24.94	6.97	66.0	2.740	52.5	0.00	11.63	150	Light Brown	None	
13:20	24.74	6.97	64.0	2.760	50.0	0.00	11.79	150	Light Brown	None	
13:25	24.51	6.97	60.0	2.770	44.5	0.00	11.93	150	Clear	None	
13:30	24.52	6.96	58.0	2.770	43.2	0.00	12.05	150	Clear	None	
13:35	24.52	6.96	55.0	2.770	41.8	0.00	12.20	150	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:
DTB = 14.76'

Sample Number:	082_LMW-8	Sample Time:	13:40	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-9	**Date:**	9/11/2020
Job Number:	100765102	**Weather:**	78, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	9.91	**Well Depth (ft):**	13	**Pump Depth (ft):**	11		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	3-13		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	Y1X5NA2A	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
9:25	---	---	---	---	---	---	9.91	200	---	---	Begin Purging
9:30	21.77	6.92	26.0	0.768	0.0	0.13	9.91	200	Clear	None	
9:35	21.47	6.91	-46.0	0.768	0.0	0.00	9.91	200	Clear	None	
9:40	21.04	6.91	-52.0	0.766	0.0	0.00	9.91	200	Clear	None	
9:45	20.81	6.89	-56.0	0.765	0.0	0.00	9.91	200	Clear	None	
9:50	20.66	6.89	-58.0	0.767	0.0	0.00	9.91	200	Clear	None	
9:55	20.68	6.89	-59.0	0.766	0.0	0.00	9.91	200	Clear	None	
10:00	20.66	6.89	-60.0	0.766	0.0	0.00	9.91	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:
Collected MS/MSD.
DTB = 13.10

Sample Number:	080_LMW-9	Sample Time:	10:05	Sample Analyses:	VOCs, SVOCs, Total and Dissolved TAL Metals, Hexavalent Chromium, Pesticides, PCBs, Herbicides, PFAs, 1,4-Dioxane
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-1	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40F's, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	7.35	**Well Depth (ft):**	12	**Pump Depth (ft):**	10		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	2-12		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	XX17BXDT	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
13:55	---	---	---	---	---	---	7.35	200	---	---	Begin Purging
14:00	12.73	7.35	-139.0	0.645	43.6	0.60	7.38	200	Clear	None	
14:05	12.82	7.30	-151.0	0.643	39.0	0.30	7.38	200	Clear	None	
14:10	12.79	7.28	-156.0	0.641	37.9	0.11	7.38	200	Clear	None	
14:15	12.66	7.26	-166.0	0.645	27.1	0.00	7.38	200	Clear	None	
14:20	12.66	7.27	-169.0	0.649	21.5	0.00	7.38	200	Clear	None	
14:25	12.71	7.26	-173.0	0.652	8.3	0.00	7.38	200	Clear	None	
14:30	12.71	7.26	-176.0	0.655	8.9	0.00	7.38	200	Clear	None	
14:35	12.68	7.27	-178.0	0.66	8.5	0.00	7.38	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	127_LMW-1 128_LMW-1 (Dissolved) 129_LMW-1 (SW/EcoRisk)	Sample Time:	14:40 14:45 14:50	Sample Analyses:	Total PAHs Dissolved PAHs Dissolved PAHs - EcoRisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-2	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	--	**Well Depth (ft):**	--	**Pump Depth (ft):**	--		
Background PID (ppm):	0.0	**Well PID (ppm):**	9.8	**Screen Interval (ft):**	--		
Water Quality Meter:	--	**Water Quality Meter ID:**	--	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
LMW-2 was not sampled due to product in well.											
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	--	Sample Time:	--	Sample Analyses:	--
QA/QC Sample Number:		QA/QC Sample Time:		QA/QC Sample Analyses:	

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 W 155th	**Site Location:**	Manhattan, New York	**Well No:**	LMW-3	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	SH		
Initial DTW (ft):	8.95	**Well Depth (ft):**	14	**Pump Depth (ft):**	12		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U5000	**Water Quality Meter ID:**	G3D500YB	**Well Diameter (in):**	1"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
10:45	14.41	7.51	47	1.06	156.0	1.22	9.00	200	---	---	Begin Purging
10:50	14.42	7.18	-79	1.05	90.5	0.00	9.00	200	Clear	None	
10:55	14.57	7.11	-83	1.04	37.2	0.00	9.00	200	Clear	None	
11:00	14.66	7.08	-85	1.04	16.3	0.00	9.00	200	Clear	None	
11:05	14.61	7.07	-84	1.04	23.4	0.00	9.00	200	Clear	None	
11:10	14.74	7.09	-88	1.04	6.7	0.00	9.00	200	Clear	None	
11:15	14.73	7.10	-89	1.03	6.1	0.00	9.00	200	Clear	None	
11:20	14.79	7.08	-88	1.03	0.9	0.00	9.00	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

*MS/MSD extra volme collected

Sample Number:	118_LMW-3 119_LMW-3(Dissolved) 120_LMW-3(SW/Ecorisk)	Sample Time:	9:30 9:40 9:50	Sample Analyses:	Total PAHs Dissolved PAHs Dissolved PAHs - EcoRisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-4	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	9.50	**Well Depth (ft):**	15	**Pump Depth (ft):**	13		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.1	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	XX17BXDT	**Well Diameter (in):**	1		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
8:10	---	---	---	---	---	---	9.50	100	---	---	Begin Purging
8:15	8.25	7.21	258.0	6.420	107.0	5.76	10.98	100	Clear	None	
8:20	9.45	7.50	26.0	6.140	107.0	4.90	11.32	100	Clear	None	
8:25	10.07	7.59	-61.0	6.120	75.5	3.94	11.55	100	Clear	None	
8:30	10.44	7.53	-96.0	6.100	61.4	3.08	11.89	100	Clear	None	
8:35	11.56	7.49	-98.0	5.910	40.2	2.99	12.32	100	Clear	None	
8:40	11.80	7.48	-94.0	5.740	38.5	3.02	12.58	100	Clear	None	
8:45	11.74	7.49	-90.0	5.750	37.8	3.07	12.75	100	Clear	None	
8:50	11.89	7.47	-89.0	5.640	21.4	3.09	12.97	100	Clear	None	
8:55	12.02	7.46	-90.0	5.600	19.2	3.07	13.13	100	Clear	None	
9:00	12.07	7.45	-91.0	5.540	18.8	3.10	13.25	100	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	106_LMW-4 107_LMW-4(Dissolved) 108_LMW-4(SW/EcoRisk)	Sample Time:	9:05 9:10 9:15	Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - Ecorisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-5	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	--	**Well Depth (ft):**	--	**Pump Depth (ft):**	--		
Background PID (ppm):	0.0	**Well PID (ppm):**	20.4	**Screen Interval (ft):**	--		
Water Quality Meter:	--	**Water Quality Meter ID:**	--	**Well Diameter (in):**	1"		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES
LMW-5 was not sampled due to product in well.											
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	--	Sample Time:	--	Sample Analyses:	--
QA/QC Sample Number:		QA/QC Sample Time:		QA/QC Sample Analyses:	

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th St.	**Site Location:**	Manhattan, NY	**Well No:**	LMW-6	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	7.85	**Well Depth (ft):**	15	**Pump Depth (ft):**	11.5		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	XX17BXDT	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
12:30	—	—	—	—	—	—	7.85	200	—	—	Begin Purging
12:35	15.72	7.26	-157.0	0.668	26.5	1.87	7.88	200	Light Gray	Slight Odor	
12:40	15.68	7.25	-169.0	0.661	19.3	0.91	7.88	200	Light Gray	Slight Odor	
12:45	15.02	7.24	-184.0	0.644	19.7	0.67	7.88	200	Clear	None	
12:50	14.72	7.23	-190.0	0.651	16.6	0.57	7.88	200	Clear	None	
12:55	14.42	7.23	-200.0	0.640	12.9	0.44	7.88	200	Clear	None	
13:00	14.12	7.23	-212.0	0.640	8.8	0.12	7.88	200	Clear	None	
13:05	14.04	7.22	-217.0	0.639	7.6	0.00	7.88	200	Clear	None	
13:10	13.89	7.22	-229.0	0.640	5.2	0.00	7.88	200	Clear	None	
13:15	13.75	7.21	-233.0	0.641	4.9	0.00	7.88	200	Clear	None	
13:20	13.70	7.21	-239.0	0.639	4.9	0.00	7.88	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	124_LMW-6 125_LMW-6(Dissolved) 126_LMW_6(SW/EcoRisk)	Sample Time:	13:25 13:39 13:35	Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - EcoRisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 W 155th Street	**Site Location:**	280 W 155th	**Well No:**	LMW-7	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	SH		
Initial DTW (ft):	7.70	**Well Depth (ft):**	13	**Pump Depth (ft):**	10.5		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	3-13		
Water Quality Meter:	Horiba U5000	**Water Quality Meter ID:**	G3D500YB	**Well Diameter (in):**	2"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
12:35	13.50	7.54	-7.00	0.856	123.00	0.14	8.00	200	---	---	Begin Purging
12:40	12.97	7.43	-104	0.822	71.0	0.00	8.00	200	Clear	None	
12:45	12.81	7.42	-109	0.769	48.7	0.00	8.00	200	Clear	None	
12:50	12.76	7.40	-112	0.716	25.4	0.00	8.00	200	Clear	None	
12:55	12.73	7.37	-113	0.681	11.8	0.00	8.00	200	Clear	None	
13:00	12.54	7.38	-114	0.651	3.2	0.00	8.00	200	Clear	None	
13:05	12.54	7.38	-115	0.639	1.9	0.00	8.00	200	Clear	None	
13:10	12.53	7.40	-118	0.627	0.9	0.00	8.00	200	Clear	None	
13:15	12.50	7.42	-119	0.623	0.0	0.00	8.00	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	121_LMW-7 122_LMW-7(Dissolved) 123_LMW-7(SW/Ecorisk)	Sample Time:	13:15 13:20 13:25	Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - SW/EcoRisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-8	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Bright Sun	**Sampler(s):**	SH		
Initial DTW (ft):	10.50	**Well Depth (ft):**	15	**Pump Depth (ft):**	12.5		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	5-15		
Water Quality Meter:	Horiba U5000	**Water Quality Meter ID:**	G3D500YB	**Well Diameter (in):**	2"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
8:50	10.69	7.16	322	3.81	111	1.01	11.00	100	---	---	Begin Purging
8:55	12.4	7.33	306	3.67	179	0.90	11.50	100	Clear	None	
9:00	13.61	7.37	244	3.58	163	0.71	12.50	100	Clear	None	
9:05	14.8	7.41	149	3.39	622	1.73	12.50	100	Clear	None	
9:10	14.45	7.52	148	3.36	108	6.05	12.50	100	Clear	None	
9:15	13.68	7.53	174	3.45	86.6	6.26	12.50	100	Clear	None	
9:20	13.52	7.50	159	3.48	45.5	1.65	12.50	100	Clear	None	Well runs dry, stop purge 5 mins
9:25	13.28	7.49	104	3.42	33.6	2.22	12.50	100	Clear	None	
9:30	13.25	7.51	116	3.44	37.1	2.49	12.50	100	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	109_LMW-8 110_LMW-8(Dissolved) 111_LMW-8(Ecorisk)	Sample Time:	9:30 9:35 9:40	Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - EcoRisk
QA/QC Sample Number:	--	QA/QC Sample Time:	--	QA/QC Sample Analyses:	--

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	280 West 155th Street	**Site Location:**	Manhattan, NY	**Well No:**	LMW-9	**Date:**	2/26/2021
Job Number:	100765102	**Weather:**	40's F, Sunny	**Sampler(s):**	MG		
Initial DTW (ft):	9.43	**Well Depth (ft):**	13	**Pump Depth (ft):**	11		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	3-13		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	XX17BXDT	**Well Diameter (in):**	2"		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**
10:30	---	---	---	---	---	---	9.43	200	---	---	Begin Purging
10:35	16.85	7.10	-46.0	0.819	9.0	1.46	9.45	200	Clear	None	
10:40	16.97	7.02	-70.0	0.787	2.5	0.65	9.45	200	Clear	None	
10:45	16.79	7.03	-78.0	0.770	0.9	0.34	9.45	200	Clear	None	
10:50	16.80	7.03	-79.0	0.762	0.0	0.22	9.45	200	Clear	None	
10:55	16.71	7.03	-83.0	0.758	0.0	0.12	9.45	200	Clear	None	
11:00	16.68	7.03	-84.0	0.759	0.0	0.11	9.45	200	Clear	None	
11:05	16.68	7.04	-86.0	0.758	0.0	0.12	9.45	200	Clear	None	Stabilized
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown				

Notes:

Sample Number:	112_LMW-9 113_LMW-9 (Dissolved) 114_LMW-9 (SW/EcoRisk)	Sample Time:	11:10 11:15 11:20	Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - EcoRisk
QA/QC Sample Number:	115_DUP-2 116_DUP-2 (Dissolved) 117_DUP-2 (SW/EcoRisk)	QA/QC Sample Time:	11:25 11:30 11:35	QA/QC Sample Analyses:	PAHs Dissolved PAHs Dissolved PAHs - EcoRisk

LANGAN

APPENDIX D

Soil Vapor Sampling Field Logs

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 280 West 155th Street

Samplers: MG

Date: 9/14/2020

Sample #	085_Ambient-1	093_LSV-7	092_LSV-8	091_LSV-11	090_LSV-12
Location	--	LSV-7	LSV-8	LSV-11	LSV-12
Summa Canister ID	2050	3281	2951	1559	3464
Flow Controller ID	676	1518	561	1922	1735
Sample Depth (b.g.s.)	--	7'	7'	7.5'	8'
Additional Tubing Added	[✓ NO]/ YES - How much	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'
Purge Time (Start)		9:10	8:50	9:25	8:35
Purge Time (Stop)		9:15	8:55	9:30	8:40
Total Purge Time (min)		5	5	5	5
Purge Volume		1 L	1 L	1 L	1 L
PID Test of Purge Air		8,616 ppb	14.29 ppm	2,309 ppb	4,209 ppb
Initial Tracer Gas Results in sampling line		0%	0%	0%	0%
Initial Tracer Gas Results in shroud		94.4%	97.3%	96.2%	96.6%
Pressure Gauge - before sampling	-29.7	-29.6	-29.5	-29.5	-29.5
Sample Time (Start)	6:50	9:20	9:00	9:35	8:45
Sample Time (Stop)	14:30	11:17	11:15	11:20	10:40
Total Sample Time (min)	460	117	135	105	115
Pressure Gauge - after sampling	-2.72	-2.87	-3.91	-4.78	-3.18
Sample Volume	6 L	6 L	6 L	6 L	6 L
Canister Pressure Went to Ambient Pressure?	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]
Final Tracer Gas Results in sampling line	--	–	–	–	–
Final Tracer Gas Results in shroud	--	–	–	–	–
Associated Ambient Air Sample Number	--	085_Ambient-1	085_Ambient-1	085_Ambient-1	085_Ambient-1
Weather 24 hours before and during sampling	75, Sunny, Clear				
General Comments					

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 280 West 155th Street

Samplers: MG

Date: 9/14/2020

Sample #	086_LSV-13	087_DUP-1	094_LSV-16	089_LSV-17	088_LSV-18
Location	LSV-13	LSV-13	LSV-16	LSV-17	LSV-18
Summa Canister ID	2465	3392	1621	3346	953
Flow Controller ID	1746	954	1107	1794	1587
Sample Depth (b.g.s.)	3'	3'	3.5'	7.5'	4'
Additional Tubing Added	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'
Purge Time (Start)	7:40	7:40	11:35	8:15	8:00
Purge Time (Stop)	7:45	7:45	11:40	8:20	8:05
Total Purge Time (min)	5	5	5	5	5
Purge Volume	1 L	1 L	1 L	1 L	1 L
PID Test of Purge Air	5,313 ppb	5,313 ppb	5,687 ppb	4,158 ppb	2,258 ppb
Initial Tracer Gas Results in sampling line	0%	0%	0%	0%	0%
Initial Tracer Gas Results in shroud	97.3%	97.3%	97.8%	95.2%	94.8%
Pressure Gauge - before sampling	-29.6	-29.4	-29.3	-29.3	-29.7
Sample Time (Start)	7:50	7:50	11:45	9:30	8:10
Sample Time (Stop)	9:52	9:52	13:40	11:30	10:20
Total Sample Time (min)	122	122	115	120	130
Pressure Gauge - after sampling	-5.94	-3.07	-3.87	-4.79	-3.98
Sample Volume	6 L	6 L	6 L	6 L	6 L
Canister Pressure Went to Ambient Pressure?	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]
Final Tracer Gas Results in sampling line	--	--	--	--	--
Final Tracer Gas Results in shroud	--	--	--	--	--
Associated Ambient Air Sample Number	085_Ambient-1	085_Ambient-1	085_Ambient-1	085_Ambient-1	085_Ambient-1
Weather 24 hours before and during sampling	75, Sunny, Clear				
General Comments	First Summa canister at LSV-17 went to ambient within 35 minutes, used new canister and flow controller.				

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 280 West 155th Street
Samplers: MG
Date: 9/15/2020

Sample #	095_Ambient-2	097_LSV-5	099_LSV-6	100_LSV-9	101_LSV-10
Location	--	LSV-5	LSV-6	LSV-9	LSV-10
Summa Canister ID	3300	1534	3319	2331	3314
Flow Controller ID	1653	648	623	1724	968
Sample Depth (b.g.s.)	--	3.5'	3.5'	3'	6'
Additional Tubing Added	[✓ NO]/ YES - How much	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'
Purge Time (Start)		7:30	8:00	8:15	8:50
Purge Time (Stop)		7:35	8:05	8:20	8:55
Total Purge Time (min)		5	5	5	5
Purge Volume		1 L	1 L	1 L	1 L
PID Test of Purge Air		1,762 ppb	1,541 ppb	1,004 ppb	2,028 ppb
Initial Tracer Gas Results in sampling line		0%	0%	0%	0%
Initial Tracer Gas Results in shroud		98.9%	98.5%	95.6%	96.9%
Pressure Gauge - before sampling	-29.5	-29.5	-29.6	-29.5	-29.3
Sample Time (Start)	7:00	7:40	8:10	8:25	9:00
Sample Time (Stop)	14:40	9:58	10:00	10:20	11:15
Total Sample Time (min)	460	138	110	115	135
Pressure Gauge - after sampling	-6.44	-3.46	-1.67	-4.67	-0.89
Sample Volume	6 L	6 L	6 L	6 L	6 L
Canister Pressure Went to Ambient Pressure?	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]	YES / [✓ NO]
Final Tracer Gas Results in sampling line	--	--	--	--	--
Final Tracer Gas Results in shroud	--	--	--	--	--
Associated Ambient Air Sample Number	--	095_Ambient-2	095_Ambient-2	095_Ambient-2	095_Ambient-2
Weather 24 hours before and during sampling	70, Sunny, Clear				
General Comments					

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 280 West 155th Street

Samplers: MG

Date: 9/15/2020

Sample #	096_LSV-14	098_LSV-15			
Location	LSV-14	LSV-15			
Summa Canister ID	2889	2069			
Flow Controller ID	69	1081			
Sample Depth (b.g.s.)	4'	3'			
Additional Tubing Added	NO/ [✓ YES] - How much ~2'	NO/ [✓ YES] - How much ~2'	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much
Purge Time (Start)	7:15	7:45			
Purge Time (Stop)	7:20	7:50			
Total Purge Time (min)	5	5			
Purge Volume	1 L	1 L			
PID Test of Purge Air	1,252 ppb	1,195 ppb			
Initial Tracer Gas Results in sampling line	0%	0%			
Initial Tracer Gas Results in shroud	94.1%	97.4%			
Pressure Gauge - before sampling	-29.5	-29.7			
Sample Time (Start)	7:25	7:55			
Sample Time (Stop)	10:17	9:40			
Total Sample Time (min)	172	105			
Pressure Gauge - after sampling	-4.66	-4.77			
Sample Volume	6 L	6 L			
Canister Pressure Went to Ambient Pressure?	YES / [✓ NO]	YES / [✓ NO]	YES / NO	YES / NO	YES / NO
Final Tracer Gas Results in sampling line	--	–			
Final Tracer Gas Results in shroud	--	–			
Associated Ambient Air Sample Number	095_Ambient-2	095_Ambient-2			
Weather 24 hours before and during sampling	75, Sunny, Clear				
General Comments					

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June

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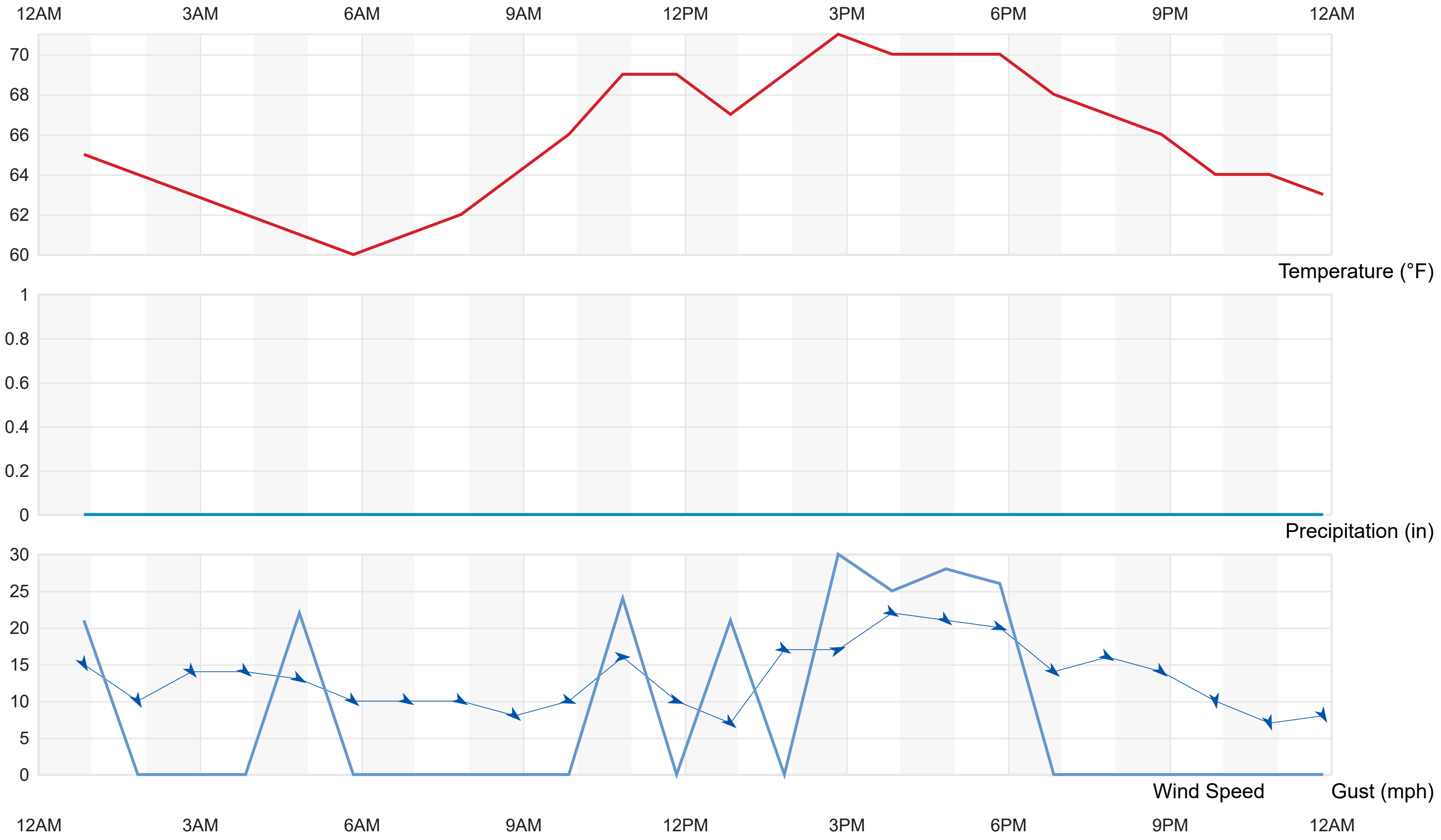
2019

View



Summary

Temperature (° F)	Actual	Historic Avg.	Record	▲
High Temp	71	77	93	
Low Temp	60	60	49	
Day Average Temp	65.63	68	-	

Precipitation (Inches)	Actual	Historic Avg.	Record	▲
Precipitation (past 24 hours from 11:51:00)	0.39	0.14	-	

Dew Point (° F)	Actual	Historic Avg.	Record	▲
Dew Point	39.33	-	-	
High	48	-	-	
Low	29	-	-	
Average	39.33	-	-	

Wind (MPH)	Actual	Historic Avg.	Record	▲
Max Wind Speed	22	-	-	
Visibility	10	-	-	

Sea Level Pressure (Hg)	Actual	Historic Avg.	Record	▲
Sea Level Pressure	30.03	-	-	

Astronomy	Day Length	Rise	Set	▲
Actual Time	14h 55m	5:27 AM	8:22 PM	
Civil Twilight		4:54 AM	8:55 PM	
Nautical Twilight		4:12 AM	9:37 PM	
Astronomical Twilight		3:24 AM	10:25 PM	
Moon: new moon		5:45 AM	8:43 PM	

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:51 AM	65 °F	48 °F	54 %	NNW	15 mph	21 mph	29.74 in	0.0 in	Fair
1:51 AM	64 °F	45 °F	50 %	NNW	10 mph	0 mph	29.74 in	0.0 in	Mostly Cloudy
2:51 AM	63 °F	48 °F	58 %	NW	14 mph	0 mph	29.74 in	0.0 in	Fair
3:51 AM	62 °F	48 °F	60 %	NW	14 mph	0 mph	29.76 in	0.0 in	Mostly Cloudy
4:51 AM	61 °F	47 °F	60 %	WNW	13 mph	22 mph	29.77 in	0.0 in	Fair
5:51 AM	60 °F	46 °F	60 %	NW	10 mph	0 mph	29.82 in	0.0 in	Fair
6:51 AM	61 °F	46 °F	58 %	WNW	10 mph	0 mph	29.84 in	0.0 in	Fair

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
7:51 AM	62 °F	44 °F	52 %	WNW	10 mph	0 mph	29.86 in	0.0 in	Fair
8:51 AM	64 °F	39 °F	40 %	NW	8 mph	0 mph	29.87 in	0.0 in	Partly Cloudy
9:51 AM	66 °F	40 °F	38 %	WNW	10 mph	0 mph	29.85 in	0.0 in	Partly Cloudy
10:51 AM	69 °F	39 °F	33 %	W	16 mph	24 mph	29.87 in	0.0 in	Mostly Cloudy
11:51 AM	69 °F	38 °F	32 %	WNW	10 mph	0 mph	29.88 in	0.0 in	Mostly Cloudy
12:51 PM	67 °F	38 °F	34 %	NW	7 mph	21 mph	29.87 in	0.0 in	Partly Cloudy
1:51 PM	69 °F	36 °F	30 %	WNW	17 mph	0 mph	29.86 in	0.0 in	Fair
2:51 PM	71 °F	29 °F	21 %	WSW	17 mph	30 mph	29.86 in	0.0 in	Fair
3:51 PM	70 °F	30 °F	23 %	WNW	22 mph	25 mph	29.87 in	0.0 in	Fair / Windy
4:51 PM	70 °F	29 °F	22 %	NW	21 mph	28 mph	29.88 in	0.0 in	Fair / Windy
5:51 PM	70 °F	33 °F	26 %	WNW	20 mph	26 mph	29.89 in	0.0 in	Fair
6:51 PM	68 °F	37 °F	32 %	NW	14 mph	0 mph	29.91 in	0.0 in	Fair
7:51 PM	67 °F	35 °F	31 %	WNW	16 mph	0 mph	29.95 in	0.0 in	Fair
8:51 PM	66 °F	36 °F	33 %	NW	14 mph	0 mph	29.97 in	0.0 in	Fair
9:51 PM	64 °F	37 °F	37 %	N	10 mph	0 mph	30.00 in	0.0 in	Fair
10:51 PM	64 °F	38 °F	38 %	NNW	7 mph	0 mph	30.01 in	0.0 in	Fair
11:51 PM	63 °F	38 °F	40 %	NNW	8 mph	0 mph	30.03 in	0.0 in	Fair

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40.77 °N, **73.86** °W

New York City, NY Weather History ★

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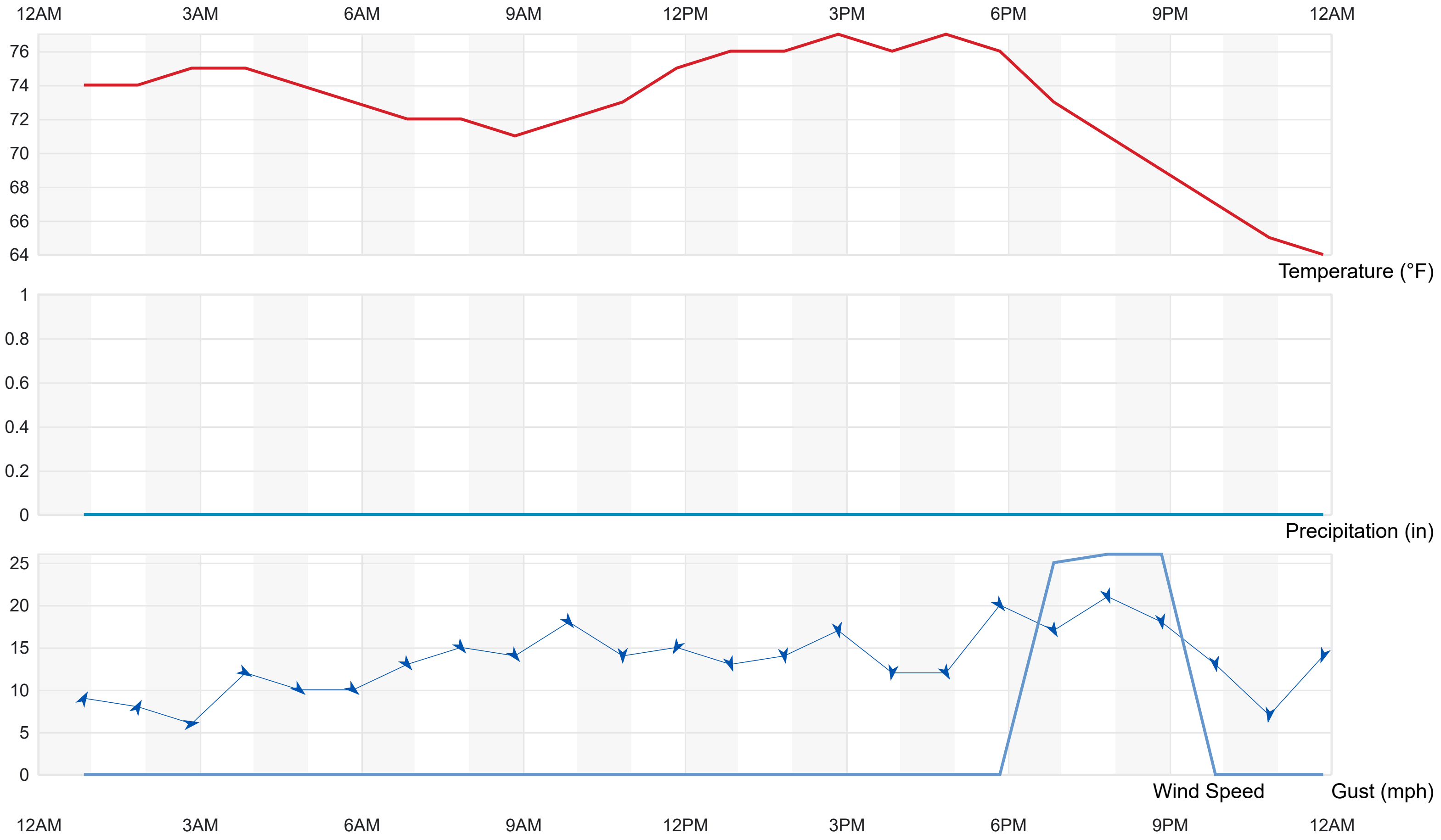
Daily (/history/daily/us/ny/new-york-city/KLGA/date/2020-9-14) Weekly (/history/weekly/us/ny/new-york-city/KLGA/date/2020-9-14) Monthly (/history/monthly/us/ny/new-york-city/KLGA/date/2020-9)

September 14 2020 View



Summary

Temperature (° F)	Actual	Historic Avg.	Record	▲
High Temp	77	77	91	
Low Temp	64	63	48	
Day Average Temp	72.79	70	-	

Precipitation (Inches)	Actual	Historic Avg.	Record	▲
Precipitation (past 24 hours from 04:51:00)	0.00	0.13	-	

Dew Point (° F)	Actual	Historic Avg.	Record	▲
Dew Point	54.13	-	-	
High	65	-	-	
Low	43	-	-	
Average	54.13	-	-	

Wind (MPH)	Actual	Historic Avg.	Record	▲
Max Wind Speed	21	-	-	
Visibility	10	-	-	

Sea Level Pressure (Hg)	Actual	Historic Avg.	Record	▲
Sea Level Pressure	30.23	-	-	

Astronomy	Day Length	Rise	Set	▲
Actual Time	12h 30m	6:36 AM	7:07 PM	
Civil Twilight		6:09 AM	7:35 PM	
Nautical Twilight		5:36 AM	8:07 PM	
Astronomical Twilight		5:03 AM	8:40 PM	
Moon: waning crescent		2:51 AM	5:53 PM	

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:51 AM	74 °F	64 °F	71 %	SSW	9 mph	0 mph	30.00 in	0.0 in	Cloudy
1:51 AM	74 °F	64 °F	71 %	SSW	8 mph	0 mph	29.99 in	0.0 in	Mostly Cloudy
2:51 AM	75 °F	65 °F	71 %	W	6 mph	0 mph	29.99 in	0.0 in	Mostly Cloudy
3:51 AM	75 °F	64 °F	69 %	WNW	12 mph	0 mph	29.99 in	0.0 in	Mostly Cloudy
4:51 AM	74 °F	63 °F	68 %	NW	10 mph	0 mph	30.01 in	0.0 in	Mostly Cloudy
5:51 AM	73 °F	62 °F	68 %	NW	10 mph	0 mph	30.01 in	0.0 in	Mostly Cloudy
6:51 AM	72 °F	60 °F	66 %	NW	13 mph	0 mph	30.03 in	0.0 in	Mostly Cloudy

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
7:51 AM	72 °F	59 °F	64 %	NW	15 mph	0 mph	30.05 in	0.0 in	Mostly Cloudy
8:51 AM	71 °F	59 °F	66 %	NW	14 mph	0 mph	30.06 in	0.0 in	Cloudy
9:51 AM	72 °F	57 °F	59 %	NW	18 mph	0 mph	30.08 in	0.0 in	Cloudy
10:51 AM	73 °F	56 °F	55 %	N	14 mph	0 mph	30.09 in	0.0 in	Mostly Cloudy
11:51 AM	75 °F	53 °F	46 %	NNE	15 mph	0 mph	30.09 in	0.0 in	Mostly Cloudy
12:51 PM	76 °F	52 °F	43 %	NNW	13 mph	0 mph	30.08 in	0.0 in	Mostly Cloudy
1:51 PM	76 °F	52 °F	43 %	N	14 mph	0 mph	30.08 in	0.0 in	Mostly Cloudy
2:51 PM	77 °F	51 °F	40 %	N	17 mph	0 mph	30.08 in	0.0 in	Mostly Cloudy
3:51 PM	76 °F	51 °F	42 %	N	12 mph	0 mph	30.06 in	0.0 in	Mostly Cloudy
4:51 PM	77 °F	50 °F	39 %	NNW	12 mph	0 mph	30.07 in	0.0 in	Mostly Cloudy
5:51 PM	76 °F	51 °F	42 %	NW	20 mph	0 mph	30.08 in	0.0 in	Cloudy
6:51 PM	73 °F	47 °F	39 %	NNW	17 mph	25 mph	30.11 in	0.0 in	Mostly Cloudy
7:51 PM	71 °F	45 °F	39 %	NNW	21 mph	26 mph	30.13 in	0.0 in	Mostly Cloudy / Windy
8:51 PM	69 °F	43 °F	39 %	N	18 mph	26 mph	30.16 in	0.0 in	Mostly Cloudy
9:51 PM	67 °F	43 °F	42 %	N	13 mph	0 mph	30.18 in	0.0 in	Mostly Cloudy
10:51 PM	65 °F	45 °F	48 %	N	7 mph	0 mph	30.21 in	0.0 in	Mostly Cloudy
11:51 PM	64 °F	43 °F	46 %	NNE	14 mph	0 mph	30.23 in	0.0 in	Mostly Cloudy

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40.77 °N, **73.86** °W

New York City, NY Weather History ★

68° LAGUARDIA AIRPORT STATION (/DASHBOARD/PWS/KNYNEWYO1302?CM_VEN=LOCALWX_PWSDASH) | CHANGE

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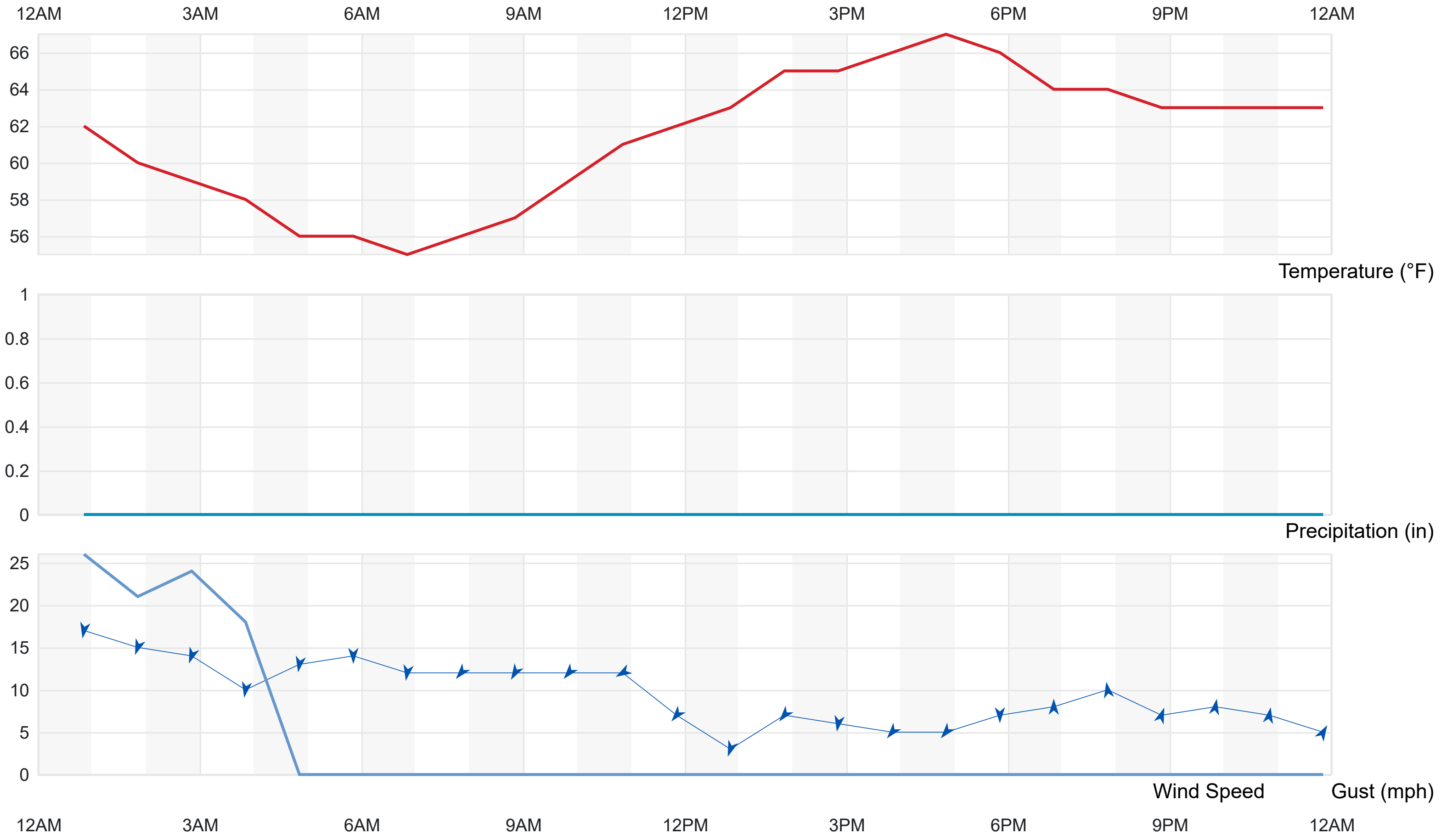
Monthly (/history/monthly/us/ny/new-york-city/KLGA/date/2020-9)

September

15

2020

View



Summary

Temperature (° F)	Actual	Historic Avg.	Record ▲
High Temp	67	77	91
Low Temp	55	62	49
Day Average Temp	61.38	70	-

Precipitation (Inches)	Actual	Historic Avg.	Record ▲
Precipitation (past 24 hours from 04:51:00)	0.00	0.13	-

Dew Point (° F)	Actual	Historic Avg.	Record ▲
Dew Point	43.04	-	-
High	47	-	-
Low	40	-	-
Average	43.04	-	-

Wind (MPH)	Actual	Historic Avg.	Record ▲
Max Wind Speed	17	-	-
Visibility	10	-	-

Sea Level Pressure (Hg)	Actual	Historic Avg.	Record ▲
Sea Level Pressure	30.34	-	-

Astronomy	Day Length	Rise	Set ▲
Actual Time	12h 28m	6:37 AM	7:05 PM
Civil Twilight		6:10 AM	7:33 PM
Nautical Twilight		5:37 AM	8:05 PM
Astronomical Twilight		5:04 AM	8:39 PM
Moon: waning crescent		4:03 AM	6:31 PM

Daily Observations

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
12:51 AM	62 °F	42 °F	48 %	N	17 mph	26 mph	30.24 in	0.0 in	Mostly Cloudy
1:51 AM	60 °F	41 °F	49 %	NNE	15 mph	21 mph	30.25 in	0.0 in	Mostly Cloudy
2:51 AM	59 °F	40 °F	49 %	NNE	14 mph	24 mph	30.25 in	0.0 in	Mostly Cloudy
3:51 AM	58 °F	41 °F	53 %	N	10 mph	18 mph	30.25 in	0.0 in	Mostly Cloudy
4:51 AM	56 °F	40 °F	55 %	N	13 mph	0 mph	30.26 in	0.0 in	Mostly Cloudy
5:51 AM	56 °F	40 °F	55 %	N	14 mph	0 mph	30.28 in	0.0 in	Mostly Cloudy
6:51 AM	55 °F	40 °F	57 %	N	12 mph	0 mph	30.30 in	0.0 in	Cloudy

Time	Temperature	Dew Point	Humidity	Wind	Wind Speed	Wind Gust	Pressure	Precip.	Condition
7:51 AM	56 °F	40 °F	55 %	NE	12 mph	0 mph	30.32 in	0.0 in	Cloudy
8:51 AM	57 °F	40 °F	53 %	NNE	12 mph	0 mph	30.32 in	0.0 in	Cloudy
9:51 AM	59 °F	42 °F	53 %	NE	12 mph	0 mph	30.33 in	0.0 in	Cloudy
10:51 AM	61 °F	42 °F	50 %	ENE	12 mph	0 mph	30.34 in	0.0 in	Cloudy
11:51 AM	62 °F	43 °F	50 %	NE	7 mph	0 mph	30.33 in	0.0 in	Mostly Cloudy
12:51 PM	63 °F	43 °F	48 %	NNE	3 mph	0 mph	30.31 in	0.0 in	Mostly Cloudy
1:51 PM	65 °F	41 °F	42 %	NE	7 mph	0 mph	30.29 in	0.0 in	Mostly Cloudy
2:51 PM	65 °F	44 °F	47 %	N	6 mph	0 mph	30.27 in	0.0 in	Mostly Cloudy
3:51 PM	66 °F	43 °F	43 %	NE	5 mph	0 mph	30.26 in	0.0 in	Mostly Cloudy
4:51 PM	67 °F	45 °F	45 %	NE	5 mph	0 mph	30.25 in	0.0 in	Mostly Cloudy
5:51 PM	66 °F	46 °F	48 %	VAR	7 mph	0 mph	30.25 in	0.0 in	Mostly Cloudy
6:51 PM	64 °F	46 °F	52 %	S	8 mph	0 mph	30.26 in	0.0 in	Mostly Cloudy
7:51 PM	64 °F	46 °F	52 %	S	10 mph	0 mph	30.27 in	0.0 in	Mostly Cloudy
8:51 PM	63 °F	47 °F	56 %	SSW	7 mph	0 mph	30.28 in	0.0 in	Mostly Cloudy
9:51 PM	63 °F	47 °F	56 %	S	8 mph	0 mph	30.28 in	0.0 in	Mostly Cloudy
10:51 PM	63 °F	47 °F	56 %	S	7 mph	0 mph	30.27 in	0.0 in	Mostly Cloudy
11:51 PM	63 °F	47 °F	56 %	SSW	5 mph	0 mph	30.27 in	0.0 in	Mostly Cloudy

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APPENDIX E

Laboratory Data Reports

APPENDIX F

Data Usability Summary Reports

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: September 29, 2020

Re: Data Usability Summary Report
For 280 West 155th Street Development
August and September Groundwater Samples
Langan Project No.: 100765102

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in September 2020 by Langan Engineering and Environmental Services ("Langan") at the 280 West 155th Street Development site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), herbicides, 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
- PFAS by USEPA Method 537M
- Herbicides by SW-846 Method 8151A
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Total and Dissolved Metals by SW-846 Method 6020B
- Mercury by SW-846 Method 7470A
- 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
L2037563	L2037563-01	073_LMW-1	9/10/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-02	075_LMW-6	9/10/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-03	076_LMW-7	9/10/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-04	074_DUP-1	9/10/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-05	078_FB-1	9/10/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-06	079_TB-1	9/10/2020	VOCs
L2037563	L2037563-07	080_LMW-9	9/11/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-08	081_LMW-4	9/11/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-09	082_LMW-8	9/11/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-10	083_LMW-3	9/11/2020	VOCs, SVOCs, SVOC SIM, PFAS, Herbicides, PCBs, Pesticides, Total and Dissolved Metals, Hg, CN, CrVI, CrIII
L2037563	L2037563-11	084_TB-2	9/11/2020	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-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-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), 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, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, trip blank sample results, 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*
073_LMW-1	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
073_LMW-1	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
073_LMW-1	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
073_LMW-1	SW8260C	123-91-1	1,4-DIOXANE	UJ
073_LMW-1	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
073_LMW-1	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
073_LMW-1	SW8151A	93-76-5	2,4,5-T	UJ
073_LMW-1	SW8260C	591-78-6	2-HEXANONE	UJ
073_LMW-1	SW8270D	88-75-5	2-NITROPHENOL	UJ
073_LMW-1	SW8081B	72-54-8	4,4'-DDD	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
073_LMW-1	SW8081B	72-55-9	4,4'-DDE	UJ
073_LMW-1	SW8081B	50-29-3	4,4'-DDT	UJ
073_LMW-1	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
073_LMW-1	SW8260C	67-64-1	ACETONE	UJ
073_LMW-1	SW8260C	107-13-1	ACRYLONITRILE	UJ
073_LMW-1	SW8081B	309-00-2	ALDRIN	UJ
073_LMW-1	SW8081B	319-84-6	ALPHA-BHC	UJ
073_LMW-1	SW6020B	7440-36-0	ANTIMONY, DISSOLVED	U (0.004)
073_LMW-1	SW8081B	319-85-7	BETA-BHC	UJ
073_LMW-1	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
073_LMW-1	SW8260C	74-83-9	BROMOMETHANE	UJ
073_LMW-1	SW8081B	57-74-9	CHLORDANE	UJ
073_LMW-1	SW8260C	75-00-3	CHLOROETHANE	UJ
073_LMW-1	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
073_LMW-1	SW8081B	319-86-8	DELTA-BHC	UJ
073_LMW-1	SW8081B	60-57-1	DIELDRIN	UJ
073_LMW-1	SW8081B	959-98-8	ENDOSULFAN I	UJ
073_LMW-1	SW8081B	33213-65-9	ENDOSULFAN II	UJ
073_LMW-1	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
073_LMW-1	SW8081B	72-20-8	ENDRIN	UJ
073_LMW-1	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
073_LMW-1	SW8081B	53494-70-5	ENDRIN KETONE	UJ
073_LMW-1	SW8081B	76-44-8	HEPTACHLOR	UJ
073_LMW-1	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
073_LMW-1	SW8270DSIM	193-39-5	INDENO(1,2,3-CD)PYRENE	J
073_LMW-1	SW8081B	58-89-9	LINDANE	UJ
073_LMW-1	SW8081B	72-43-5	METHOXYCHLOR	UJ
073_LMW-1	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
073_LMW-1	SW8260C	91-20-3	NAPHTHALENE	UJ
073_LMW-1	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
073_LMW-1	E537(M)	375-73-5	PERFLUOROBUTANESULFONIC ACID (PFBS)	J

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
073_LMW-1	SW6020B	7440-28-0	THALLIUM, DISSOLVED	U (0.0005)
073_LMW-1	SW8081B	8001-35-2	TOXAPHENE	UJ
073_LMW-1	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
073_LMW-1	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
073_LMW-1	SW8260C	108-05-4	VINYL ACETATE	UJ
075_LMW-6	SW6020B	7440-36-0	ANTIMONY, DISSOLVED	U (0.004)
075_LMW-6	SW8081B	72-54-8	4,4'-DDD	UJ
075_LMW-6	SW8081B	72-55-9	4,4'-DDE	UJ
075_LMW-6	SW8081B	50-29-3	4,4'-DDT	UJ
075_LMW-6	SW8081B	309-00-2	ALDRIN	UJ
075_LMW-6	SW8081B	319-84-6	ALPHA-BHC	UJ
075_LMW-6	SW8081B	319-85-7	BETA-BHC	UJ
075_LMW-6	SW8081B	57-74-9	CHLORDANE	UJ
075_LMW-6	SW8081B	319-86-8	DELTA-BHC	UJ
075_LMW-6	SW8081B	60-57-1	DIELDRIN	UJ
075_LMW-6	SW8081B	959-98-8	ENDOSULFAN I	UJ
075_LMW-6	SW8081B	33213-65-9	ENDOSULFAN II	UJ
075_LMW-6	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
075_LMW-6	SW8081B	72-20-8	ENDRIN	UJ
075_LMW-6	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
075_LMW-6	SW8081B	53494-70-5	ENDRIN KETONE	UJ
075_LMW-6	SW8081B	76-44-8	HEPTACHLOR	UJ
075_LMW-6	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
075_LMW-6	SW8081B	58-89-9	LINDANE	UJ
075_LMW-6	SW8081B	72-43-5	METHOXYCHLOR	UJ
075_LMW-6	SW8081B	8001-35-2	TOXAPHENE	UJ
075_LMW-6	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
075_LMW-6	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
075_LMW-6	SW8151A	93-76-5	2,4,5-T	UJ
075_LMW-6	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
075_LMW-6	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
075_LMW-6	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
075_LMW-6	SW8260C	123-91-1	1,4-DIOXANE	UJ
075_LMW-6	SW8260C	591-78-6	2-HEXANONE	UJ
075_LMW-6	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
075_LMW-6	SW8260C	67-64-1	ACETONE	UJ
075_LMW-6	SW8260C	107-13-1	ACRYLONITRILE	UJ
075_LMW-6	SW8260C	74-83-9	BROMOMETHANE	UJ
075_LMW-6	SW8260C	75-00-3	CHLOROETHANE	UJ
075_LMW-6	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
075_LMW-6	SW8260C	91-20-3	NAPHTHALENE	UJ
075_LMW-6	SW8260C	108-05-4	VINYL ACETATE	UJ
075_LMW-6	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
075_LMW-6	SW8270D	88-75-5	2-NITROPHENOL	UJ
075_LMW-6	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
075_LMW-6	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
075_LMW-6	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
075_LMW-6	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
076_LMW-7	SW6020B	7440-36-0	ANTIMONY, DISSOLVED	U (0.004)
076_LMW-7	SW8081B	72-54-8	4,4'-DDD	UJ
076_LMW-7	SW8081B	72-55-9	4,4'-DDE	UJ
076_LMW-7	SW8081B	50-29-3	4,4'-DDT	UJ
076_LMW-7	SW8081B	309-00-2	ALDRIN	UJ
076_LMW-7	SW8081B	319-84-6	ALPHA-BHC	UJ
076_LMW-7	SW8081B	319-85-7	BETA-BHC	UJ
076_LMW-7	SW8081B	57-74-9	CHLORDANE	UJ
076_LMW-7	SW8081B	319-86-8	DELTA-BHC	UJ
076_LMW-7	SW8081B	60-57-1	DIELDRIN	UJ
076_LMW-7	SW8081B	959-98-8	ENDOSULFAN I	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
076_LMW-7	SW8081B	33213-65-9	ENDOSULFAN II	UJ
076_LMW-7	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
076_LMW-7	SW8081B	72-20-8	ENDRIN	UJ
076_LMW-7	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
076_LMW-7	SW8081B	53494-70-5	ENDRIN KETONE	UJ
076_LMW-7	SW8081B	76-44-8	HEPTACHLOR	UJ
076_LMW-7	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
076_LMW-7	SW8081B	58-89-9	LINDANE	UJ
076_LMW-7	SW8081B	72-43-5	METHOXYCHLOR	UJ
076_LMW-7	SW8081B	8001-35-2	TOXAPHENE	UJ
076_LMW-7	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
076_LMW-7	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
076_LMW-7	SW8151A	93-76-5	2,4,5-T	UJ
076_LMW-7	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
076_LMW-7	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
076_LMW-7	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
076_LMW-7	SW8260C	123-91-1	1,4-DIOXANE	UJ
076_LMW-7	SW8260C	591-78-6	2-HEXANONE	UJ
076_LMW-7	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
076_LMW-7	SW8260C	67-64-1	ACETONE	UJ
076_LMW-7	SW8260C	107-13-1	ACRYLONITRILE	UJ
076_LMW-7	SW8260C	74-83-9	BROMOMETHANE	UJ
076_LMW-7	SW8260C	75-00-3	CHLOROETHANE	UJ
076_LMW-7	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
076_LMW-7	SW8260C	91-20-3	NAPHTHALENE	UJ
076_LMW-7	SW8260C	108-05-4	VINYL ACETATE	UJ
076_LMW-7	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
076_LMW-7	SW8270D	88-75-5	2-NITROPHENOL	UJ
076_LMW-7	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
076_LMW-7	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
076_LMW-7	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
076_LMW-7	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
076_LMW-7	E537(M)	307-24-4	PERFLUOROHEXANOIC ACID (PFHXA)	U (3.48)
074_DUP-1	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
074_DUP-1	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
074_DUP-1	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
074_DUP-1	SW8260C	123-91-1	1,4-DIOXANE	UJ
074_DUP-1	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
074_DUP-1	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
074_DUP-1	SW8151A	93-76-5	2,4,5-T	UJ
074_DUP-1	SW8260C	591-78-6	2-HEXANONE	UJ
074_DUP-1	SW8270D	88-75-5	2-NITROPHENOL	UJ
074_DUP-1	SW8081B	72-54-8	4,4'-DDD	UJ
074_DUP-1	SW8081B	72-55-9	4,4'-DDE	UJ
074_DUP-1	SW8081B	50-29-3	4,4'-DDT	UJ
074_DUP-1	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
074_DUP-1	SW8260C	67-64-1	ACETONE	UJ
074_DUP-1	SW8260C	107-13-1	ACRYLONITRILE	UJ
074_DUP-1	SW8081B	309-00-2	ALDRIN	UJ
074_DUP-1	SW8081B	319-84-6	ALPHA-BHC	UJ
074_DUP-1	SW8081B	319-85-7	BETA-BHC	UJ
074_DUP-1	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
074_DUP-1	SW8260C	74-83-9	BROMOMETHANE	UJ
074_DUP-1	SW8081B	57-74-9	CHLORDANE	UJ
074_DUP-1	SW8260C	75-00-3	CHLOROETHANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
074_DUP-1	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
074_DUP-1	SW8081B	319-86-8	DELTA-BHC	UJ
074_DUP-1	SW8081B	60-57-1	DIELDRIN	UJ
074_DUP-1	SW8081B	959-98-8	ENDOSULFAN I	UJ
074_DUP-1	SW8081B	33213-65-9	ENDOSULFAN II	UJ
074_DUP-1	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
074_DUP-1	SW8081B	72-20-8	ENDRIN	UJ
074_DUP-1	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
074_DUP-1	SW8081B	53494-70-5	ENDRIN KETONE	UJ
074_DUP-1	SW8081B	76-44-8	HEPTACHLOR	UJ
074_DUP-1	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
074_DUP-1	SW8081B	58-89-9	LINDANE	UJ
074_DUP-1	SW8081B	72-43-5	METHOXYCHLOR	UJ
074_DUP-1	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
074_DUP-1	SW8260C	91-20-3	NAPHTHALENE	UJ
074_DUP-1	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
074_DUP-1	E537(M)	375-73-5	PERFLUOROBUTANESULFONIC ACID (PFBS)	J
074_DUP-1	SW8081B	8001-35-2	TOXAPHENE	UJ
074_DUP-1	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
074_DUP-1	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
074_DUP-1	SW8260C	108-05-4	VINYL ACETATE	UJ
080_LMW-9	SW6020B	7440-70-2	CALCIUM, TOTAL	J
080_LMW-9	SW6020B	7440-23-5	SODIUM, TOTAL	J
080_LMW-9	SW6020B	7440-28-0	THALLIUM, DISSOLVED	U (0.0005)
080_LMW-9	SW8081B	72-54-8	4,4'-DDD	UJ
080_LMW-9	SW8081B	72-55-9	4,4'-DDE	UJ
080_LMW-9	SW8081B	50-29-3	4,4'-DDT	UJ
080_LMW-9	SW8081B	309-00-2	ALDRIN	UJ
080_LMW-9	SW8081B	319-84-6	ALPHA-BHC	UJ
080_LMW-9	SW8081B	319-85-7	BETA-BHC	UJ
080_LMW-9	SW8081B	57-74-9	CHLORDANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
080_LMW-9	SW8081B	319-86-8	DELTA-BHC	UJ
080_LMW-9	SW8081B	60-57-1	DIELDRIN	UJ
080_LMW-9	SW8081B	959-98-8	ENDOSULFAN I	UJ
080_LMW-9	SW8081B	33213-65-9	ENDOSULFAN II	UJ
080_LMW-9	SW8081B	72-20-8	ENDRIN	UJ
080_LMW-9	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
080_LMW-9	SW8081B	53494-70-5	ENDRIN KETONE	UJ
080_LMW-9	SW8081B	76-44-8	HEPTACHLOR	UJ
080_LMW-9	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
080_LMW-9	SW8081B	58-89-9	LINDANE	UJ
080_LMW-9	SW8081B	72-43-5	METHOXYCHLOR	UJ
080_LMW-9	SW8081B	8001-35-2	TOXAPHENE	UJ
080_LMW-9	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
080_LMW-9	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
080_LMW-9	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
080_LMW-9	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
080_LMW-9	SW8260C	123-91-1	1,4-DIOXANE	UJ
080_LMW-9	SW8260C	591-78-6	2-HEXANONE	UJ
080_LMW-9	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
080_LMW-9	SW8260C	67-64-1	ACETONE	UJ
080_LMW-9	SW8260C	107-13-1	ACRYLONITRILE	UJ
080_LMW-9	SW8260C	75-25-2	BROMOFORM	UJ
080_LMW-9	SW8260C	75-00-3	CHLOROETHANE	UJ
080_LMW-9	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
080_LMW-9	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	J
080_LMW-9	SW8260C	91-20-3	NAPHTHALENE	UJ
080_LMW-9	SW8260C	108-05-4	VINYL ACETATE	UJ
080_LMW-9	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
080_LMW-9	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
080_LMW-9	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ
080_LMW-9	SW8260C	98-06-6	TERT-BUTYLBENZENE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
080_LMW-9	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
080_LMW-9	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
080_LMW-9	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
080_LMW-9	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
080_LMW-9	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
080_LMW-9	SW8270D	65-85-0	BENZOIC ACID	UJ
080_LMW-9	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
080_LMW-9	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
080_LMW-9	SW8270DSIM	87-68-3	HEXACHLOROBUTADIENE	UJ
080_LMW-9	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
081_LMW-4	SW8081B	72-54-8	4,4'-DDD	UJ
081_LMW-4	SW8081B	72-55-9	4,4'-DDE	UJ
081_LMW-4	SW8081B	50-29-3	4,4'-DDT	UJ
081_LMW-4	SW8081B	309-00-2	ALDRIN	UJ
081_LMW-4	SW8081B	319-84-6	ALPHA-BHC	UJ
081_LMW-4	SW8081B	319-85-7	BETA-BHC	UJ
081_LMW-4	SW8081B	57-74-9	CHLORDANE	UJ
081_LMW-4	SW8081B	319-86-8	DELTA-BHC	UJ
081_LMW-4	SW8081B	60-57-1	DIELDRIN	UJ
081_LMW-4	SW8081B	959-98-8	ENDOSULFAN I	UJ
081_LMW-4	SW8081B	33213-65-9	ENDOSULFAN II	UJ
081_LMW-4	SW8081B	72-20-8	ENDRIN	UJ
081_LMW-4	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
081_LMW-4	SW8081B	53494-70-5	ENDRIN KETONE	UJ
081_LMW-4	SW8081B	76-44-8	HEPTACHLOR	UJ
081_LMW-4	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
081_LMW-4	SW8081B	58-89-9	LINDANE	UJ
081_LMW-4	SW8081B	72-43-5	METHOXYCHLOR	UJ
081_LMW-4	SW8081B	8001-35-2	TOXAPHENE	UJ
081_LMW-4	SW8081B	5103-71-9	CIS-CHLORDANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
081_LMW-4	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
081_LMW-4	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
081_LMW-4	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
081_LMW-4	SW8260C	123-91-1	1,4-DIOXANE	UJ
081_LMW-4	SW8260C	591-78-6	2-HEXANONE	UJ
081_LMW-4	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
081_LMW-4	SW8260C	67-64-1	ACETONE	UJ
081_LMW-4	SW8260C	107-13-1	ACRYLONITRILE	UJ
081_LMW-4	SW8260C	75-25-2	BROMOFORM	UJ
081_LMW-4	SW8260C	75-00-3	CHLOROETHANE	UJ
081_LMW-4	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
081_LMW-4	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	J
081_LMW-4	SW8260C	91-20-3	NAPHTHALENE	UJ
081_LMW-4	SW8260C	108-05-4	VINYL ACETATE	UJ
081_LMW-4	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
081_LMW-4	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
081_LMW-4	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ
081_LMW-4	SW8260C	98-06-6	TERT-BUTYLBENZENE	UJ
081_LMW-4	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
081_LMW-4	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
081_LMW-4	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
081_LMW-4	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
081_LMW-4	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
081_LMW-4	SW8270D	65-85-0	BENZOIC ACID	UJ
081_LMW-4	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
081_LMW-4	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
081_LMW-4	SW8270DSIM	87-68-3	HEXACHLOROBUTADIENE	UJ
081_LMW-4	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
081_LMW-4	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
081_LMW-4	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
082_LMW-8	SW8081B	72-54-8	4,4'-DDD	UJ
082_LMW-8	SW8081B	72-55-9	4,4'-DDE	UJ
082_LMW-8	SW8081B	50-29-3	4,4'-DDT	UJ
082_LMW-8	SW8081B	309-00-2	ALDRIN	UJ
082_LMW-8	SW8081B	319-84-6	ALPHA-BHC	UJ
082_LMW-8	SW8081B	319-85-7	BETA-BHC	UJ
082_LMW-8	SW8081B	57-74-9	CHLORDANE	UJ
082_LMW-8	SW8081B	319-86-8	DELTA-BHC	UJ
082_LMW-8	SW8081B	60-57-1	DIELDRIN	UJ
082_LMW-8	SW8081B	959-98-8	ENDOSULFAN I	UJ
082_LMW-8	SW8081B	33213-65-9	ENDOSULFAN II	UJ
082_LMW-8	SW8081B	72-20-8	ENDRIN	UJ
082_LMW-8	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
082_LMW-8	SW8081B	53494-70-5	ENDRIN KETONE	UJ
082_LMW-8	SW8081B	76-44-8	HEPTACHLOR	UJ
082_LMW-8	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
082_LMW-8	SW8081B	58-89-9	LINDANE	UJ
082_LMW-8	SW8081B	72-43-5	METHOXYCHLOR	UJ
082_LMW-8	SW8081B	8001-35-2	TOXAPHENE	UJ
082_LMW-8	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
082_LMW-8	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
082_LMW-8	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
082_LMW-8	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
082_LMW-8	SW8260C	123-91-1	1,4-DIOXANE	UJ
082_LMW-8	SW8260C	591-78-6	2-HEXANONE	UJ
082_LMW-8	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
082_LMW-8	SW8260C	67-64-1	ACETONE	J
082_LMW-8	SW8260C	107-13-1	ACRYLONITRILE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
082_LMW-8	SW8260C	75-25-2	BROMOFORM	UJ
082_LMW-8	SW8260C	75-00-3	CHLOROETHANE	UJ
082_LMW-8	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
082_LMW-8	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	J
082_LMW-8	SW8260C	91-20-3	NAPHTHALENE	J
082_LMW-8	SW8260C	108-05-4	VINYL ACETATE	UJ
082_LMW-8	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
082_LMW-8	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
082_LMW-8	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ
082_LMW-8	SW8260C	98-06-6	TERT-BUTYLBENZENE	UJ
082_LMW-8	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
082_LMW-8	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
082_LMW-8	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
082_LMW-8	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
082_LMW-8	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
082_LMW-8	SW8270D	65-85-0	BENZOIC ACID	UJ
082_LMW-8	SW8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
082_LMW-8	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
082_LMW-8	SW8270DSIM	87-68-3	HEXACHLOROBUTADIENE	UJ
082_LMW-8	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
082_LMW-8	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
082_LMW-8	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
083_LMW-3	SW8081B	72-54-8	4,4'-DDD	UJ
083_LMW-3	SW8081B	72-55-9	4,4'-DDE	UJ
083_LMW-3	SW8081B	50-29-3	4,4'-DDT	UJ
083_LMW-3	SW8081B	309-00-2	ALDRIN	UJ
083_LMW-3	SW8081B	319-84-6	ALPHA-BHC	UJ
083_LMW-3	SW8081B	319-85-7	BETA-BHC	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
083_LMW-3	SW8081B	57-74-9	CHLORDANE	UJ
083_LMW-3	SW8081B	319-86-8	DELTA-BHC	UJ
083_LMW-3	SW8081B	60-57-1	DIELDRIN	UJ
083_LMW-3	SW8081B	959-98-8	ENDOSULFAN I	UJ
083_LMW-3	SW8081B	33213-65-9	ENDOSULFAN II	UJ
083_LMW-3	SW8081B	72-20-8	ENDRIN	UJ
083_LMW-3	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
083_LMW-3	SW8081B	53494-70-5	ENDRIN KETONE	UJ
083_LMW-3	SW8081B	76-44-8	HEPTACHLOR	UJ
083_LMW-3	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
083_LMW-3	SW8081B	58-89-9	LINDANE	UJ
083_LMW-3	SW8081B	72-43-5	METHOXYCHLOR	UJ
083_LMW-3	SW8081B	8001-35-2	TOXAPHENE	UJ
083_LMW-3	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
083_LMW-3	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
083_LMW-3	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
083_LMW-3	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
083_LMW-3	SW8260C	123-91-1	1,4-DIOXANE	UJ
083_LMW-3	SW8260C	591-78-6	2-HEXANONE	UJ
083_LMW-3	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
083_LMW-3	SW8260C	67-64-1	ACETONE	UJ
083_LMW-3	SW8260C	107-13-1	ACRYLONITRILE	UJ
083_LMW-3	SW8260C	75-25-2	BROMOFORM	UJ
083_LMW-3	SW8260C	75-00-3	CHLOROETHANE	UJ
083_LMW-3	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
083_LMW-3	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	J
083_LMW-3	SW8260C	91-20-3	NAPHTHALENE	UJ
083_LMW-3	SW8260C	108-05-4	VINYL ACETATE	UJ
083_LMW-3	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
083_LMW-3	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
083_LMW-3	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
083_LMW-3	SW8260C	98-06-6	TERT-BUTYLBENZENE	UJ
083_LMW-3	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
083_LMW-3	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
083_LMW-3	SW8270D	106-47-8	4-CHLOROANILINE	UJ
083_LMW-3	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
083_LMW-3	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
073_LMW-1	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	J
073_LMW-1	E537(M)	375-73-5	PERFLUOROBUTANESULFONIC ACID (PFBS)	J
073_LMW-1	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
075_LMW-6	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	J
075_LMW-6	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	J
075_LMW-6	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
076_LMW-7	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
076_LMW-7	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	J
076_LMW-7	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
074_DUP-1	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	J
074_DUP-1	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	J
074_DUP-1	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
080_LMW-9	E537(M)	335-76-2	PERFLUORODECANOIC ACID (PFDA)	J
080_LMW-9	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
081_LMW-4	E537(M)	335-76-2	PERFLUORODECANOIC ACID (PFDA)	J
081_LMW-4	E537(M)	376-06-7	PERFLUOROTETRADECANOIC ACID (PFTA)	J
082_LMW-8	E537(M)	335-76-2	PERFLUORODECANOIC ACID (PFDA)	J
082_LMW-8	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
083_LMW-3	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	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.

L2037563

VOCs by SW-846 Method 8260C

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) for batch WG1410014 exhibited a percent recovery below the lower control limit (LCL) for vinyl acetate (63%, 68%). The associated results in sample 073_LMW-1, 074_DUP-1, 075_LMW-6, and 076_LMW-7 are qualified as "UJ" based on potential low bias.

The LCS for batch WG1410014 exhibited a percent recovery below the LCL for trans-1,4-dichloro-2-butene (69%). The associated results in sample 073_LMW-1, 074_DUP-1, 075_LMW-6, and 076_LMW-7 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1411227 exhibited relative percent differences (RPDs) above the control limit for sec-butylbenzene (22%), tert-butylbenzene (23%), n-propylbenzene (24%), 1,3,5-trimethylbenzene (22%), and p-ethyltoluene (23%). The associated results in sample 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration (ICAL) for instrument VOA108 exhibited a response factor (RF) below the control limit for 1,4-dioxane (0.002). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, 074_DUP-1, 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 9/15/2020 at 08:10 exhibited %Ds above the control limit for bromomethane (-34.8%), chloroethane (-27.9%), acetone (29.8%), methyl tert-butyl ether (23.7%), acrylonitrile (25.8%), vinyl acetate (36.5%), 4-methyl-2-pentanone (29.3%), 1,2-dibromoethane (20.2%), 2-hexanone (38.9%), 1,2,3-trichloropropane (23.4%), trans-1,4-dichloro-2-butene (31.1%), 1,2-dibromo-3-chloropropane (26%), and naphthalene (28.1%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/16/2020 at 17:18 exhibited %Ds above the control limit for 1,2-dibromo-3-chloropropane (27.8%), 1,4-dioxane (32%), 2-hexanone (36%), 4-methyl-2-pentanone (28.2%), acetone (27.7%), acrylonitrile (28.2%), bromoform (20.9%), chloroethane (-35.8%), dichlorodifluoromethane (-36.5%), methyl tert-butyl ether (29.2%), naphthalene (30%), trans-1,3-dichloropropene (20.2%), and vinyl acetate (30.3%). The associated results in sample 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "J" or "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM

The CCV analyzed on 9/14/2020 at 21:08 exhibited %Ds above the control limit for bis(2-chloroisopropyl)ether (21.9%), 2-nitrophenol (-26.9%), and azobenzene (20.1%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/17/2020 at 09:27 exhibited %Ds above the control limit for benzoic acid (-24.5%), hexachlorobutadiene (-24.3%), hexachlorocyclopentadiene (-33.3%), 2,4-dinitrophenol (-28%), 4,6-dinitro-o-cresol (-26.7%), pentachlorophenol (-23.1%), di-n-octylphthalate (21.6%), and 1,2,4,5-tetrachlorobenzene (-21.2%). The associated results in sample 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/16/2020 at 20:15 exhibited a %D above the control limit for pentachlorophenol (-28.3%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "UJ" based on potential indeterminate bias.

The LCSD for batch WG1409590 exhibited percent recoveries above the upper control limit (UCL) for indeno(1,2,3-cd)pyrene (142%) and pentachlorophenol (142%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "J" based on potential high bias.

The LCS for batch WG1410449 exhibited a percent recovery below the LCL for 2,4-dimethylpheol (16%). The associated results in sample 080_LMW-9, 081_LMW-4, and 082_LMW-8 are qualified as "UJ" based on potential low bias.

The LCSD for batch WG1410449 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample 080_LMW-9, 081_LMW-4, and 082_LMW-8 are qualified as "UJ" based on potential low bias.

The LCS for batch WG1410776 exhibited a percent recovery below the LCL for 4-chloroaniline (33%). The associated results in sample 083_LMW-3 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1410776 exhibited RPDs above the control limit for 4-chloroaniline (48%) and 2,4-dimethylphenol (54%). The associated results in sample 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M

The CCV analyzed on 9/18/2020 at 09:53 exhibited %Ds above the control limit for perfluorodecanesulfonic acid (64.1%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (38.6%). The associated results in sample 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/20/2020 at 16:45 exhibited %Ds above the control limit for 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (43.8%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (41.6%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "J" or "UJ" based on potential indeterminate bias.

The method blank (MB) for batch WG1410994 exhibited a detection of perfluorohexanoic acid (0.348 ng/l). The associated results in sample 076_LMW-7 are qualified as "U" at the sample concentration based on potential blank contamination.

The laboratory noted the ratio of quantifier ion response to qualifier ion response recovered outside of laboratory criteria for samples 073_LMW-1, 075_LMW-6, 076_LMW-7, 074_DUP-1, 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3. The associated results in samples 073_LMW-1, 075_LMW-6, 076_LMW-7, 074_DUP-1, 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "J" based on indeterminate bias.

Herbicides by SW-846 Method 8151A

The CCV analyzed on 9/16/2020 at 09:37 exhibited a %D above the control limit for 2,4,5-t (-19.5%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "UJ" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B

The LCS/LCSD for batch WG1410060 exhibited RPDs above the control limit for 4,4'-DDD (46%), 4,4'-DDE (46%), 4,4'-DDT (46%), aldrin (46%), alpha-BHC (38%), beta-BHC (33%), delta-BHC (40%), dieldrin (45%), endosulfan I (44%), endosulfan II (40%), endosulfan sulfate (43%), endrin (46%), endrin aldehyde (39%), endrin ketone (45%), heptachlor (43%), heptachlor epoxide (43%), lindane (40%), methoxychlor (43%), cis-chlordane (44%), and trans-chlordane (44%). The associated results in sample 073_LMW-1, 075_LMW-6, 076_LMW-7, and 074_DUP-1 are qualified as "UJ" based on potential indeterminate bias.

The LCS/LCSD for batch WG1410365 exhibited RPDs above the control limit for 4,4'-DDD (40%), 4,4'-DDE (40%), 4,4'-DDT (35%), aldrin (37%), alpha-BHC (29%), beta-BHC (31%), delta-BHC (33%), dieldrin (37%), endosulfan I (39%), endosulfan II (27%), endrin (37%), endrin aldehyde (42%), endrin ketone (35%), heptachlor (35%), heptachlor epoxide (39%), lindane (31%), methoxychlor (32%), cis-chlordane (33%), and trans-chlordane (29%). The associated results in sample 080_LMW-9, 081_LMW-4, 082_LMW-8, and 083_LMW-3 are qualified as "UJ" based on potential indeterminate bias.

Total and Dissolved Metals by SW-846 Method 6020B

The field blank (FB) (078_FB-1) exhibited a detection of dissolved antimony (0.00051 mg/L). The associated results in sample 073_LMW-1, 075_LMW-6, and 076_LMW-7 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1410068 exhibited a detection of dissolved thallium (0.00016 mg/L). The associated results in sample 073_LMW-1 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1410661 exhibited a detection of dissolved thallium (0.00014 mg/L). The associated results in sample 080_LMW-9 are qualified as "U" at the reporting limit based on potential blank contamination.

The matrix spike (MS) performed on sample 080_LMW-9 exhibited percent recoveries below the LCL for total calcium (60%) and total sodium (69%). The associated results in sample 080_LMW-9 are qualified as "J" 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.

L2037563

VOCs by SW-846 Method 8260C

The MB for batch WG1411227 exhibited a detection of trichloroethene (0.19 ug/L). The associated results are non-detections. No qualification is necessary.

The LCS for batch WG1411227 exhibited a percent recovery above the UCL for chloroethane (140%). The associated results are non-detections. No qualification is necessary.

The MS/matrix spike duplicate (MSD) for batch 080_LMW-9 exhibited RPDs above the control limit for 1,1,2,2-tetrachloroethane (28%), 1,1-dichloroethane (29%), 1,1-dichloroethene (22%), 1,1-dichloropropene (30%), 1,2,3-trichloropropane (23%), 1,2,4,5-tetramethylbenzene (21%), 1,2,4-trimethylbenzene (21%), 1,2-dichloropropane (22%), 1,3,5-trimethylbenzene (21%), 1,4-dichlorobenzene (24%), bromobenzene (23%), carbon tetrachloride (26%), chloroform (22%), isopropylbenzene (29%), tetrachloroethene (21%), toluene (23%), cis-1,3-dichloropropene (27%), n-butylbenzene (23%), n-propylbenzene (25%), o-chlorotoluene (25%), p-chlorotoluene (25%), 1,4-diethylbenzene (23%), 4-ethyltoluene (34%), p-isopropyltoluene (23%), p/m-xylene

(22%), sec-butylbenzene (21%), tert-butylbenzene (28%), and trans-1,2-dichloroethene (21%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS for batch 080_LMW-9 exhibited percent recoveries below the LCL for tetrachloroethene (69%), vinyl acetate (68%), 1,2,4-trichlorobenzene (68%), and trans-1,4-dichloro-2-butene (61%). Organic results are not qualified on the basis of MSs alone. No qualification is necessary.

The MSD for batch 080_LMW-9 exhibited a percent recovery above the UCL for dichlorodifluoromethane (150%). Organic results are not qualified on the basis of MSs alone. No qualification is necessary.

The CCV analyzed on 9/15/2020 at 08:10 exhibited a RF below the control limit for 1,4-dioxane (0.00182). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/16/2020 at 17:18 exhibited a RF below the control limit for 1,4-dioxane (0.00149). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM

The MB for batch WG1409589 exhibited a detection of dimethyl phthalate (2.2 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1410144 exhibited detections of benzo(a)anthracene (0.09 ug/L), benzo(a)pyrene (0.07 ug/L), benzo(b)fluoranthene (0.09 ug/L), benzo(ghi)perylene (0.06 ug/L), benzo(k)fluoranthene (0.04 ug/L), chrysene (0.1 ug/L), fluoranthene (0.1 ug/L), indeno(1,2,3-cd)pyrene (0.05 ug/L), phenanthrene (0.03 ug/L), and pyrene (0.14 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1410779-1 exhibited detections of 2-methylnaphthalene (0.03 ug/L) and naphthalene (0.07 ug/L). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1410449 exhibited a RPD above the control limit for 2,4-dimethylpheol (79%). The associated results were previously qualified. No further action is necessary.

The MS/MSD for batch 080_LMW-9 exhibited RPDs above the control limit for hexachlorocyclopentadiene (33%), 4-chloroaniline (46%), 2-nitroaniline (33%), 3-nitroaniline (38%), and benzoic acid (36%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS for batch 080_LMW-9 exhibited percent recoveries below the LCL for 4-chloroaniline (38%) and 4-nitroaniline (50%). Organic results are not qualified on the basis of MSs alone. No qualification is necessary.

Pesticides by SW-846 Method 8081B

The LCS for batch WG1410365 exhibited a percent recovery above the UCL for methoxychlor (154%). The associated results were previously qualified. No further action is necessary.

COMMENTS:

One 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 groundwater. The following field duplicate and parent sample pairs were compared to the precision criteria:

- 073_LMW-1 and 074_DUP-1

The field duplicate and parent sample (073_LMW-1 and 074_DUP-1) exhibited a RPD above the control limit for perfluorobutanesulfonic acid (34.2%). The associated results are qualified as "J" based on potential indeterminate bias.

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:

Joe Conboy
Staff Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: September 24, 2020

Re: Data Usability Summary Report
For 280 West 155th Street Development
August and September Soil Samples
Langan Project No.: 100765102

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in August and September 2020 by Langan Engineering and Environmental Services ("Langan") at the 280 West 155th Street Development site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), herbicides, 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 and 8270D SIM
- PFAS by USEPA Method 537M
- Herbicides by SW-846 Method 8151A
- 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*
L2035280	L2035280-01	030_LSB-44_3.0-5.0	8/27/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-02	031_LSB-44_12.0-14.0	8/27/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-03	032_DUP-1	8/27/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-04	033_LSB-49_9.5-11.5	8/27/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-05	034_FB_08272020	8/27/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, SVOC SIM, PFAS, CrVI, VOCs, CrIII
L2035280	L2035280-06	035_LSB-52_9.5-11.5	8/27/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-08	037_LSB-43_2.5-4.5	8/28/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-09	038_LSB-43_12.0-14.0	8/28/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-10	039_LSB-48_8.0-10.0	8/28/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-11	040_LSB-42_1.5-3.5	8/28/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-12	041_LSB-42_12.0-14.0	8/28/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-13	042_LSB-50_9.5-11.5	8/28/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-14	043_LSB-53_9.5-11.5	8/28/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-15	044_LSB-42_7.5-9.5	8/28/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-16	045_LSB-54_9.5-11.5	8/28/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-17	046_TB_08282020	8/28/2020	VOCs

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2035280	L2035280-18	047_LSB-41_4.0-6.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-19	048_LSB-41_12.0-14.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-20	049_LSB-47_8.5-10.5	8/31/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-21	050_LSB-37_1.0-3.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-22	051_LSB-37_12.0-14.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-23	052_FB_08312020	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, SVOC SIM, PFAS, CrVI, VOCs, CrIII
L2035280	L2035280-24	053_LSB-40_1.0-3.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-25	054_LSB-40_12.0-14.0	8/31/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-26	055_LSB-46_6.0-8.0	8/31/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-27	056_LSB-45_7.5-9.5	8/31/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-28	057_LSB-41_7.5-9.5	8/31/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-29	058_LSB-40_6.0-8.0	8/31/2020	PCBS, SVOCs, VOCs, %S
L2035280	L2035280-30	059_TB_08312020	8/31/2020	VOCs
L2035280	L2035280-31	060_LSB-36_1.0-3.0	9/1/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-32	061_LSB-36_12.0-14.0	9/1/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-33	062_LSB-38_2.0-4.0	9/1/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-34	063_LSB-38_12.0-14.0	9/1/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2035280	L2035280-35	064_TB_09012020	9/1/2020	VOCs
L2035280	L2035280-36	065_LSB-39_1.0-3.0	9/2/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-37	066_LSB-39_12.0-14.0	9/2/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-38	067_DUP-2	9/2/2020	Metals, Mercury, Pesticides, PCBs, Herbicides, SVOCs, PFAS, CrVI, VOCs, CrIII, %S
L2035280	L2035280-39	068_TB_09022020	9/2/2020	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-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-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), 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/laboratory control sample duplicates (LCS/LCSD), system monitoring compounds, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate (MS/MSD) recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, method blank (MB) sample results, trip blank (TB) sample results, and field blank (FB) 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***
030_LSB-44_3.0-5.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
030_LSB-44_3.0-5.0	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
030_LSB-44_3.0-5.0	SW8260C	75-25-2	BROMOFORM	UJ
030_LSB-44_3.0-5.0	SW8260C	75-15-0	CARBON DISULFIDE	UJ
030_LSB-44_3.0-5.0	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
030_LSB-44_3.0-5.0	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
030_LSB-44_3.0-5.0	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
030_LSB-44_3.0-5.0	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
030_LSB-44_3.0-5.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
030_LSB-44_3.0-5.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
030_LSB-44_3.0-5.0	E537(M)	307-24-4	PERFLUOROHEXANOIC ACID (PFHXA)	U (0.5)
031_LSB-44_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
031_LSB-44_12.0-14.0	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
031_LSB-44_12.0-14.0	SW8081B	72-54-8	4,4'-DDD	UJ
031_LSB-44_12.0-14.0	SW8081B	72-55-9	4,4'-DDE	UJ
031_LSB-44_12.0-14.0	SW8081B	50-29-3	4,4'-DDT	UJ
031_LSB-44_12.0-14.0	SW8081B	309-00-2	ALDRIN	UJ
031_LSB-44_12.0-14.0	SW8081B	319-84-6	ALPHA-BHC	UJ
031_LSB-44_12.0-14.0	SW8081B	319-85-7	BETA-BHC	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
031_LSB-44_12.0-14.0	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
031_LSB-44_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
031_LSB-44_12.0-14.0	6010D	7440-70-2	CALCIUM, TOTAL	J
031_LSB-44_12.0-14.0	SW8260C	75-15-0	CARBON DISULFIDE	UJ
031_LSB-44_12.0-14.0	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
031_LSB-44_12.0-14.0	SW8081B	57-74-9	CHLORDANE	UJ
031_LSB-44_12.0-14.0	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
031_LSB-44_12.0-14.0	6010D	7440-50-8	COPPER, TOTAL	J
031_LSB-44_12.0-14.0	SW8081B	319-86-8	DELTA-BHC	UJ
031_LSB-44_12.0-14.0	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
031_LSB-44_12.0-14.0	SW8081B	60-57-1	DIELDRIN	UJ
031_LSB-44_12.0-14.0	SW8081B	959-98-8	ENDOSULFAN I	UJ
031_LSB-44_12.0-14.0	SW8081B	33213-65-9	ENDOSULFAN II	UJ
031_LSB-44_12.0-14.0	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
031_LSB-44_12.0-14.0	SW8081B	72-20-8	ENDRIN	UJ
031_LSB-44_12.0-14.0	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
031_LSB-44_12.0-14.0	SW8081B	53494-70-5	ENDRIN KETONE	UJ
031_LSB-44_12.0-14.0	SW8270D	206-44-0	FLUORANTHENE	J
031_LSB-44_12.0-14.0	SW8081B	76-44-8	HEPTACHLOR	UJ
031_LSB-44_12.0-14.0	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
031_LSB-44_12.0-14.0	6010D	7439-92-1	LEAD, TOTAL	J
031_LSB-44_12.0-14.0	SW8081B	58-89-9	LINDANE	UJ
031_LSB-44_12.0-14.0	SW7471B	7439-97-6	MERCURY, TOTAL	J
031_LSB-44_12.0-14.0	SW8081B	72-43-5	METHOXYCHLOR	UJ
031_LSB-44_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
031_LSB-44_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
031_LSB-44_12.0-14.0	SW8270D	85-01-8	PHENANTHRENE	J
031_LSB-44_12.0-14.0	SW8270D	129-00-0	PYRENE	J
031_LSB-44_12.0-14.0	SW8081B	8001-35-2	TOXAPHENE	UJ
031_LSB-44_12.0-14.0	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
031_LSB-44_12.0-14.0	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
031_LSB-44_12.0-14.0	6010D	7440-66-6	ZINC, TOTAL	J
032_DUP-1	SW8260C	123-91-1	1,4-DIOXANE	UJ
032_DUP-1	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
032_DUP-1	SW8081B	72-54-8	4,4'-DDD	UJ
032_DUP-1	SW8081B	72-55-9	4,4'-DDE	UJ
032_DUP-1	SW8081B	50-29-3	4,4'-DDT	UJ
032_DUP-1	SW8081B	309-00-2	ALDRIN	UJ
032_DUP-1	SW8081B	319-84-6	ALPHA-BHC	UJ
032_DUP-1	SW8081B	319-85-7	BETA-BHC	UJ
032_DUP-1	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
032_DUP-1	SW8260C	75-25-2	BROMOFORM	UJ
032_DUP-1	6010D	7440-70-2	CALCIUM, TOTAL	J
032_DUP-1	SW8260C	75-15-0	CARBON DISULFIDE	UJ
032_DUP-1	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
032_DUP-1	SW8081B	57-74-9	CHLORDANE	UJ
032_DUP-1	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
032_DUP-1	6010D	7440-50-8	COPPER, TOTAL	J
032_DUP-1	SW8081B	319-86-8	DELTA-BHC	UJ
032_DUP-1	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
032_DUP-1	SW8081B	60-57-1	DIELDRIN	UJ
032_DUP-1	SW8081B	959-98-8	ENDOSULFAN I	UJ
032_DUP-1	SW8081B	33213-65-9	ENDOSULFAN II	UJ
032_DUP-1	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
032_DUP-1	SW8081B	72-20-8	ENDRIN	UJ
032_DUP-1	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
032_DUP-1	SW8081B	53494-70-5	ENDRIN KETONE	UJ
032_DUP-1	SW8270D	206-44-0	FLUORANTHENE	J
032_DUP-1	SW8081B	76-44-8	HEPTACHLOR	UJ
032_DUP-1	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
032_DUP-1	6010D	7439-92-1	LEAD, TOTAL	J
032_DUP-1	SW8081B	58-89-9	LINDANE	UJ
032_DUP-1	SW7471B	7439-97-6	MERCURY, TOTAL	J
032_DUP-1	SW8081B	72-43-5	METHOXYCHLOR	UJ
032_DUP-1	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
032_DUP-1	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
032_DUP-1	SW8270D	85-01-8	PHENANTHRENE	J
032_DUP-1	SW8270D	129-00-0	PYRENE	J
032_DUP-1	6010D	7440-23-5	SODIUM, TOTAL	U (211)

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
032_DUP-1	SW8081B	8001-35-2	TOXAPHENE	UJ
032_DUP-1	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
032_DUP-1	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
032_DUP-1	6010D	7440-66-6	ZINC, TOTAL	J
033_LSB-49_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
035_LSB-52_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
035_LSB-52_9.5-11.5	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
035_LSB-52_9.5-11.5	SW8260C	75-25-2	BROMOFORM	UJ
035_LSB-52_9.5-11.5	SW8260C	75-15-0	CARBON DISULFIDE	UJ
035_LSB-52_9.5-11.5	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
035_LSB-52_9.5-11.5	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
035_LSB-52_9.5-11.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
037_LSB-43_2.5-4.5	SW8081B	50-29-3	4,4'-DDT	J
037_LSB-43_2.5-4.5	SW8081B	5103-74-2	TRANS-CHLORDANE	J
037_LSB-43_2.5-4.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
037_LSB-43_2.5-4.5	SW8260C	75-25-2	BROMOFORM	UJ
037_LSB-43_2.5-4.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
037_LSB-43_2.5-4.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
037_LSB-43_2.5-4.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
037_LSB-43_2.5-4.5	SW8270D	100-02-7	4-NITROPHENOL	UJ
037_LSB-43_2.5-4.5	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
037_LSB-43_2.5-4.5	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
037_LSB-43_2.5-4.5	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
037_LSB-43_2.5-4.5	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
037_LSB-43_2.5-4.5	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
038_LSB-43_12.0-14.0	6010D	7440-23-5	SODIUM, TOTAL	U (211)
038_LSB-43_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
039_LSB-48_8.0-10.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
039_LSB-48_8.0-10.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
039_LSB-48_8.0-10.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
039_LSB-48_8.0-10.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
039_LSB-48_8.0-10.0	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
040_LSB-42_1.5-3.5	SW8081B	5103-74-2	TRANS-CHLORDANE	J
040_LSB-42_1.5-3.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
040_LSB-42_1.5-3.5	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
040_LSB-42_1.5-3.5	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
040_LSB-42_1.5-3.5	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
041_LSB-42_12.0-14.0	6010D	7440-23-5	SODIUM, TOTAL	U (180)
041_LSB-42_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
041_LSB-42_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
041_LSB-42_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
041_LSB-42_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
041_LSB-42_12.0-14.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
041_LSB-42_12.0-14.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
041_LSB-42_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
041_LSB-42_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
041_LSB-42_12.0-14.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
041_LSB-42_12.0-14.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
041_LSB-42_12.0-14.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
041_LSB-42_12.0-14.0	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
041_LSB-42_12.0-14.0	E537(M)	39108-34-4	1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	UJ
041_LSB-42_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
041_LSB-42_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
042_LSB-50_9.5-11.5	SW8260C	630-20-6	1,1,1,2-TETRACHLOROETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	79-00-5	1,1,2-TRICHLOROETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
042_LSB-50_9.5-11.5	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
042_LSB-50_9.5-11.5	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	142-28-9	1,3-DICHLOROPROPANE	UJ
042_LSB-50_9.5-11.5	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ

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042_LSB-50_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
042_LSB-50_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
042_LSB-50_9.5-11.5	SW8260C	78-93-3	2-BUTANONE	J
042_LSB-50_9.5-11.5	SW8260C	591-78-6	2-HEXANONE	UJ
042_LSB-50_9.5-11.5	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
042_LSB-50_9.5-11.5	SW8260C	67-64-1	ACETONE	J
042_LSB-50_9.5-11.5	SW8260C	67-64-1	ACETONE	J
042_LSB-50_9.5-11.5	SW8260C	108-86-1	BROMOBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	75-25-2	BROMOFORM	UJ
042_LSB-50_9.5-11.5	SW8260C	75-25-2	BROMOFORM	UJ
042_LSB-50_9.5-11.5	SW8260C	108-90-7	CHLOROBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
042_LSB-50_9.5-11.5	SW8260C	100-41-4	ETHYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
042_LSB-50_9.5-11.5	SW8260C	91-20-3	NAPHTHALENE	J
042_LSB-50_9.5-11.5	SW8260C	91-20-3	NAPHTHALENE	J
042_LSB-50_9.5-11.5	SW8260C	100-42-5	STYRENE	UJ
042_LSB-50_9.5-11.5	SW8260C	127-18-4	TETRACHLOROETHENE	UJ
042_LSB-50_9.5-11.5	SW8260C	108-88-3	TOLUENE	UJ
042_LSB-50_9.5-11.5	SW8260C	104-51-8	N-BUTYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
042_LSB-50_9.5-11.5	SW8260C	95-47-6	O-XYLENE	UJ
042_LSB-50_9.5-11.5	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
042_LSB-50_9.5-11.5	SW8260C	99-87-6	P-ISOPROPYLTOLUENE	J
042_LSB-50_9.5-11.5	SW8260C	99-87-6	P-ISOPROPYLTOLUENE	J
042_LSB-50_9.5-11.5	SW8260C	179601-23-1	P/M-XYLENE	UJ
042_LSB-50_9.5-11.5	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
042_LSB-50_9.5-11.5	SW8260C	98-06-6	TERT-BUTYLBENZENE	J
042_LSB-50_9.5-11.5	SW8260C	98-06-6	TERT-BUTYLBENZENE	J
042_LSB-50_9.5-11.5	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
042_LSB-50_9.5-11.5	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
043_LSB-53_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
044_LSB-42_7.5-9.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
045_LSB-54_9.5-11.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
045_LSB-54_9.5-11.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
045_LSB-54_9.5-11.5	SW8270D	100-02-7	4-NITROPHENOL	UJ
045_LSB-54_9.5-11.5	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
045_LSB-54_9.5-11.5	SW8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
047_LSB-41_4.0-6.0	6010D	7429-90-5	ALUMINUM, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7440-38-2	ARSENIC, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7440-39-3	BARIUM, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7440-70-2	CALCIUM, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7440-47-3	CHROMIUM, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7440-50-8	COPPER, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7439-89-6	IRON, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7439-95-4	MAGNESIUM, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7439-96-5	MANGANESE, TOTAL	J
047_LSB-41_4.0-6.0	6010D	7782-49-2	SELENIUM, TOTAL	U (1.89)
047_LSB-41_4.0-6.0	6010D	7440-28-0	THALLIUM, TOTAL	UJ
047_LSB-41_4.0-6.0	6010D	7440-62-2	VANADIUM, TOTAL	J
047_LSB-41_4.0-6.0	SW7471B	7439-97-6	MERCURY, TOTAL	J
047_LSB-41_4.0-6.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
047_LSB-41_4.0-6.0	SW8270D	123-91-1	1,4-DIOXANE	UJ
047_LSB-41_4.0-6.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
047_LSB-41_4.0-6.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
047_LSB-41_4.0-6.0	SW8270D	118-74-1	HEXACHLOROBENZENE	UJ
047_LSB-41_4.0-6.0	SW8270D	98-95-3	NITROBENZENE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
047_LSB-41_4.0-6.0	SW8270D	87-86-5	PENTACHLOROPHENOL	UJ
047_LSB-41_4.0-6.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
047_LSB-41_4.0-6.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
047_LSB-41_4.0-6.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
047_LSB-41_4.0-6.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
048_LSB-41_12.0-14.0	6010D	7782-49-2	SELENIUM, TOTAL	U (2.42)
048_LSB-41_12.0-14.0	SW8081B	72-55-9	4,4'-DDE	UJ
048_LSB-41_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
048_LSB-41_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
048_LSB-41_12.0-14.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
048_LSB-41_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
048_LSB-41_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
048_LSB-41_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
048_LSB-41_12.0-14.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
048_LSB-41_12.0-14.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
049_LSB-47_8.5-10.5	SW8260C	630-20-6	1,1,1,2-TETRACHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	630-20-6	1,1,1,2-TETRACHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	71-55-6	1,1,1-TRICHLOROETHANE	UJ

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049_LSB-47_8.5-10.5	SW8260C	71-55-6	1,1,1-TRICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-00-5	1,1,2-TRICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-00-5	1,1,2-TRICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-35-4	1,1-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	563-58-6	1,1-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	563-58-6	1,1-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	107-06-2	1,2-DICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	107-06-2	1,2-DICHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	540-59-0	1,2-DICHLOROETHENE (TOTAL)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
049_LSB-47_8.5-10.5	SW8260C	540-59-0	1,2-DICHLOROETHENE (TOTAL)	UJ
049_LSB-47_8.5-10.5	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	142-28-9	1,3-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	142-28-9	1,3-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	542-75-6	1,3-DICHLOROPROPENE, TOTAL	UJ
049_LSB-47_8.5-10.5	SW8260C	542-75-6	1,3-DICHLOROPROPENE, TOTAL	UJ
049_LSB-47_8.5-10.5	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
049_LSB-47_8.5-10.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
049_LSB-47_8.5-10.5	SW8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
049_LSB-47_8.5-10.5	SW8260C	78-93-3	2-BUTANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	78-93-3	2-BUTANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	591-78-6	2-HEXANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	591-78-6	2-HEXANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
049_LSB-47_8.5-10.5	SW8260C	67-64-1	ACETONE	UJ
049_LSB-47_8.5-10.5	SW8260C	67-64-1	ACETONE	J
049_LSB-47_8.5-10.5	SW8260C	107-13-1	ACRYLONITRILE	UJ
049_LSB-47_8.5-10.5	SW8260C	107-13-1	ACRYLONITRILE	UJ
049_LSB-47_8.5-10.5	SW8260C	71-43-2	BENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	71-43-2	BENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-86-1	BROMOBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-86-1	BROMOBENZENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
049_LSB-47_8.5-10.5	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	74-97-5	BROMOCHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-27-4	BROMODICHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-25-2	BROMOFORM	UJ
049_LSB-47_8.5-10.5	SW8260C	75-25-2	BROMOFORM	UJ
049_LSB-47_8.5-10.5	SW8260C	74-83-9	BROMOMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	74-83-9	BROMOMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-15-0	CARBON DISULFIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-15-0	CARBON DISULFIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-90-7	CHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-90-7	CHLOROBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-00-3	CHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-00-3	CHLOROETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	67-66-3	CHLOROFORM	UJ
049_LSB-47_8.5-10.5	SW8260C	67-66-3	CHLOROFORM	UJ
049_LSB-47_8.5-10.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	74-95-3	DIBROMOMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	74-95-3	DIBROMOMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	60-29-7	ETHYL ETHER	UJ
049_LSB-47_8.5-10.5	SW8260C	60-29-7	ETHYL ETHER	UJ
049_LSB-47_8.5-10.5	SW8260C	100-41-4	ETHYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	100-41-4	ETHYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ

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049_LSB-47_8.5-10.5	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
049_LSB-47_8.5-10.5	SW8260C	98-82-8	ISOPROPYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	98-82-8	ISOPROPYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
049_LSB-47_8.5-10.5	SW8260C	1634-04-4	METHYL TERT BUTYL ETHER	UJ
049_LSB-47_8.5-10.5	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-09-2	METHYLENE CHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	91-20-3	NAPHTHALENE	J
049_LSB-47_8.5-10.5	SW8260C	91-20-3	NAPHTHALENE	J
049_LSB-47_8.5-10.5	SW8260C	100-42-5	STYRENE	UJ
049_LSB-47_8.5-10.5	SW8260C	100-42-5	STYRENE	UJ
049_LSB-47_8.5-10.5	SW8260C	127-18-4	TETRACHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	127-18-4	TETRACHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-88-3	TOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-88-3	TOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-01-6	TRICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	79-01-6	TRICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-05-4	VINYL ACETATE	UJ
049_LSB-47_8.5-10.5	SW8260C	108-05-4	VINYL ACETATE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-01-4	VINYL CHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	75-01-4	VINYL CHLORIDE	UJ
049_LSB-47_8.5-10.5	SW8260C	1330-20-7	XYLENE (TOTAL)	UJ
049_LSB-47_8.5-10.5	SW8260C	1330-20-7	XYLENE (TOTAL)	J
049_LSB-47_8.5-10.5	SW8260C	156-59-2	CIS-1,2-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	156-59-2	CIS-1,2-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	104-51-8	N-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	104-51-8	N-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	103-65-1	N-PROPYLBENZENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
049_LSB-47_8.5-10.5	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-49-8	O-CHLOROTOLUENE	J
049_LSB-47_8.5-10.5	SW8260C	95-49-8	O-CHLOROTOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-47-6	O-XYLENE	UJ
049_LSB-47_8.5-10.5	SW8260C	95-47-6	O-XYLENE	J
049_LSB-47_8.5-10.5	SW8260C	106-43-4	P-CHLOROTOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	106-43-4	P-CHLOROTOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	105-05-5	1,4-DIETHYLBENZENE	UJ
049_LSB-47_8.5-10.5	SW8260C	105-05-5	1,4-DIETHYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	622-96-8	4-ETHYLTOLUENE	J
049_LSB-47_8.5-10.5	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	99-87-6	P-ISOPROPYLTOLUENE	J
049_LSB-47_8.5-10.5	SW8260C	99-87-6	P-ISOPROPYLTOLUENE	UJ
049_LSB-47_8.5-10.5	SW8260C	179601-23-1	P/M-XYLENE	UJ
049_LSB-47_8.5-10.5	SW8260C	179601-23-1	P/M-XYLENE	J
049_LSB-47_8.5-10.5	SW8260C	135-98-8	SEC-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	135-98-8	SEC-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	98-06-6	TERT-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	98-06-6	TERT-BUTYLBENZENE	J
049_LSB-47_8.5-10.5	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	UJ
049_LSB-47_8.5-10.5	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
049_LSB-47_8.5-10.5	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
049_LSB-47_8.5-10.5	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
050_LSB-37_1.0-3.0	6010D	7782-49-2	SELENIUM, TOTAL	U (1.82)
050_LSB-37_1.0-3.0	6010D	7440-23-5	SODIUM, TOTAL	U (182)
050_LSB-37_1.0-3.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
050_LSB-37_1.0-3.0	SW8260C	75-25-2	BROMOFORM	UJ
050_LSB-37_1.0-3.0	SW8260C	74-87-3	CHLOROMETHANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
050_LSB-37_1.0-3.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
050_LSB-37_1.0-3.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
050_LSB-37_1.0-3.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
050_LSB-37_1.0-3.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
050_LSB-37_1.0-3.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
051_LSB-37_12.0-14.0	6010D	7440-23-5	SODIUM, TOTAL	U (182)
051_LSB-37_12.0-14.0	SW8081B	72-55-9	4,4'-DDE	UJ
051_LSB-37_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
051_LSB-37_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
051_LSB-37_12.0-14.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
051_LSB-37_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
051_LSB-37_12.0-14.0	SW8270D	87-86-5	PENTACHLOROPHENOL	UJ
051_LSB-37_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
051_LSB-37_12.0-14.0	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	UJ
053_LSB-40_1.0-3.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
053_LSB-40_1.0-3.0	SW8260C	75-25-2	BROMOFORM	UJ
053_LSB-40_1.0-3.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
053_LSB-40_1.0-3.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
053_LSB-40_1.0-3.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
053_LSB-40_1.0-3.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
053_LSB-40_1.0-3.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
053_LSB-40_1.0-3.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
054_LSB-40_12.0-14.0	6010D	7782-49-2	SELENIUM, TOTAL	U (1.94)
054_LSB-40_12.0-14.0	6010D	7440-23-5	SODIUM, TOTAL	U (194)
054_LSB-40_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
054_LSB-40_12.0-14.0	SW8260C	75-25-2	BROMOFORM	UJ
054_LSB-40_12.0-14.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
054_LSB-40_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
054_LSB-40_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
054_LSB-40_12.0-14.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
055_LSB-46_6.0-8.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
055_LSB-46_6.0-8.0	SW8260C	75-25-2	BROMOFORM	UJ
055_LSB-46_6.0-8.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
055_LSB-46_6.0-8.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
055_LSB-46_6.0-8.0	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
055_LSB-46_6.0-8.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
055_LSB-46_6.0-8.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
055_LSB-46_6.0-8.0	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
055_LSB-46_6.0-8.0	SW8270D	106-47-8	4-CHLOROANILINE	UJ
055_LSB-46_6.0-8.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
055_LSB-46_6.0-8.0	SW8270D	92-52-4	BIPHENYL	UJ
055_LSB-46_6.0-8.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
055_LSB-46_6.0-8.0	SW8270D	98-95-3	NITROBENZENE	UJ
056_LSB-45_7.5-9.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
056_LSB-45_7.5-9.5	SW8260C	75-25-2	BROMOFORM	UJ
056_LSB-45_7.5-9.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
056_LSB-45_7.5-9.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
056_LSB-45_7.5-9.5	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
056_LSB-45_7.5-9.5	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
056_LSB-45_7.5-9.5	SW8270D	88-75-5	2-NITROPHENOL	UJ
056_LSB-45_7.5-9.5	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
056_LSB-45_7.5-9.5	SW8270D	106-47-8	4-CHLOROANILINE	UJ
056_LSB-45_7.5-9.5	SW8270D	100-02-7	4-NITROPHENOL	UJ
056_LSB-45_7.5-9.5	SW8270D	92-52-4	BIPHENYL	J
056_LSB-45_7.5-9.5	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
056_LSB-45_7.5-9.5	SW8270D	98-95-3	NITROBENZENE	UJ
057_LSB-41_7.5-9.5	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	123-91-1	1,4-DIOXANE	UJ
057_LSB-41_7.5-9.5	SW8260C	67-64-1	ACETONE	J
057_LSB-41_7.5-9.5	SW8260C	75-25-2	BROMOFORM	UJ
057_LSB-41_7.5-9.5	SW8260C	74-87-3	CHLOROMETHANE	UJ
057_LSB-41_7.5-9.5	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
057_LSB-41_7.5-9.5	SW8260C	100-41-4	ETHYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	98-82-8	ISOPROPYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	91-20-3	NAPHTHALENE	J
057_LSB-41_7.5-9.5	SW8260C	1330-20-7	XYLENE (TOTAL)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
057_LSB-41_7.5-9.5	SW8260C	104-51-8	N-BUTYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	103-65-1	N-PROPYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	95-47-6	O-XYLENE	J
057_LSB-41_7.5-9.5	SW8260C	622-96-8	4-ETHYLTOLUENE	J
057_LSB-41_7.5-9.5	SW8260C	135-98-8	SEC-BUTYLBENZENE	J
057_LSB-41_7.5-9.5	SW8260C	98-06-6	TERT-BUTYLBENZENE	J
058_LSB-40_6.0-8.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
058_LSB-40_6.0-8.0	SW8260C	75-25-2	BROMOFORM	UJ
058_LSB-40_6.0-8.0	SW8260C	74-87-3	CHLOROMETHANE	UJ
058_LSB-40_6.0-8.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
058_LSB-40_6.0-8.0	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
058_LSB-40_6.0-8.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
058_LSB-40_6.0-8.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
058_LSB-40_6.0-8.0	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
058_LSB-40_6.0-8.0	SW8270D	106-47-8	4-CHLOROANILINE	UJ
058_LSB-40_6.0-8.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
058_LSB-40_6.0-8.0	SW8270D	92-52-4	BIPHENYL	UJ
058_LSB-40_6.0-8.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
058_LSB-40_6.0-8.0	SW8270D	98-95-3	NITROBENZENE	UJ
060_LSB-36_1.0-3.0	SW8081B	57-74-9	CHLORDANE	J
060_LSB-36_1.0-3.0	SW8081B	5103-74-2	TRANS-CHLORDANE	J
060_LSB-36_1.0-3.0	SW8151A	93-72-1	2,4,5-TP (SILVEX)	UJ
060_LSB-36_1.0-3.0	SW8151A	94-75-7	2,4-D	UJ
060_LSB-36_1.0-3.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
060_LSB-36_1.0-3.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
060_LSB-36_1.0-3.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
060_LSB-36_1.0-3.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
060_LSB-36_1.0-3.0	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	UJ
060_LSB-36_1.0-3.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
061_LSB-36_12.0-14.0	SW8151A	93-72-1	2,4,5-TP (SILVEX)	UJ
061_LSB-36_12.0-14.0	SW8151A	94-75-7	2,4-D	UJ
061_LSB-36_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
061_LSB-36_12.0-14.0	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
061_LSB-36_12.0-14.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
061_LSB-36_12.0-14.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
061_LSB-36_12.0-14.0	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
061_LSB-36_12.0-14.0	SW8270D	106-47-8	4-CHLOROANILINE	UJ
061_LSB-36_12.0-14.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
061_LSB-36_12.0-14.0	SW8270D	92-52-4	BIPHENYL	UJ
061_LSB-36_12.0-14.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
061_LSB-36_12.0-14.0	SW8270D	98-95-3	NITROBENZENE	UJ
061_LSB-36_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
061_LSB-36_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
061_LSB-36_12.0-14.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
061_LSB-36_12.0-14.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
062_LSB-38_2.0-4.0	6010D	7440-50-8	COPPER, TOTAL	J
062_LSB-38_2.0-4.0	6010D	7440-23-5	SODIUM, TOTAL	U (174)
062_LSB-38_2.0-4.0	SW7196A	18540-29-9	CHROMIUM, HEXAVALENT	UJ
062_LSB-38_2.0-4.0	SW7471B	7439-97-6	MERCURY, TOTAL	J
062_LSB-38_2.0-4.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
062_LSB-38_2.0-4.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
062_LSB-38_2.0-4.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
062_LSB-38_2.0-4.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
062_LSB-38_2.0-4.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
063_LSB-38_12.0-14.0	6010D	7440-23-5	SODIUM, TOTAL	U (183)
063_LSB-38_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
063_LSB-38_12.0-14.0	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
063_LSB-38_12.0-14.0	SW8270D	51-28-5	2,4-DINITROPHENOL	UJ
063_LSB-38_12.0-14.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
063_LSB-38_12.0-14.0	SW8270D	534-52-1	4,6-DINITRO-O-CRESOL	UJ
063_LSB-38_12.0-14.0	SW8270D	106-47-8	4-CHLOROANILINE	UJ
063_LSB-38_12.0-14.0	SW8270D	100-02-7	4-NITROPHENOL	UJ
063_LSB-38_12.0-14.0	SW8270D	92-52-4	BIPHENYL	J
063_LSB-38_12.0-14.0	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
063_LSB-38_12.0-14.0	SW8270D	98-95-3	NITROBENZENE	UJ
063_LSB-38_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
063_LSB-38_12.0-14.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
063_LSB-38_12.0-14.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
063_LSB-38_12.0-14.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
065_LSB-39_1.0-3.0	SW8081B	72-54-8	4,4'-DDD	J
065_LSB-39_1.0-3.0	SW8081B	33213-65-9	ENDOSULFAN II	UJ
065_LSB-39_1.0-3.0	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
065_LSB-39_1.0-3.0	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
065_LSB-39_1.0-3.0	SW8081B	53494-70-5	ENDRIN KETONE	UJ
065_LSB-39_1.0-3.0	SW8081B	72-43-5	METHOXYCHLOR	UJ
065_LSB-39_1.0-3.0	SW8260C	630-20-6	1,1,1,2-TETRACHLOROETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	79-00-5	1,1,2-TRICHLOROETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-34-3	1,1-DICHLOROETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
065_LSB-39_1.0-3.0	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
065_LSB-39_1.0-3.0	SW8260C	106-93-4	1,2-DIBROMOETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	78-87-5	1,2-DICHLOROPROPANE	UJ
065_LSB-39_1.0-3.0	SW8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ

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065_LSB-39_1.0-3.0	SW8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	142-28-9	1,3-DICHLOROPROPANE	UJ
065_LSB-39_1.0-3.0	SW8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
065_LSB-39_1.0-3.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
065_LSB-39_1.0-3.0	SW8260C	78-93-3	2-BUTANONE	UJ
065_LSB-39_1.0-3.0	SW8260C	591-78-6	2-HEXANONE	UJ
065_LSB-39_1.0-3.0	SW8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
065_LSB-39_1.0-3.0	SW8260C	67-64-1	ACETONE	J
065_LSB-39_1.0-3.0	SW8260C	107-13-1	ACRYLONITRILE	UJ
065_LSB-39_1.0-3.0	SW8260C	108-86-1	BROMOBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-25-2	BROMOFORM	UJ
065_LSB-39_1.0-3.0	SW8260C	74-83-9	BROMOMETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-15-0	CARBON DISULFIDE	UJ
065_LSB-39_1.0-3.0	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
065_LSB-39_1.0-3.0	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
065_LSB-39_1.0-3.0	SW8260C	108-90-7	CHLOROBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-00-3	CHLOROETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	74-87-3	CHLOROMETHANE	U (7.4)
065_LSB-39_1.0-3.0	SW8260C	124-48-1	DIBROMOCHLOROMETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	100-41-4	ETHYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
065_LSB-39_1.0-3.0	SW8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
065_LSB-39_1.0-3.0	SW8260C	91-20-3	NAPHTHALENE	UJ
065_LSB-39_1.0-3.0	SW8260C	100-42-5	STYRENE	UJ
065_LSB-39_1.0-3.0	SW8260C	127-18-4	TETRACHLOROETHENE	UJ
065_LSB-39_1.0-3.0	SW8260C	108-88-3	TOLUENE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
065_LSB-39_1.0-3.0	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
065_LSB-39_1.0-3.0	SW8260C	104-51-8	N-BUTYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	103-65-1	N-PROPYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	95-47-6	O-XYLENE	UJ
065_LSB-39_1.0-3.0	SW8260C	622-96-8	4-ETHYLTOLUENE	UJ
065_LSB-39_1.0-3.0	SW8260C	99-87-6	P-ISOPROPYLTOLUENE	UJ
065_LSB-39_1.0-3.0	SW8260C	179601-23-1	P/M-XYLENE	UJ
065_LSB-39_1.0-3.0	SW8260C	135-98-8	SEC-BUTYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	98-06-6	TERT-BUTYLBENZENE	UJ
065_LSB-39_1.0-3.0	SW8260C	10061-02-6	TRANS-1,3-DICHLOROPROPENE	UJ
065_LSB-39_1.0-3.0	SW8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
065_LSB-39_1.0-3.0	SW8270D	123-91-1	1,4-DIOXANE	UJ
065_LSB-39_1.0-3.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
065_LSB-39_1.0-3.0	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
065_LSB-39_1.0-3.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
065_LSB-39_1.0-3.0	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
065_LSB-39_1.0-3.0	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
065_LSB-39_1.0-3.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
066_LSB-39_12.0-14.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
066_LSB-39_12.0-14.0	SW8270D	123-91-1	1,4-DIOXANE	UJ
066_LSB-39_12.0-14.0	SW8270D	88-75-5	2-NITROPHENOL	UJ
066_LSB-39_12.0-14.0	SW8081B	72-54-8	4,4'-DDD	J
066_LSB-39_12.0-14.0	6010D	7429-90-5	ALUMINUM, TOTAL	J

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066_LSB-39_12.0-14.0	6010D	7440-38-2	ARSENIC, TOTAL	J
066_LSB-39_12.0-14.0	6010D	7440-39-3	BARIUM, TOTAL	J
066_LSB-39_12.0-14.0	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
066_LSB-39_12.0-14.0	6010D	7440-70-2	CALCIUM, TOTAL	J
066_LSB-39_12.0-14.0	SW8260C	56-23-5	CARBON TETRACHLORIDE	UJ
066_LSB-39_12.0-14.0	6010D	7440-50-8	COPPER, TOTAL	J
066_LSB-39_12.0-14.0	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
066_LSB-39_12.0-14.0	SW8081B	33213-65-9	ENDOSULFAN II	UJ
066_LSB-39_12.0-14.0	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
066_LSB-39_12.0-14.0	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
066_LSB-39_12.0-14.0	SW8081B	53494-70-5	ENDRIN KETONE	UJ
066_LSB-39_12.0-14.0	6010D	7439-89-6	IRON, TOTAL	J
066_LSB-39_12.0-14.0	6010D	7439-92-1	LEAD, TOTAL	J
066_LSB-39_12.0-14.0	6010D	7439-95-4	MAGNESIUM, TOTAL	J
066_LSB-39_12.0-14.0	SW7471B	7439-97-6	MERCURY, TOTAL	J
066_LSB-39_12.0-14.0	SW8081B	72-43-5	METHOXYCHLOR	UJ
066_LSB-39_12.0-14.0	SW8260C	91-20-3	NAPHTHALENE	J
066_LSB-39_12.0-14.0	SW8270D	91-20-3	NAPHTHALENE	J
066_LSB-39_12.0-14.0	6010D	7440-02-0	NICKEL, TOTAL	J
066_LSB-39_12.0-14.0	E537(M)	375-95-1	PERFLUORONONANOIC ACID (PFNA)	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
066_LSB-39_12.0-14.0	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
066_LSB-39_12.0-14.0	E537(M)	TOTPFOAPFOS	PFOA/PFOS, TOTAL	UJ
066_LSB-39_12.0-14.0	SW8270D	85-01-8	PHENANTHRENE	J
066_LSB-39_12.0-14.0	6010D	7440-09-7	POTASSIUM, TOTAL	J
066_LSB-39_12.0-14.0	6010D	7440-22-4	SILVER, TOTAL	J
066_LSB-39_12.0-14.0	SW8081B	5103-74-2	TRANS-CHLORDANE	J
066_LSB-39_12.0-14.0	SW8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
067_DUP-2	SW8260C	123-91-1	1,4-DIOXANE	UJ
067_DUP-2	SW8270D	123-91-1	1,4-DIOXANE	UJ
067_DUP-2	SW8270D	88-75-5	2-NITROPHENOL	UJ
067_DUP-2	SW8081B	72-54-8	4,4'-DDD	J
067_DUP-2	SW8260C	67-64-1	ACETONE	UJ
067_DUP-2	6010D	7429-90-5	ALUMINUM, TOTAL	J
067_DUP-2	6010D	7440-38-2	ARSENIC, TOTAL	J
067_DUP-2	6010D	7440-39-3	BARIUM, TOTAL	J
067_DUP-2	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
067_DUP-2	6010D	7440-70-2	CALCIUM, TOTAL	J
067_DUP-2	6010D	7440-50-8	COPPER, TOTAL	J
067_DUP-2	SW8081B	33213-65-9	ENDOSULFAN II	UJ
067_DUP-2	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
067_DUP-2	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
067_DUP-2	SW8081B	53494-70-5	ENDRIN KETONE	UJ
067_DUP-2	6010D	7439-89-6	IRON, TOTAL	J
067_DUP-2	6010D	7439-92-1	LEAD, TOTAL	J
067_DUP-2	6010D	7439-95-4	MAGNESIUM, TOTAL	J
067_DUP-2	SW7471B	7439-97-6	MERCURY, TOTAL	J
067_DUP-2	SW8081B	72-43-5	METHOXYCHLOR	UJ
067_DUP-2	SW8260C	91-20-3	NAPHTHALENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
067_DUP-2	SW8270D	91-20-3	NAPHTHALENE	J
067_DUP-2	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
067_DUP-2	6010D	7440-02-0	NICKEL, TOTAL	J
067_DUP-2	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
067_DUP-2	E537(M)	335-77-3	PERFLUORODECANESULFONIC ACID (PFDS)	UJ
067_DUP-2	E537(M)	375-95-1	PERFLUORONONANOIC ACID (PFNA)	J
067_DUP-2	E537(M)	754-91-6	PERFLUOROOCTANESULFONAMIDE (FOSA)	UJ
067_DUP-2	E537(M)	TOTPFOAPFOS	PFOA/PFOS, TOTAL	J
067_DUP-2	SW8270D	85-01-8	PHENANTHRENE	J
067_DUP-2	6010D	7440-09-7	POTASSIUM, TOTAL	J
067_DUP-2	6010D	7440-22-4	SILVER, TOTAL	J
067_DUP-2	SW8260C	108-05-4	VINYL ACETATE	UJ
030_LSB-44_3.0-5.0	SW8260C	123-91-1	1,4-DIOXANE	UJ
030_LSB-44_3.0-5.0	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
037_LSB-43_2.5-4.5	E537(M)	307-24-4	PERFLUOROHEXANOIC ACID (PFHXA)	J
037_LSB-43_2.5-4.5	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
038_LSB-43_12.0-14.0	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	J
038_LSB-43_12.0-14.0	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
040_LSB-42_1.5-3.5	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	J
040_LSB-42_1.5-3.5	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
065_LSB-39_1.0-3.0	E537(M)	307-24-4	PERFLUOROHEXANOIC ACID (PFHXA)	J
067_DUP-2	E537(M)	307-55-1	PERFLUORODODECANOIC ACID (PFDOA)	J
067_DUP-2	E537(M)	2058-94-8	PERFLUOROUNDECANOIC ACID (PFUNA)	J
060_LSB-36_1.0-3.0	SW8082A	11097-69-1	AROCLOR 1254	J
060_LSB-36_1.0-3.0	SW8082A	11096-82-5	AROCLOR 1260	J
047_LSB-41_4.0-6.0	SW8081B	5103-74-2	TRANS-CHLORDANE	J
050_LSB-37_1.0-3.0	SW8081B	5103-74-2	TRANS-CHLORDANE	J
053_LSB-40_1.0-3.0	SW8081B	5103-74-2	TRANS-CHLORDANE	J
067_DUP-2	SW8081B	5103-74-2	TRANS-CHLORDANE	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.

L2035280

VOCs by SW-846 Method 8260C

The MB for batch WG1407191 exhibited a detection of chloromethane (1.8 ug/kg). The associated results in sample 065_LSB-39_1.0-3.0 are qualified as "U" at the reporting limit based on potential blank contamination.

The sample 042_LSB-50_9.5-11.5 exhibited percent recoveries above the upper control limit (UCL) for the surrogates 4-bromofluorobenzene (302%) and 4-bromofluorobenzene (174%). The associated results are qualified as "J" based on potential high bias.

The sample 049_LSB-47_8.5-10.5 exhibited percent recoveries above the UCL for the surrogates 4-bromofluorobenzene (899%) and toluene-d8 (178%). The associated results are qualified as "J" based on potential high bias.

The sample 057_LSB-41_7.5-9.5 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (199%). The associated results are qualified as "J" based on potential high bias.

The sample 042_LSB-50_9.5-11.5 exhibited a percent recovery below the lower control limit (LCL) for the internal standard 1,4-dichlorobenzene-d4 (44.46%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample 049_LSB-47_8.5-10.5 exhibited percent recoveries below the LCL for the internal standard chlorobenzene-d5 (48.58%) and 1,4-dichlorobenzene-d4 (25.33%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample 065_LSB-39_1.0-3.0 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (37.69%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The initial calibration (ICAL) for instrument VOA104 exhibited a response factor (RF) below the control limit for 1,4-dioxane (0.002%). The associated results in sample 030_LSB-44_3.0-5.0, 031_LSB-44_12.0-14.0, 032_DUP-1, 033_LSB-49_9.5-11.5, 035_LSB-52_9.5-11.5, 037_LSB-43_2.5-4.5, 038_LSB-43_12.0-14.0, 039_LSB-48_8.0-10.0, 040_LSB-42_1.5-3.5, 041_LSB-42_12.0-14.0, 042_LSB-50_9.5-11.5, 043_LSB-53_9.5-11.5, 044_LSB-42_7.5-9.5, 045_LSB-54_9.5-11.5, 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 051_LSB-37_12.0-14.0, 053_LSB-40_1.0-3.0, 054_LSB-40_12.0-14.0, 055_LSB-46_6.0-8.0, 056_LSB-45_7.5-9.5, 057_LSB-41_7.5-9.5, and 058_LSB-40_6.0-8.0 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA126 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample 065_LSB-39_1.0-3.0 and 066_LSB-39_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA100 exhibited a RF below the control limit for 1,4-dioxane (0.001%). The associated results in sample 047_LSB-41_4.0-6.0, 049_LSB-47_8.5-10.5, 060_LSB-36_1.0-3.0, 061_LSB-36_12.0-14.0, 062_LSB-38_2.0-4.0, 063_LSB-38_12.0-14.0, and 067_DUP-2 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 8/31/2020 at 18:02 exhibited percent drifts (%Ds) above the control limit for trichlorofluoromethane (24.4%), carbon disulfide (28.8%), carbon tetrachloride (24.2%), bromodichloromethane (20.2%), chlorodibromomethane (21.8%), and bromoform (25.1%). The associated results in sample 030_LSB-44_3.0-5.0, 031_LSB-

44_12.0-14.0, 032_DUP-1, 033_LSB-49_9.5-11.5 and 035_LSB-52_9.5-11.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 06:28 exhibited a RF below the control limit for 1,4-dioxane (0.00149). The associated results in sample 041_LSB-42_12.0-14.0 and 044_LSB-42_7.5-9.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 06:28 exhibited a RF below the control limit for 1,4-dioxane (0.00149). The associated results in sample 033_LSB-49_9.5-11.5, 038_LSB-43_12.0-14.0, 039_LSB-48_8.0-10.0, 040_LSB-42_1.5-3.5, 042_LSB-50_9.5-11.5, 043_LSB-53_9.5-11.5, and 045_LSB-54_9.5-11.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 14:05 exhibited a RF below the control limit for 1,4-dioxane (0.00299). The associated results in sample 049_LSB-47_8.5-10.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 17:56 exhibited a RF below the control limit for 1,4-dioxane (0.00185). The associated results in sample 037_LSB-43_2.5-4.5, 041_LSB-42_12.0-14.0, and 042_LSB-50_9.5-11.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 17:56 exhibited %Ds above the control limit for dichlorodifluoromethane (-26%), chloromethane (-25%), 1,4-dioxane (-20.1%), and bromoform (21.1%). The associated results in sample 037_LSB-43_2.5-4.5, 041_LSB-42_12.0-14.0, and 042_LSB-50_9.5-11.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/3/2020 at 05:52 exhibited a RF below the control limit for 1,4-dioxane (0.0018). The associated results in sample 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 051_LSB-37_12.0-14.0, 053_LSB-40_1.0-3.0, 054_LSB-40_12.0-14.0, 055_LSB-46_6.0-8.0, 056_LSB-45_7.5-9.5, 057_LSB-41_7.5-9.5, and 058_LSB-40_6.0-8.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/3/2020 at 05:52 exhibited %Ds above the control limit for dichlorodifluoromethane (-26.5%), chloromethane (-26.5%), and bromoform (21.9%). The associated results in sample 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 051_LSB-37_12.0-14.0, 053_LSB-40_1.0-3.0, 054_LSB-40_12.0-14.0, 055_LSB-46_6.0-8.0, 056_LSB-45_7.5-9.5, 057_LSB-41_7.5-9.5, and 058_LSB-40_6.0-8.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/4/2020 at 11:29 exhibited %Ds above the control limit for dichlorodifluoromethane (-43.6%), trichlorofluoromethane (-27.4%), and carbon tetrachloride (-

28.4%). The associated results in sample 065_LSB-39_1.0-3.0 and 066_LSB-39_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/6/2020 at 16:08 exhibited a RF below the control limit for 1,4-dioxane (0.00149%). The associated results in sample 065_LSB-39_1.0-3.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/6/2020 at 16:08 exhibited %Ds above the control limit for bromomethane (24.5%), chloroethane (23.2%), carbon disulfide (31.9%), acetone (28.9%), 1,1-dichloroethane (24%), acrylonitrile (24.9%), 2-butanone (23%), 1,2-dichloropropane (24.7%), and hexachlorobutadiene (-20.1%). The associated results in sample 065_LSB-39_1.0-3.0 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/10/2020 at 07:56 exhibited %Ds above the control limit for acetone (-21.8%) and vinyl acetate (-21.1%). The associated results in sample 067_DUP-2 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM

The LCS/LCSD for batch WG1406182 exhibited a percent recovery below the LCL for 1,4-dioxane (36%, 36%). The associated results in sample 065_LSB-39_1.0-3.0, 066_LSB-39_12.0-14.0, and 067_DUP-2 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 8/31/2020 at 13:17 exhibited %Ds above the control limit for bis(2-chloroisopropyl)ether (-27.5%), hexachlorocyclopentadiene (22%), 2,4-dinitrophenol (-20.4%), and 4-nitrophenol (-30.4%). The associated results in sample 037_LSB-43_2.5-4.5, 039_LSB-48_8.0-10.0, 041_LSB-42_12.0-14.0, and 045_LSB-54_9.5-11.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 08:02 exhibited %Ds above the control limit for nitrobenzene (-22.9%), 2-nitrophenol (-23.6%), 4-nitrophenol (-22.5%), hexachlorobenzene (22.2%), pentachlorophenol (25.7%), and 1,4-dioxane (20.7%). The associated results in sample 047_LSB-41_4.0-6.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/2/2020 at 20:41 exhibited %Ds above the control limit for 2-nitrophenol (-20.2%), 4-chloroaniline (-20.9%), bis(2-chloroisopropyl)ether (-29.4%), nitrobenzene (-22.1%), 2,4-dinitrophenol (-25.9%), 4-nitrophenol (-48.6%), 4,6-dinitro-o-cresol (-22.4%), 1,2,4,5-tetrachlorobenzene (22%), and biphenyl (22.1%). The associated results in sample 055_LSB-46_6.0-8.0, 056_LSB-45_7.5-9.5, 058_LSB-40_6.0-8.0, 061_LSB-36_12.0-14.0, and 063_LSB-38_12.0-14.0 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/4/2020 at 08:35 exhibited %Ds above the control limit for benzyl alcohol (-24.1%), 2-nitrophenol (-23.8%), and 1,4-dioxane (27.3%). The associated results in sample 065_LSB-39_1.0-3.0, 066_LSB-39_12.0-14.0, and 067_DUP-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/8/2020 at 09:13 exhibited a %D above the control limit for pentachlorophenol (20.3%). The associated results in sample 051_LSB-37_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M

The FB (034_FB_08272020) exhibited a detection of perfluorohexanoic acid (0.343 ng/l). The associated results in sample 030_LSB-44_3.0-5.0, 031_LSB-44_12.0-14.0, 032_DUP-1, 033_LSB-49_9.5-11.5, and 035_LSB-52_9.5-11.5 are qualified as "U" at the reporting limit based on potential blank contamination.

The sample 050_LSB-37_1.0-3.0 exhibited percent recoveries below the LCL for the isotope dilution standards n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (34%) and n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (37%). The associated results are qualified as "UJ" based on potential low bias.

The LCS for batch WG1406585 exhibited a percent recovery below the LCL for perfluorooctanesulfonamide (59%). The associated results in sample 047_LSB-41_4.0-6.0, 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 053_LSB-40_1.0-3.0, 054_LSB-40_12.0-14.0, 060_LSB-36_1.0-3.0, 061_LSB-36_12.0-14.0, 062_LSB-38_2.0-4.0, 063_LSB-38_12.0-14.0, 065_LSB-39_1.0-3.0, 066_LSB-39_12.0-14.0, and 067_DUP-2 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 9/1/2020 at 17:59 exhibited %Ds above the control limit for 1h,1h,2h,2h-perfluorodecanesulfonic acid (38.5%), n-methyl perfluorooctanesulfonamidoacetic acid-branched (31.3%), and n-ethyl perfluorooctanesulfonamidoacetic acid-branched (35.1%). The associated results in sample 030_LSB-44_3.0-5.0, 031_LSB-44_12.0-14.0, 032_DUP-1, 037_LSB-43_2.5-4.5, 040_LSB-42_1.5-3.5, and 041_LSB-42_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/6/2020 at 20:30 exhibited %Ds above the control limit for n-methyl perfluorooctanesulfonamidoacetic acid-branched (31.6%), perfluorodecanesulfonic acid (42.2%), and n-ethyl perfluorooctanesulfonamidoacetic acid-branched (20.9%). The associated results in sample 047_LSB-41_4.0-6.0, 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 053_LSB-40_1.0-3.0, 060_LSB-36_1.0-3.0, and 061_LSB-36_12.0-14.0, 062_LSB-38_2.0-4.0, 063_LSB-38_12.0-14.0, 065_LSB-39_1.0-3.0, and 067_DUP-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/8/2020 at 12:28 exhibited a %D above the control limit for n-methyl perfluorooctanesulfonamidoacetic acid-branched (24.3%). The associated results in sample 054_LSB-40_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/9/2020 at 11:06 exhibited %Ds above the control limit for n-ethyl perfluorooctanesulfonamidoacetic acid-branched (45.9%) and perfluorohexanesulfonic acid-branched (48.1%). The associated results in sample 051_LSB-37_12.0-14.0 and 060_LSB-36_1.0-3.0 are qualified as "UJ" based on potential indeterminate bias.

The laboratory noted the ratio of quantifier ion response to qualifier ion response recovered outside of laboratory criteria for samples 030_LSB-44_3.0-5.0, 037_LSB-43_2.5-4.5, 038_LSB-43_12.0-14.0, 040_LSB-42_1.5-3.5, 065_LSB-39_1.0-3.0, and 067_DUP-2. The associated results in samples 030_LSB-44_3.0-5.0, 037_LSB-43_2.5-4.5, 038_LSB-43_12.0-14.0, 040_LSB-42_1.5-3.5, 065_LSB-39_1.0-3.0, and 067_DUP-2 are qualified as "J" based on indeterminate bias.

Herbicides by SW-846 Method 8151A

The LCS/LCSD for batch WG1405963 exhibited a relative percent difference (RPD) above the control limit for 2,4-d (31%). The associated results in sample 060_LSB-36_1.0-3.0 and 061_LSB-36_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/4/2020 at 08:14 exhibited a %D above the control limit for 2,4,5-tp (-16.8%). The associated results in sample 060_LSB-36_1.0-3.0 and 061_LSB-36_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

PCBs by SW-846 Method 8082A

The sample 060_LSB-36_1.0-3.0 exhibited RPDs above the control limit between the primary and secondary GC columns for Aroclor 1254 (42.4%) and Aroclor 1260 (45.1%). The associated results are qualified as "J" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B

The sample 031_LSB-44_12.0-14.0 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (23%). The associated results are qualified as "UJ" based on potential low bias.

The sample 032_DUP-1 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (21%). The associated results are qualified as "UJ" based on potential low bias.

The sample 065_LSB-39_1.0-3.0 exhibited percent recoveries above the UCL for the surrogates decachlorobiphenyl (200%) and decachlorobiphenyl (351%). The associated results are qualified as "J" based on potential high bias.

The LCS/LCSD for batch WG1406204 exhibited RPDs above the control limit for endrin aldehyde (51%), endrin ketone (54%), endosulfan II (34%), endosulfan sulfate (62%), and methoxychlor (31%). The associated results in sample 065_LSB-39_1.0-3.0, 066_LSB-39_12.0-14.0, and 067_DUP-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/4/2020 at 09:07 exhibited a %D above the control limit for methoxychlor (-26.6%). The associated results in sample 047_LSB-41_4.0-6.0, 050_LSB-37_1.0-3.0, and 053_LSB-40_1.0-3.0 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 9/8/2020 at 07:58 exhibited a %D above the control limit for 4,4'-DDE (20.2%). The associated results in sample 048_LSB-41_12.0-14.0 and 051_LSB-37_12.0-14.0 are qualified as "UJ" based on potential indeterminate bias.

The sample 037_LSB-43_2.5-4.5 exhibited a RPD above the control limit between the primary and secondary GC columns for 4,4'-DDT (56%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 040_LSB-42_1.5-3.5 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (197%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 060_LSB-36_1.0-3.0 exhibited RPDs above the control limit between the primary and secondary GC columns for trans-chlordane (155%) and chlordane (58%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 066_LSB-39_12.0-14.0 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (199%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 037_LSB-43_2.5-4.5 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (64.5%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 047_LSB-41_4.0-6.0 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (196%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 050_LSB-37_1.0-3.0 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (195.8%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 053_LSB-40_1.0-3.0 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (197.7%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample 067_DUP-2 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (196.3%). The associated results are qualified as "J" based on potential indeterminate bias.

Metals by SW-846 Method 6010D

The serial dilution performed on sample 047_LSB-41_4.0-6.0 exhibited percent differences above the control limit for total aluminum (33%), total barium (32%), total calcium (33%), total chromium (33%), total copper (26%), total iron (35%), total magnesium (34%), total manganese (35%), and total vanadium (30%). The associated results are qualified as "J" based on potential indeterminate bias.

The MB for batch WG1404915 exhibited a detection of total sodium (3.24 mg/kg). The associated results in sample 032_DUP-1, 038_LSB-43_12.0-14.0, and 041_LSB-42_12.0-14.0 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1405382 exhibited detections of total selenium (0.156 mg/kg) and total sodium (3.38 mg/kg). The associated results in sample 047_LSB-41_4.0-6.0, 048_LSB-41_12.0-14.0, 050_LSB-37_1.0-3.0, 051_LSB-37_12.0-14.0, and 054_LSB-40_12.0-14.0 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The MB for batch WG1405865 exhibited a detection of total sodium (9.06 mg/kg). The associated results in sample 062_LSB-38_2.0-4.0 and 063_LSB-38_12.0-14.0 are qualified as "U" at the reporting limit based on potential blank contamination.

The MSD performed on sample 047_LSB-41_4.0-6.0 exhibited percent recoveries above the UCL for total arsenic (139%) and total vanadium (128%). The associated results in sample 047_LSB-41_4.0-6.0 are qualified as "J" based on potential high bias.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited a percent recovery below the LCL for total thallium (72%, 71%). The associated results in sample 047_LSB-41_4.0-6.0 are qualified as "UJ" based on potential low bias.

The MSD performed on sample 062_LSB-38_2.0-4.0 exhibited a percent recovery below the LCL for total copper (64%). The associated results in sample 062_LSB-38_2.0-4.0 are qualified as "J" based on potential low bias.

Mercury by SW-846 Method 7471B

The MSD performed on sample 047_LSB-41_4.0-6.0 exhibited a percent recovery above the UCL for total mercury (149%). The associated results in sample 047_LSB-41_4.0-6.0 are qualified as "J" based on potential high bias.

The MS performed on sample 062_LSB-38_2.0-4.0 exhibited a percent recovery above the UCL for total mercury (130%). The associated results in sample 062_LSB-38_2.0-4.0 are qualified as "J" based on potential high bias.

Hexavalent Chromium by SW-846 Method 7196A

The MS/MSD performed on sample 062_LSB-38_2.0-4.0 exhibited a RPD above the control limit for hexavalent chromium (24%). The associated results in sample 062_LSB-38_2.0-4.0 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.

L2035280

VOCs by SW-846 Method 8260C

The MB for batch WG1406130 exhibited a detection of bromomethane (82 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1406233 exhibited detections of 1,2,3-trichlorobenzene (0.36 ug/kg), 1,2,4-trichlorobenzene (0.31 ug/kg), and bromomethane (0.61 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1406401 exhibited a detection of bromomethane (0.68 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1407191 exhibited detections of 1,2,3-trichlorobenzene (0.39 ug/kg) and 1,2,4-trichlorobenzene (0.31 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1408327 exhibited detections of 1,2,3-trichlorobenzene (0.33 ug/kg), naphthalene (0.77 ug/kg), and n-propylbenzene (0.19 ug/kg). The associated results are non-detections. No qualification is necessary.

The sample 041_LSB-42_12.0-14.0 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (193%). This surrogate recovery is associated with a non-reportable confirmation run. No qualification is necessary.

The sample 065_LSB-39_1.0-3.0 exhibited percent recoveries above the UCL for the surrogates 4-bromofluorobenzene (138%) and toluene-d8 (132%). These recoveries are associated with a non-reportable confirmation run. No qualification is necessary.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited percent recoveries below the LCL for the MS and/or MSD for methylene chloride (66%, 58%), dibromochloromethane (69%, 59%), 1,1,2-trichloroethane (69%, 63%), chlorobenzene (54%, 47%), 1,2-dichloroethane (62%, 53%), bromodichloromethane (%, 69%), trans-1,3-dichloropropene (36%, 26%), cis-1,3-dichloropropene (55%, 44%), bromoform (62%, 52%), 1,1,2,2-tetrachloroethane (64%, 56%), toluene (%, 69%), ethylbenzene (68%, 66%), trans-1,2-dichloroethene (69%, 62%), trichloroethene (%, 69%), 1,2-dichlorobenzene (35%, 30%), 1,3-dichlorobenzene (37%, 32%), 1,4-dichlorobenzene (31%, 26%), p/m-xylene (67%, 65%), o-xylene (68%, 64%), cis-1,2-dichloroethene (65%, 55%), dibromomethane (49%, 38%), styrene (50%, 43%), 2-butanone (%, 69%), vinyl acetate (44%, 29%), 1,2,3-trichloropropane (61%, 55%), 2-hexanone (67%, 60%), bromochloromethane (62%, 50%), 1,2-dibromoethane (47%, 37%), 1,3-dichloropropane (60%, 52%), bromobenzene (44%, 36%), n-butylbenzene (49%, 52%), sec-butylbenzene (63%, 68%), tert-butylbenzene (69%), o-chlorotoluene (57%, 53%), p-chlorotoluene (44%, 40%), 1,2-dibromo-3-chloropropane (52%, 43%), hexachlorobutadiene (43%, 39%), p-isopropyltoluene (60%, 62%), naphthalene (16%, 14%), acrylonitrile (64%, 53%), n-propylbenzene (62%, 65%), 1,2,3-trichlorobenzene (17%, 15%), 1,2,4-trichlorobenzene (18%, 16%), 1,3,5-trimethylbenzene (62%, 62%), 1,2,4-trimethylbenzene (57%, 54%), p-diethylbenzene (52%, 52%), p-ethyltoluene (60%, 61%), 1,2,4,5-tetramethylbenzene (42%, 37%), and trans-1,4-dichloro-2-butene (29%, 23%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited RPDs above the control limit for trans-1,3-dichloropropene (34%) and vinyl acetate (43%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS/MSD performed on sample 062_LSB-38_2.0-4.0 exhibited percent recoveries below the LCL for the MS and/or MSD for 1,2-dichlorobenzene (MSD = 63%), 1,3-dichlorobenzene (MSD = 64%), 1,4-dichlorobenzene (MSD = 60%), vinyl acetate (58%, 46%), n-butylbenzene (MSD = 60%), p-chlorotoluene (MSD = 68%), hexachlorobutadiene (55%, 47%), naphthalene (MSD = 57%), 1,2,3-trichlorobenzene (62%, 41%), 1,2,4-trichlorobenzene (63%, 42%), p-diethylbenzene (MSD = 64%), and 1,2,4,5-tetramethylbenzene (MSD = 58%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The sample 042_LSB-50_9.5-11.5 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (26.71%). This internal standard is associated with a non-reportable confirmation run. No qualifications are required.

The sample 065_LSB-39_1.0-3.0 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (28.77%). This internal standard is associated with a non-reportable confirmation run. No qualifications are required.

The ICAL for instrument VOA123 exhibited a RF below the control limit for 1,4-dioxane (0.003%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 8/31/2020 at 18:02 exhibited a RF below the control limit for 1,4-dioxane (0.00176). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/2/2020 at 14:05 exhibited a %D above the control limit for 2-hexanone (20.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/3/2020 at 05:41 exhibited a RF below the control limit for 1,4-dioxane (0.00175). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/3/2020 at 16:53 exhibited a RF below the control limit for 1,4-dioxane (0.00182). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/3/2020 at 16:53 exhibited a %D above the control limit for 1,4-dioxane (-22.1%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/4/2020 at 11:29 exhibited a RF below the control limit for 1,4-dioxane (0.00192). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 9/10/2020 at 07:56 exhibited a RF below the control limit for 1,4-dioxane (0.00171). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM

The FB (034_FB_08272020) exhibited detections of 2-methylnaphthalene (0.03 ug/L), benzo(a)anthracene (0.03 ug/L), benzo(b)fluoranthene (0.03 ug/L), benzo(ghi)perylene (0.02 ug/L), benzo(k)fluoranthene (0.02 ug/L), chrysene (0.02 ug/L), dibenzo(a,h)anthracene (0.02 ug/L), indeno(1,2,3-cd)pyrene (0.03 ug/L), and naphthalene (0.06 ug/L). The associated samples were not analyzed by SVOC SIM analysis. No qualification is necessary.

The MB for batch WG1404939 exhibited detections of bis(2-ethylhexyl)phthalate (2.1 ug/L) and di-n-butylphthalate (0.49 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1405864 exhibited a detection of phenanthrene (0.04 ug/L). The associated results are non-detections. No qualification is necessary.

The sample 033_LSB-49_9.5-11.5 exhibited a percent recovery below the LCL for the surrogate 2-fluorophenol (22%). The other 033_LSB-49_9.5-11.5 surrogates were recovered within the control limits. No qualification is necessary.

The sample 051_LSB-37_12.0-14.0 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited percent recoveries below the LCL for 3,3'-dichlorobenzidine (10%, 14%), hexachlorocyclopentadiene (0%), 2,4-dinitrophenol (0%), 4,6-dinitro-o-cresol (0%), and benzoic acid (0%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

The MS/MSD performed on sample 062_LSB-38_2.0-4.0 exhibited percent recoveries below the LCL for 3,3'-dichlorobenzidine (31%), fluoranthene (0%), hexachlorocyclopentadiene (0%), hexachloroethane (%, 37%), benzo(a)anthracene (0%), benzo(a)pyrene (0%), benzo(b)fluoranthene (0%), benzo(k)fluoranthene (0%), chrysene (0%), acenaphthylene (0%), anthracene (0%), benzo(ghi)perylene (0%), fluorene (7%, 20%), phenanthrene (0%), dibenzo(a,h)anthracene (0%), indeno(1,2,3-cd)pyrene (0%), pyrene (0%), 2,4-dinitrophenol (%), 4,6-dinitro-o-cresol (8%), and 1,4-dioxane (35%, 34%). Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

PFAS by USEPA Method 537M

The sample 037_LSB-43_2.5-4.5 exhibited a percent recovery above the UCL for the isotope dilution standard 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (191%). The associated results are non-detections. No qualification is necessary.

The sample 040_LSB-42_1.5-3.5 exhibited percent recoveries above the UCL for the isotope dilution standards 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (586%), 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (529%), n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (170%), and n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (164%). The associated results are non-detections. No qualification is necessary.

The sample 041_LSB-42_12.0-14.0 exhibited a percent recovery above the UCL for the isotope dilution standard 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (202%). The associated results are non-detections. No qualification is necessary.

The sample 047_LSB-41_4.0-6.0 exhibited a percent recovery above the UCL for the isotope dilution standard 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (278%). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1406585 exhibited a RPD above the control limit for perfluorooctanesulfonamide (48%). The associated results were previously qualified. No further action is necessary.

Herbicides by SW-846 Method 8151A

The sample 040_LSB-42_1.5-3.5 exhibited a percent recovery below the LCL for the surrogate DCAA (22%). The sample was diluted >10X. No qualification is necessary.

PCBs by SW-846 Method 8082A

The MB for batch WG1404888 exhibited detections of Aroclor 1260 (0.035 ug/L) and PCBs, total (0.035 ug/L). The associated results are non-detections. No qualification is necessary.

Pesticides by SW-846 Method 8081B

The sample 031_LSB-44_12.0-14.0 exhibited a percent recovery above the UCL for the surrogate 2,4,5,6-tetrachloro-m-xylene (1120%). The associated results are non-detections. No qualification is necessary.

The sample 032_DUP-1 exhibited a percent recovery above the UCL for the surrogate 2,4,5,6-tetrachloro-m-xylene (3570%). The associated results are non-detections. No qualification is necessary.

The sample 038_LSB-43_12.0-14.0 exhibited percent recoveries above the UCL for the surrogates 2,4,5,6-tetrachloro-m-xylene (36000%) and decachlorobiphenyl (883%). The sample was diluted >10X. No qualification is necessary.

The sample 041_LSB-42_12.0-14.0 exhibited percent recoveries above the UCL for the surrogates 2,4,5,6-tetrachloro-m-xylene (34700%) and decachlorobiphenyl (3120%). The sample was diluted >10X. No qualification is necessary.

The sample 054_LSB-40_12.0-14.0 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (347%). The associated results are non-detections. No qualification is necessary.

The sample 066_LSB-39_12.0-14.0 exhibited a percent recovery above the UCL for the surrogate 2,4,5,6-tetrachloro-m-xylene (1170%). This surrogate has been marked non-reportable by the laboratory. No qualification is necessary.

Metals by SW-846 Method 6010D

The MB for batch WG1404915 exhibited detections of chromium, total (0.088 mg/kg), iron, total (1.08 mg/kg), manganese, total (0.12 mg/kg), and nickel, total (0.16 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch WG1405382 exhibited detections of iron, total (0.968 mg/kg), manganese, total (0.064 mg/kg), and potassium, total (7.11 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch WG1405865 exhibited detections of aluminum, total (1.36 mg/kg), iron, total (0.56 mg/kg), and sodium, total (9.06 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited MS and/or MSD percent recoveries outside of the control limits for aluminum, total (257%), calcium, total (%), chromium, total (0%), copper, total (0%, 518%), iron, total (0%, 3770%), lead, total (73%, 372%), magnesium, total (64%, 59%), manganese, total (159%, 169%), and zinc, total (54%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited RPDs above the control limit for copper, total (54%), iron, total (28%), and lead, total (45%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD performed on sample 062_LSB-38_2.0-4.0 exhibited percent recoveries for the MS and/or the MSD for aluminum, total (52%), calcium, total (254%, 150%), iron, total (0%), lead, total (%, 53%), and manganese, total (%, 9%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

Mercury by SW-846 Method 7471B

The MS/MSD performed on sample 047_LSB-41_4.0-6.0 exhibited a RPD above the control limit for mercury, total (26%). The associated results were previously qualified. No further action is necessary.

COMMENTS:

Two 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:

- 032_DUP-1 and 031_LSB-44_12.0-14.0
- 067_DUP-2 and 065_LSB-39_1.0-3.0

The field duplicate and parent sample (031_LSB-44_12.0-14.0 and 032_DUP-1) exhibited RPDs above the control limit for total calcium (58.6%), total copper (140.4%), fluoranthene (133.9%), total lead (66%), total mercury (91.3%), phenanthrene (138.3%), pyrene (135.3%), and total zinc (143.4%). The associated results are qualified as "J" based on potential indeterminate bias.

The field duplicate and parent sample (065_LSB-39_1.0-3.0 and 067_DUP-2) exhibited RPDs above the control limit for 4,4'-DDD (156.7%), acenaphthylene (166.2%), benzo(a)anthracene (60%), benzo(a)pyrene (76.9%), benzo(b)fluoranthene (83.6%), benzo(ghi)perylene (91.8%), benzo(k)fluoranthene (62%), total calcium (53.5%), total chromium (64.6%), trivalent chromium (63.2%), chrysene (73.7%), dibenzo(a,h)anthracene (89.2%), indeno(1,2,3-cd)pyrene (87.4%), total mercury (81.2%), total nickel (62.9%), perfluorodecanoic acid (50.1%), pyrene (61.3%), total vanadium (59%), and total zinc (120.4%). The associated results are qualified as "J" based on potential indeterminate bias.

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:

Joe Conboy
Staff Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: September 28, 2020

Re: Data Usability Summary Report
For 280 West 155th Street Development
September Soil Vapor Samples
Langan Project No.: 100765102

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in September 2020 by Langan Engineering and Environmental Services ("Langan") at the 280 West 155th Street Development site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

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***
L2038163	L2038163-01	085_AMBIENT-1	9/14/2020	VOCs
L2038163	L2038163-02	086_LSV-13	9/14/2020	VOCs
L2038163	L2038163-03	087_DUP-1	9/14/2020	VOCs
L2038163	L2038163-04	088_LSV-18	9/14/2020	VOCs
L2038163	L2038163-05	089_LSV-17	9/14/2020	VOCs
L2038163	L2038163-06	090_LSV-12	9/14/2020	VOCs
L2038163	L2038163-07	091_LSV-11	9/14/2020	VOCs
L2038163	L2038163-08	092_LSV-8	9/14/2020	VOCs
L2038163	L2038163-09	093_LSV-7	9/14/2020	VOCs
L2038163	L2038163-10	094_LSV-16	9/14/2020	VOCs
L2038163	L2038163-11	095_AMBIENT-2	9/15/2020	VOCs

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2038163	L2038163-12	096_LSV-14	9/15/2020	VOCs
L2038163	L2038163-13	097_LSV-5	9/15/2020	VOCs
L2038163	L2038163-14	098_LSV-15	9/15/2020	VOCs
L2038163	L2038163-15	099_LSV-6	9/15/2020	VOCs
L2038163	L2038163-16	100_LSV-9	9/15/2020	VOCs
L2038163	L2038163-17	101_LSV-10	9/15/2020	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, “Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15” (September 2016, Revision 6), 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, internal standard area counts, target compound identification and quantification, chromatograms, 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*
085_AMBIENT-1	TO15	67-64-1	ACETONE	J
085_AMBIENT-1	TO15	100-44-7	BENZYL CHLORIDE	UJ
086_LSV-13	TO15	67-64-1	ACETONE	J
086_LSV-13	TO15	100-44-7	BENZYL CHLORIDE	UJ
087_DUP-1	TO15	67-64-1	ACETONE	J
087_DUP-1	TO15	100-44-7	BENZYL CHLORIDE	UJ
088_LSV-18	TO15	67-64-1	ACETONE	J
088_LSV-18	TO15	100-44-7	BENZYL CHLORIDE	UJ
089_LSV-17	TO15	67-64-1	ACETONE	J
089_LSV-17	TO15	100-44-7	BENZYL CHLORIDE	UJ
090_LSV-12	TO15	67-64-1	ACETONE	J
090_LSV-12	TO15	100-44-7	BENZYL CHLORIDE	UJ
091_LSV-11	TO15	67-64-1	ACETONE	UJ
091_LSV-11	TO15	100-44-7	BENZYL CHLORIDE	UJ
092_LSV-8	TO15	67-64-1	ACETONE	J
092_LSV-8	TO15	100-44-7	BENZYL CHLORIDE	UJ
093_LSV-7	TO15	67-64-1	ACETONE	J
093_LSV-7	TO15	100-44-7	BENZYL CHLORIDE	UJ
094_LSV-16	TO15	67-64-1	ACETONE	J
094_LSV-16	TO15	100-44-7	BENZYL CHLORIDE	UJ
095_AMBIENT-2	TO15	67-64-1	ACETONE	J
095_AMBIENT-2	TO15	100-44-7	BENZYL CHLORIDE	UJ
096_LSV-14	TO15	67-64-1	ACETONE	J
096_LSV-14	TO15	100-44-7	BENZYL CHLORIDE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
097_LSV-5	TO15	67-64-1	ACETONE	J
097_LSV-5	TO15	100-44-7	BENZYL CHLORIDE	UJ
098_LSV-15	TO15	67-64-1	ACETONE	UJ
098_LSV-15	TO15	100-44-7	BENZYL CHLORIDE	UJ
099_LSV-6	TO15	67-64-1	ACETONE	J
099_LSV-6	TO15	100-44-7	BENZYL CHLORIDE	UJ
100_LSV-9	TO15	67-64-1	ACETONE	J
100_LSV-9	TO15	100-44-7	BENZYL CHLORIDE	UJ
101_LSV-10	TO15	67-64-1	ACETONE	J
101_LSV-10	TO15	100-44-7	BENZYL CHLORIDE	UJ
086_LSV-13	TO15	75.15-0	CARBON DISULFIDE	J
087_DUP-1	TO15	75.15-0	CARBON DISULFIDE	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 Method TO-15:

L2038163

The initial calibration for instrument AIRPIANO3 exhibited a relative standard deviation above the control limit for acetone (30.44%) and benzyl chloride (31.52%). The associated results in sample 085_AMBIENT-1, 086_LSV-13, 087_DUP-1, 088_LSV-18, 089_LSV-17, 090_LSV-12, 091_LSV-11, 092_LSV-8, 093_LSV-7, 094_LSV-16, 095_AMBIENT-2, 096_LSV-14, 097_LSV-5, 098_LSV-15, 099_LSV-6, 100_LSV-9, and 101_LSV-10 are qualified as "J" or "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 USEPA Method TO-15:

L2038163

The continuing calibration verification analyzed on 9/21/2020 at 11:32 exhibited a percent difference above the control limit for benzyl chloride (-35.8%). The associated results were previously qualified. No further action is necessary.

COMMENTS:

One field duplicate and parent sample pair was 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 vapor. The following field duplicate and parent sample pairs were compared to the precision criteria:

- 086_LSV-13 and 087_DUP-1

The field duplicate and parent sample (086_LSV-13 and 087_DUP-1) exhibited a relative percent difference (RPD) above the control limit for carbon disulfide (34.9%). The associated results are qualified as "J" based on potential indeterminate bias.

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:

Joe Conboy
Staff Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: March 18, 2021

Re: Data Usability Summary Report
For 280 West 155th Street
February 2021 Groundwater Samples
Langan Project No.: 100765102

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in February 2021 by Langan Engineering and Environmental Services ("Langan") at the 280 West 155th Street site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for select ion method (SIM) semivolatile organic compounds (SVOCs) by the method specified below.

- SVOCs by SW-846 Method 8270D SIM

Table 1, attached, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

Validation Overview

This data validation was performed in accordance with 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, overall system 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 and listed in Table 2 (attached).

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. No minor deficiencies were identified.

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.

FIELD DUPLICATE:

Two 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 groundwater. The following field duplicate and parent sample pairs were compared to the precision criteria:

- 112_LMW-9 and 115_DUP-2
- 113_LMW-9 (DISSOLVED) and 116_DUP-2 (DISSOLVED)

The field duplicate and parent sample (113_LMW-9 (DISSOLVED) and 116_DUP-2 (DISSOLVED)) exhibited RPDs above the control limit for benzo(a)anthracene (133.3%), benzo(b)fluoranthene (133.3%), and phenanthrene (133.3%). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias.

CONCLUSION:

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, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Joe Conboy
Staff Chemist

APPENDIX G

Daily Reports

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy		Bright Sun	X
TEMP.	< 32		32-50		50-70		70-85		>85	X

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	08/27/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 14:30

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental) **AARCO:** Nick Turro, Jose Romeo **Hager-Richter:** Alexis Martinez, Amanda Fabian, Justin Covert

Site Activities

- Langan mobilized to the site with Hager-Richter Geoscience, Inc. (Hager-Richter) the geophysical survey contractor and AARCO Environmental Services, Inc. (AARCO), the drilling contractor.
- Hager-Richter performed a geophysical survey to investigate for subsurface structures and to clear boring locations and utilities within the eastern portion of the site.
- AARCO used a Geoprobe® 7822DT direct-push drill rig to advance soil borings LSB-44, LSB-49, and LSB-52 to a depth of 15 feet below ground surface (bgs). Groundwater monitoring well LMW-6 was installed to a depth of 15 ft bgs within LSB-52 and LMW-7 was installed to a depth of 13 ft bgs.
- AARCO developed LMW-6 and LMW-7 using a submersible pump and surging method across the screened interval.

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID	Depth (ft bgs)
030_LSB-44_3.0-5.0	3.0 – 5.0
031_LSB-44_12.0-14.0	12.0 – 14.0
032_DUP-1 (LSB-44)	12.0 – 14.0

- The following soil samples were collected and submitted to the laboratory to be analyzed for VOCs, SVOCs, and PCBs:

Sample ID	Depth (ft bgs)
033_LSB-49_9.5-11.5	9.5 – 11.5
035_LSB-52_9.5-11.5	9.5 – 11.5

- The sample collected from LSB-49 placed on hold pending receipt of analytical results for LSB-52.
- Field Blank 034_FB_08272020 was collected for analysis of VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, 1,4-dioxane, and PFAS.

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

Problems Encountered

- None

Activities Scheduled for Next Day

- Continue geophysical survey to investigate for subsurface structures and around proposed boring, monitoring well, and soil vapor locations; and,
- Drilling at boring, monitoring well, and soil vapor locations.

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ✚ Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Soil Boring/Monitoring Well Location
- ✚ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- ▭ Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.

2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.

4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.

5. AOC-3 encompasses the entire site footprint.

6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.

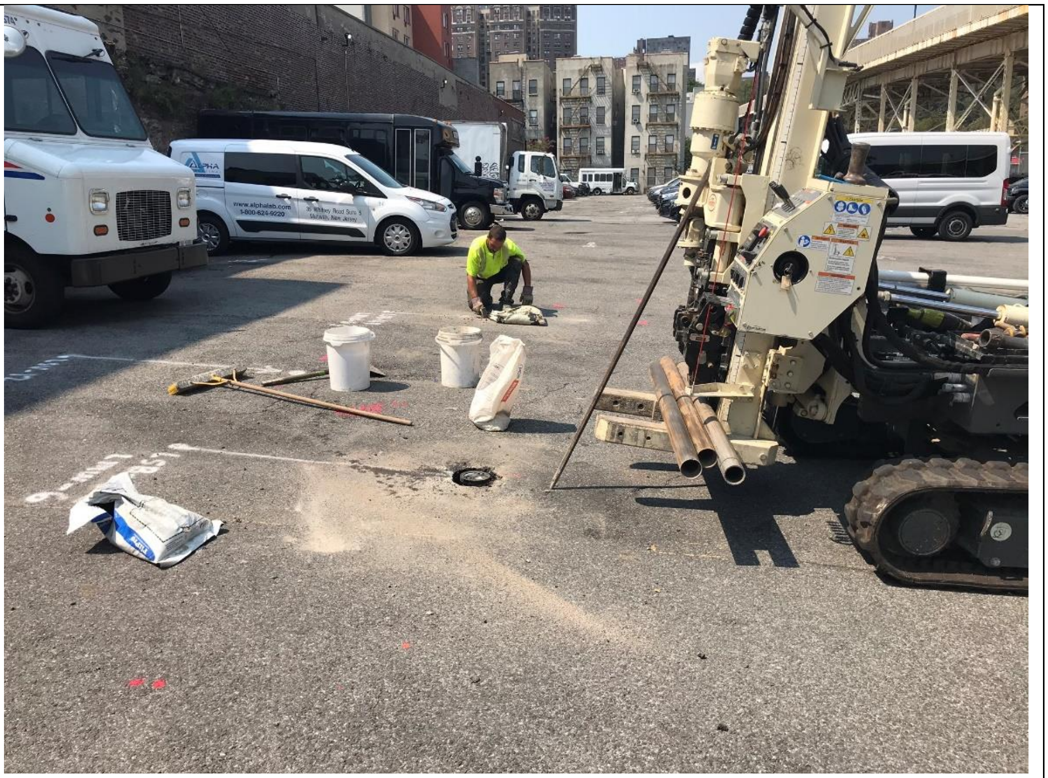
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.

8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – AARCO installing LMW-7, facing southwest.	
Photo 2 – Hager-Richter performing geophysical survey in the eastern portion of the site, facing southwest.	

Photo 3 – Installation of manhole cover at LMW-6, facing southwest.



DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy		Bright Sun	X
TEMP.	< 32		32-50		50-70		70-85		>85	X

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	08/27/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 14:45

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental) **AARCO:** Nick Turro, William Romeo **Hager-Richter:** Alexis Martinez, Amanda Fabian

Site Activities

- Langan mobilized to the site with Hager-Richter Geoscience, Inc. (Hager-Richter) the geophysical survey contractor and AARCO Environmental Services, Inc. (AARCO), the drilling contractor.
- Hager-Richter performed a geophysical survey to investigate for subsurface structures and to clear boring locations and utilities within the northern and western portion of the site.
- AARCO used a Geoprobe® 7822DT direct-push drill rig to advance soil borings LSB-42, LSB-43, LSB-48, LSB-50, LSB-53, and LSB-54 to a depth of 15 feet below ground surface (bgs). Soil vapor monitoring point LSV-12 was installed to 8 feet bgs (depth to water at 9 feet bgs), LSB-8 was installed to 7 feet bgs (depth to water at 8 feet bgs), LSV-11 and LSV-17 were installed to 7.5 feet bgs (depth to water at 8.5 feet bgs), LSV-18 was installed to 4 feet bgs (moisture observed at 5 feet bgs and depth to water at 6 feet bgs), and LSV-13 and LSV-15 were installed to 3 feet bgs (moisture observed at 4 feet bgs and depth to water at 7 feet bgs).

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID	Depth (ft bgs)
037_LSB-43_2.5-4.5	2.5 – 4.5
038_LSB-43_12.0-14.0	12.0 – 14.0
040_LSB-42_1.5-3.5	1.5 – 3.5
041_LSB-42_12.0-14.0	12.0 – 14.0

- The following soil samples were collected and submitted to the laboratory to be analyzed for VOCs, SVOCs, and PCBs:

Sample ID	Depth (ft bgs)
039_LSB-48_8.0-10.0	8.0 – 10.0
042_LSB-50_9.5-11.5	9.5 – 11.5
043_LSB-53_9.5-11.5	9.5 – 11.5
044_LSB-42_7.5-9.5	7.5 – 9.5
045_LSB-54_9.5-11.5	9.5 – 11.5

- The sample collected from LSB-50 and LSB-53 were placed on hold pending receipt of analytical results for LSB-54. The sample collected from LSB-42 was also placed on hold.
- Trip Blank 046_TB_08282020 was collected for analysis of VOCs.

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

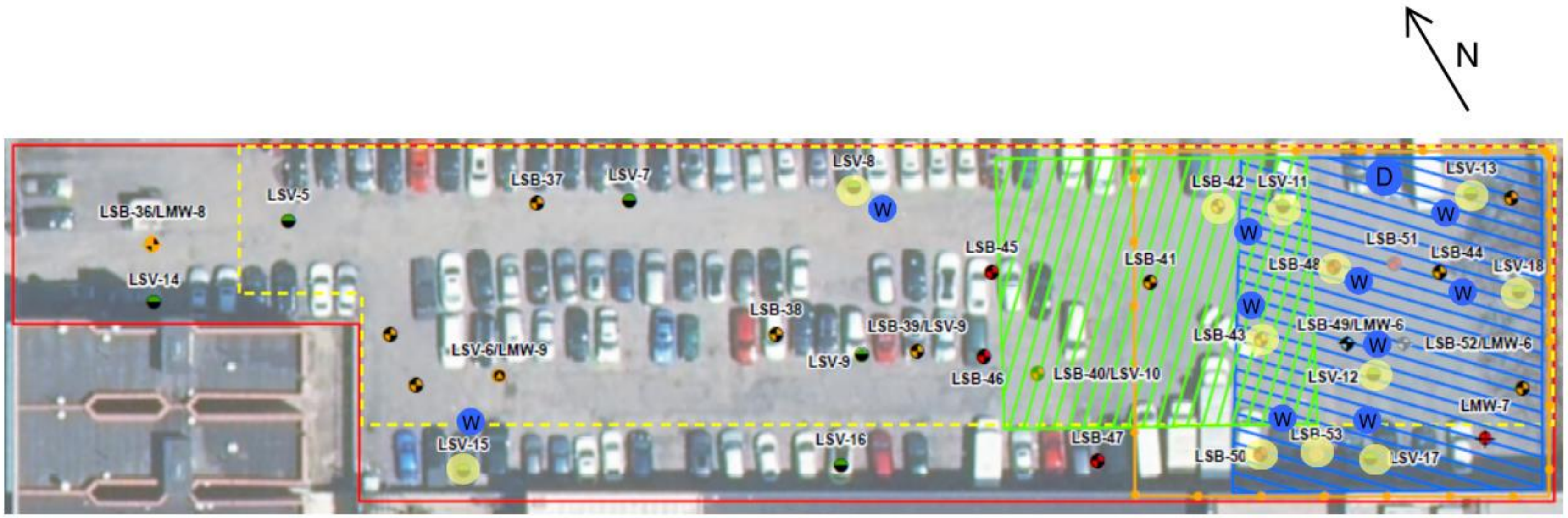
Problems Encountered

- None

Activities Scheduled for Next Day

- Continue geophysical survey to investigate for subsurface structures and around proposed boring, monitoring well, and soil vapor locations; and,
- Drilling at boring, monitoring well, and soil vapor locations.

SITE MAP



Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ⊕ Site Wide Investigation Soil Boring Location
- ⊕ Site Wide Investigation Soil Boring/Monitoring Well Location
- ▲ Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ⊕ Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ⊕ NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Soil Boring/Monitoring Well Location
- ⊕ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- 🟡 Work Area

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – AARCO drilling at LSV-15, facing southeast.

Photo 2 – Hager-Richter performing geophysical survey in the western portion of the site, facing north.

Photo 3 – Hager-Richter performing geophysical survey in the northern portion of the site, facing north.	

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	08/31/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 14:45

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental) **AARCO:** Nick Turro, Jose Romeo **Hager-Richter:** Alexis Martinez, Amanda Fabian

Site Activities

- Langan mobilized to the site with Hager-Richter Geoscience, Inc. (Hager-Richter) the geophysical survey contractor and AARCO Environmental Services, Inc. (AARCO), the drilling contractor.
- Hager-Richter performed a geophysical survey to investigate for subsurface structures and to clear boring locations and utilities within the southern and central portion of the site.
- AARCO used a Geoprobe® 7822DT direct-push drill rig to advance soil borings LSB-37, LSB-40, LSB-41, LSB-45, LSB-46, and LSB-47 to a depth of 15 feet below ground surface (bgs). Soil vapor monitoring points LSV-7 was installed to 7 feet bgs (depth to water at 8 feet bgs), LSV-10 was installed to 6 feet bgs (depth to water at 7 feet bgs), and LSV-16 was installed to 3.5 feet bgs (moisture observed at 4.5 feet bgs and depth to water at 8 feet bgs).

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID	Depth (ft bgs)
047_LSB-41_4.0-6.0	4.0 – 6.0
048_LSB-41_12.0-14.0	12.0 – 14.0
050_LSB-37_1.0-3.0	1.0 – 3.0
051_LSB-37_12.0-14.0	12.0 – 14.0
053_LSB-40_1.0-3.0	1.0 – 3.0
054_LSB-40_12.0-14.0	12.0 – 14.0

- The following soil samples were collected and submitted to the laboratory to be analyzed for VOCs, SVOCs, and PCBs:

Sample ID	Depth (ft bgs)
049_LSB-47_8.5-10.5	8.5 – 10.5
055_LSB-46_6.0-8.0	6.0 – 8.0
056_LSB-45_7.5-9.5	7.5 – 9.5
057_LSB-41_7.5-9.5	7.5 – 9.5
058_LSB-40_6.0-8.0	6.0 – 8.0

- Trip Blank 059_TB_08312020 was collected for analysis of VOCs.
- Field Blank 052_FB_08312020 was collected for analysis of VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, PFAS, and 1,4-dioxane.

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

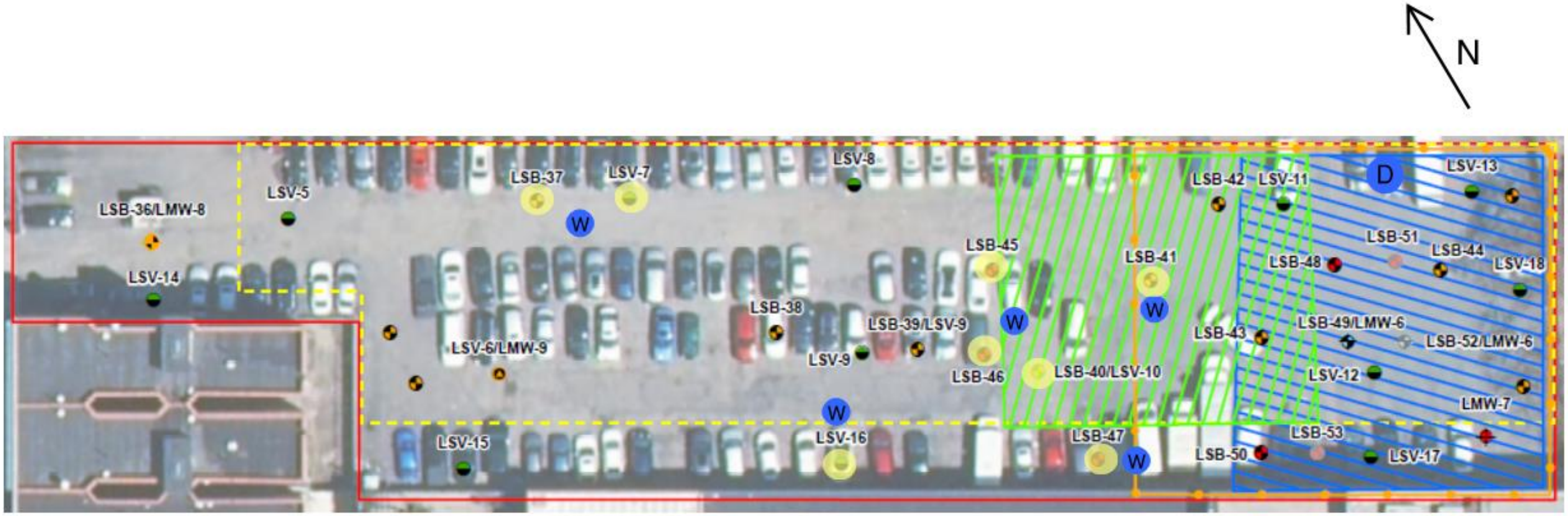
Problems Encountered

- None

Activities Scheduled for Next Day

- Continue geophysical survey to investigate for subsurface structures and around proposed boring, monitoring well, and soil vapor locations; and,
- Drilling at boring, monitoring well, and soil vapor locations.

SITE MAP



Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ● Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ● NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ● NAPL Delineation Soil Boring/Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

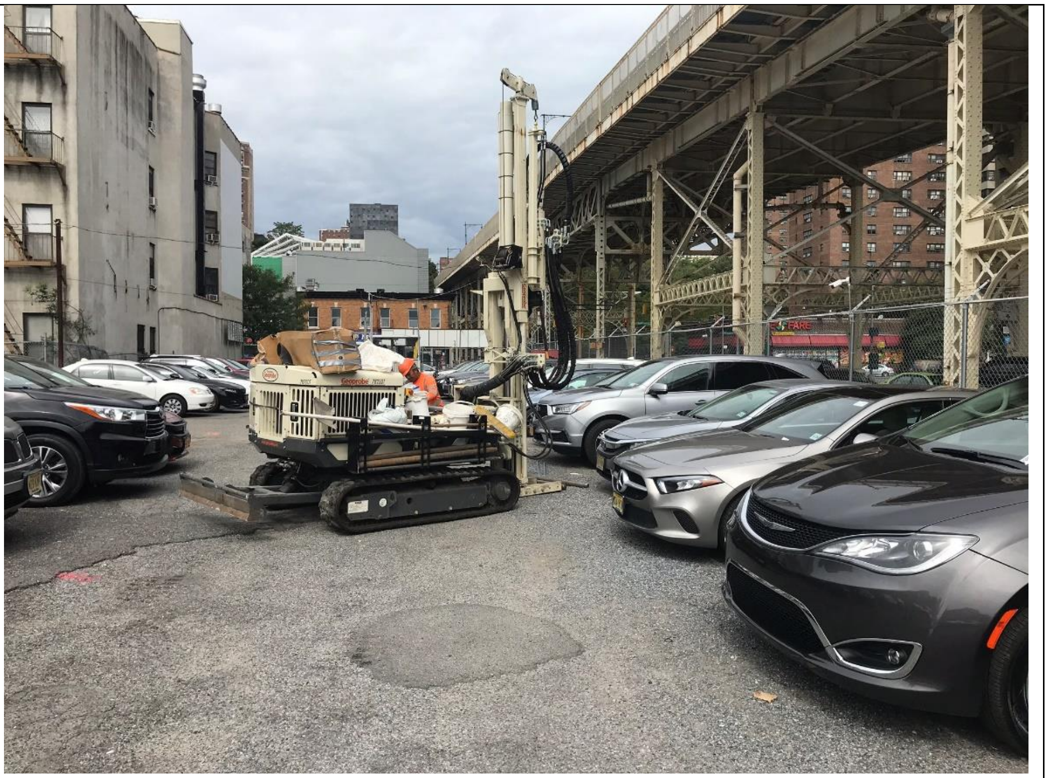
NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – AARCO installing LSV-16, facing west.

Photo 2 – Hager-Richter performing geophysical survey in the southern portion of the site, facing south.

Photo 3 – Drilling at LSB-37, facing north.	

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain	X	Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/01/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 14:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental) **AARCO:** Nick Turro, Jose Romeo

Site Activities

- Langan mobilized to the site with AARCO Environmental Services, Inc. (AARCO), the drilling contractor.
- AARCO used a Geoprobe® 7822DT direct-push drill rig to advance soil borings LSB-36 and LSB-38 to a depth of 15 feet below ground surface (bgs). Groundwater monitoring well LMW-8 was installed to a depth of 15 feet bgs within LSB-36, and LMW-9 was installed to a depth of 13 feet bgs. Soil vapor monitoring points LSV-6 was installed to 3.5 feet bgs (moisture observed at 4.5 feet bgs and depth to water at 7.4 feet bgs) and LSV-14 was installed to 4 feet bgs (moisture observed at 5 feet bgs and depth to water at 10 feet bgs).
- AARCO developed LMW-8 and LMW-9 (2-inch RI wells) using a submersible pump and surging method and LMW-3 (1-inch well previously installed at the Site) using a check-valve and surging method across the screened interval.

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID	Depth (ft bgs)
060_LSB-36_1.0-3.0	1.0 – 3.0
061_LSB-36_12.0-14.0	12.0 – 14.0
062_LSB-38_2.0-4.0	2.0 – 4.0
063_LSB-38_12.0-14.0	12.0 – 14.0

- Trip Blank 059_TB_09012020 was collected for analysis of VOCs.

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

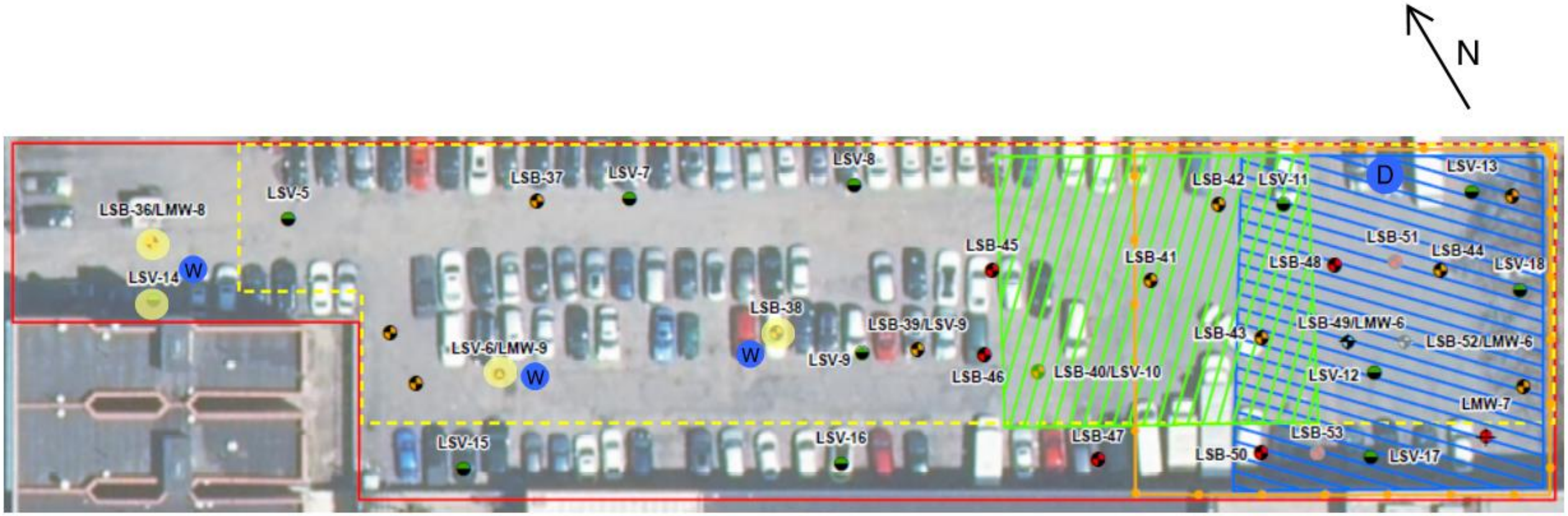
Problems Encountered

- None

Activities Scheduled for Next Day

- Continue geophysical survey to investigate for subsurface structures and around proposed boring, monitoring well, and soil vapor locations; and,
- Drilling at boring, monitoring well, and soil vapor locations.

SITE MAP



Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ⊕ Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
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- ● Contingent NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Soil Boring/Monitoring Well Location
- ⊕ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- ⬚ Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
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2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – AARCO installing LMW-9, facing southwest.	
Photo 2 – Well development of LMW-9, facing southeast.	

Photo 3 – AARCO installing LSV-14, facing east.	

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain	X	Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/02/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 13:30

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental) **AARCO:** Nick Turro, Jose Romeo

<u>Site Activities</u>

- Langan mobilized to the site with AARCO Environmental Services, Inc. (AARCO), the drilling contractor.
- AARCO used a Geoprobe® 7822DT direct-push drill rig to advance soil borings LSB-39 to a depth of 15 feet below ground surface (bgs) and LSB-55, LSB-56, LSB-57, and LSB-58 to a depth of 12 feet bgs. LSB-55, LSB-56, LSB-57, and LSB-58 were installed for waste characterization purposes only. Soil vapor monitoring points LSV-5 was installed to 3.5 feet bgs (moisture observed at 4.5 feet bgs and depth to water at 9.5 feet bgs) and LSV-9 was installed to 3 feet bgs (moisture observed at 4 feet bgs and depth to water at 8 feet bgs).

<u>Samples Collected</u>

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID	Depth (ft bgs)
065_LSB-39_1.0-3.0	1.0 – 3.0
066_LSB-39_12.0-14.0	12.0 – 14.0
067_DUP-2 (Parent Sample 065_LSB-39_1.0-3.0)	1.0 – 3.0

- Trip Blank 068_TB_09022020 was collected for analysis of VOCs.
- The following soil waste characterization samples were collected and submitted to the laboratory to be analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, cyanide, extractable petroleum hydrocarbons (EPH) (spiked for fractionation), full toxicity characteristic leaching procedure (TCLP) and Resource Conservation and Recovery Act (RCRA) hazardous characteristics:

Sample ID	Depth (ft bgs)
069_WC-9	0.0 – 12.0
070_WC-10	0.0 – 12.0

- Field Blank 071_FB_09020202 was collected and submitted to the laboratory to be analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, cyanide, and extractable petroleum hydrocarbons (EPH) (spiked for fractionation).
- Trip Blank 072_TB_09022020 was collected for analysis of VOCs associated with the waste characterization samples.

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

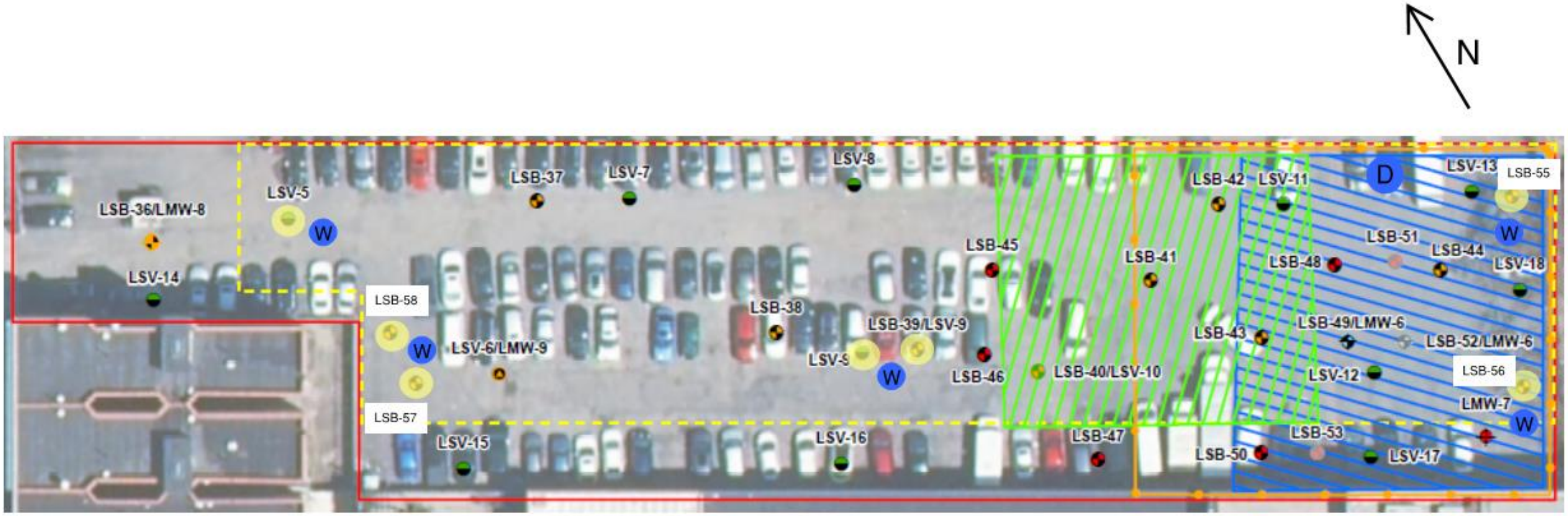
Problems Encountered

- None

Activities Scheduled for Next Day

- Groundwater sampling and soil vapor sampling to occur in approximately one week.

SITE MAP



Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

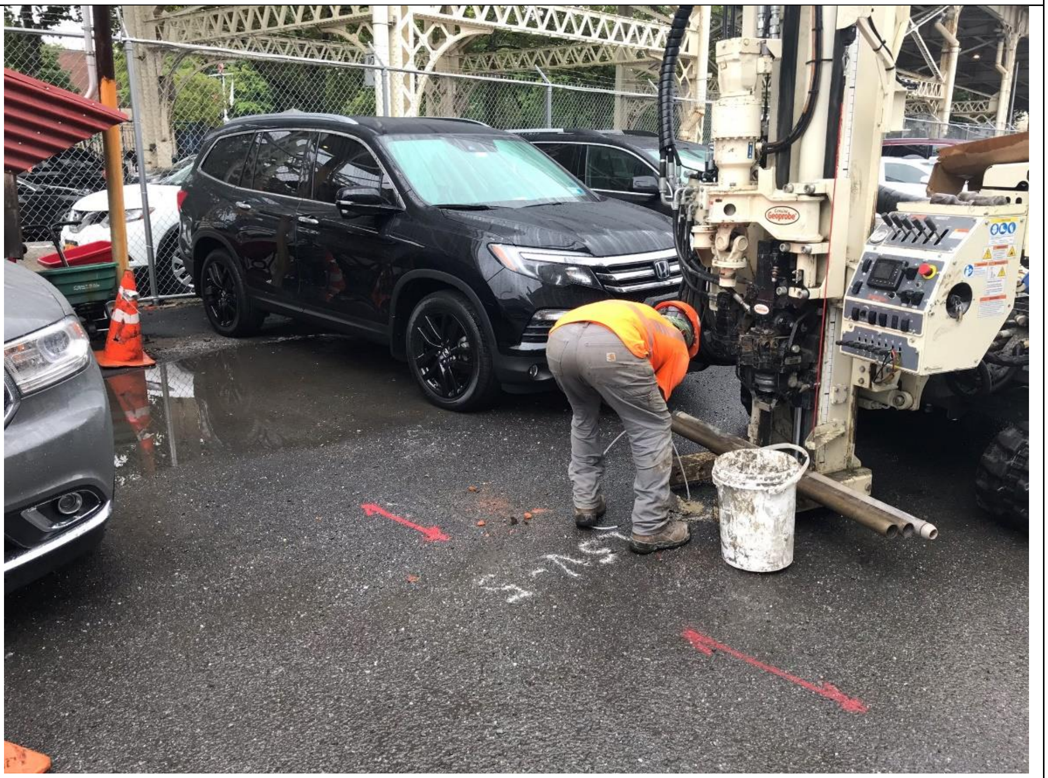
LEGEND

- ● Site Wide Investigation Soil Boring Location
- ✚ Site Wide Investigation Soil Boring/Monitoring Well Location
- ▲ Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Soil Boring/Monitoring Well Location
- ✚ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – AARCO drilling at LSB-57, facing north.	
Photo 2 – AARCO installing LSV-5, facing northeast.	

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain	X	Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/10/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 15:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental)

Site Activities

- Langan conducted groundwater sampling at LMW-1, LMW-6, and LMW-7.

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID
073_LMW-1
074_DUP-1 (Parent Sample LMW-1)
075_LMW-6
076_LMW-7

- Field Blank 078_FB-1 was collected for analysis of VOCs, SVOCs, total and dissolved TAL metals, PCBs, pesticides, herbicides, hexavalent chromium, 1,4-dioxane, and PFAS.
- Trip Blank 079_TB-1 was collected for analysis of VOCs.

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as soil disturbance was not performed.

Problems Encountered

- None

Activities Scheduled for Next Day

- Groundwater sampling

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ● Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ● NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ● NAPL Delineation Soil Boring/Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- ▨ AOC-1
- ▨ AOC-2
- ▭ AOC-1/AOC-2
- ▭ Proposed Building Footprint
- ▭ Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – Low flow groundwater purging at LMW-7, facing south.

Photo 2 – Collection of groundwater sample at LMW-1, facing south.

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/11/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 16:00

Consultant:	PERSONNEL ON SITE:
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**Langan:** Molly Gutelius (Environmental)

Site Activities

- Langan conducted groundwater sampling at LMW-3, LMW-4, LMW-8, and LMW-9.

Samples Collected

- The following soil samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic biphenyls (PCBs), pesticides, herbicides, target analyte list (TAL) metals, hexavalent chromium, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS):

Sample ID
080_LMW-9 (MS/MSD)
081_LMW-4
082_LMW-8
083_LMW-3

- Trip Blank 084_TB-2 was collected for analysis of VOCs.

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as soil disturbance was not performed.

Problems Encountered

- None

Activities Scheduled for Next Day

- Soil vapor sampling

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ● Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ● NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ● NAPL Delineation Soil Boring/Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
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4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – Low flow groundwater purging at LMW-9, facing south.

Photo 2 – Collection of groundwater sample at LMW-3, facing southeast.

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/14/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 15:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental)

Site Activities

- Langan conducted soil vapor sampling at LSV-7, LSV-8, LSV-11, LSV-12, LSV-13, LSV-16, LSV-17, and LSV-18.

Samples Collected

- The following soil vapor samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs):

Sample ID
085_Ambient-1
086_LSV-13
087_DUP-1 (LSV-13)
088_LSV-18
089_LSV-17
090_LSV-12
091_LSV-11
092_LSV-8
093_LSV-7
094_LSV-16

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as soil disturbance was not performed.

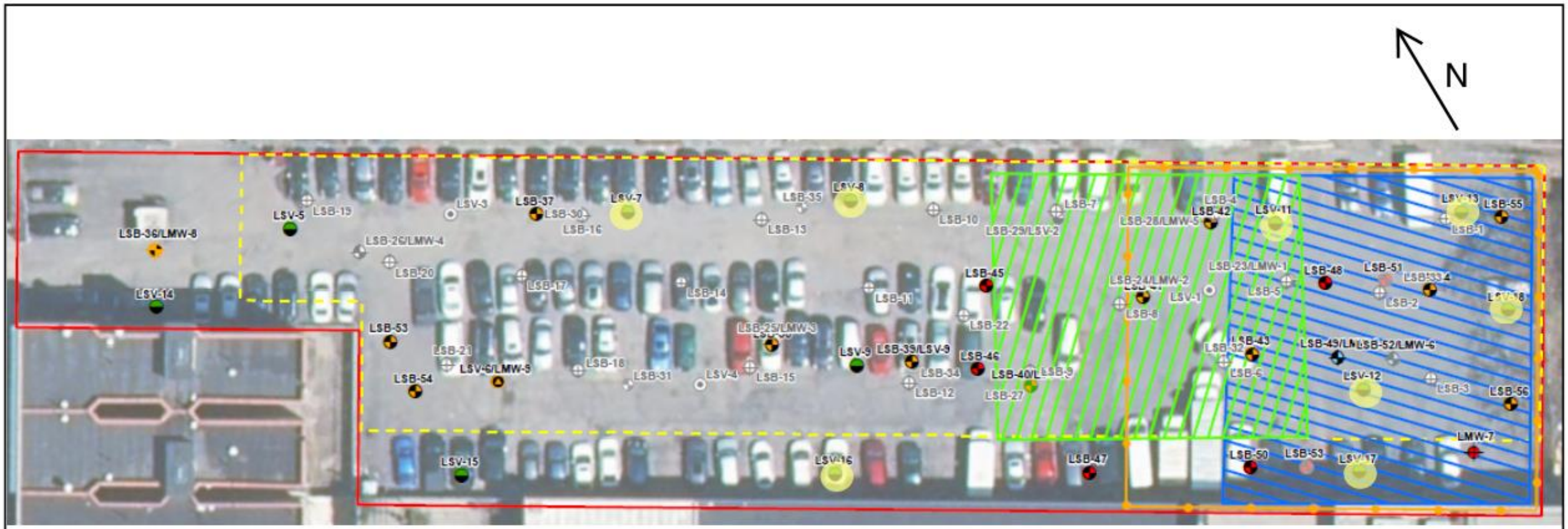
Problems Encountered

- None

Activities Scheduled for Next Day

- Soil vapor sampling

SITE MAP



Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

⊕	Site Wide Investigation Soil Boring Location	🟩	AOC-1
✚	Site Wide Investigation Soil Boring/Monitoring Well Location	🟦	AOC-2
▲	Site Wide Investigation Soil Vapor/Monitoring Well Location	🟧	AOC-1/AOC-2
●	Site Wide Investigation Soil Vapor Sampling Location	🟨	Proposed Building Footprint
●	Site Wide Investigation Soil Vapor/Soil Boring Sampling Location	🟥	Approximate Site Boundary
⊕	NAPL Delineation Soil Boring Location	W	Work Zone Air Monitoring Station
✚	NAPL Delineation Monitoring Well Location	D	Downwind Perimeter Air Monitoring Station
●	Contingent NAPL Delineation Soil Boring Location	●	Work Area
✚	NAPL Delineation Soil Boring/Monitoring Well Location		
✚	Contingent NAPL Delineation Soil Boring/ Monitoring Well Location		

NOTES

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4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – Helium testing at LSV-18, facing south.

Photo 2 – Collection of LSV-13 and DUP-1 soil vapor samples, facing east.

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/15/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 15:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Molly Gutelius (Environmental)

Site Activities

- Langan conducted soil vapor sampling at LSV-7, LSV-8, LSV-11, LSV-12, LSV-13, LSV-16, LSV-17, and LSV-18.
- Langan conducted product sampling at LMW-2 and LMW-5.
- Langan collected soil and groundwater waste characterization samples. Samples were collected from investigation derived waste stored in 55-gallon drums. One drum of soil and one drum of groundwater remain onsite for future disposal.

Samples Collected

- The following soil vapor samples were collected and submitted to the laboratory to be analyzed for volatile organic compounds (VOCs):

Sample ID
095_Ambient-2
096_LSV-14
097_LSV-5
098_LSV-15
099_LSV-6
100_LSV-9
101_LSV-10

- The following product samples were collected and submitted to the laboratory to be analyzed for fingerprint analysis, boiling point, density, and viscosity:

Sample ID
077_Product-3
102_Product-4

- Groundwater waste characterization sample 103_GW_WC_09152020 was collected for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, cyanide, extractable petroleum hydrocarbons (EPH) (spiked for fractionation), and Resource Conservation and Recovery Act (RCRA) hazardous characteristics.

- Soil waste characterization sample 104_S_WC_09152020 was collected for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, cyanide, EPH (spiked for fractionation), RCRA hazardous characteristics, and full toxicity characteristic leaching procedure (TCLP).
- Trip Blank 105_TB_09152020 was collected for analysis of VOCs associated with the waste characterization sample.

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as soil disturbance was not performed.

Problems Encountered

- None

Activities Scheduled for Next Day

- None. RI work is completed.

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ⊕ Site Wide Investigation Soil Boring Location
- ⊕ Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Soil Boring/Monitoring Well Location
- ⊕ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

NOTES

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4.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
5. AOC-3 encompasses the entire site footprint.
6. Soil boring locations LSB-37, LSB-38, LSB-39, LSB-40, LSB-41, LSB-42, LSB-43, and LSB-44 are collocated to LSB-30, LSB-25, LSB-34, LSB-27, LSB-24, LSB-28, LSB-32, and LSB-33, respectively, from the 2019 Phase II Investigation.
7. Soil boring locations LSB-51, LSB-52, and LSB-53 are contingent delineation soil boring locations that will be completed if NAPL is observed at soil boring locations LSB-48, LSB-49, and LSB-50.
8. Monitoring well LMW-6 will be installed at soil boring location LSB-52 if NAPL is present in soil boring location LSB-49.

Photo Log

Photo 1 – Helium testing at LSV-15, facing south.

Photo 2 – Collection of LSV-14 soil vapor sample, facing west.

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/17/2020
NYSDEC BCP Site No:	C231138			Time:	7:00 – 15:30

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Jagrat Jariwala (Geotechnical) **John Himmel Inc:** Steve Howell

Site Activities

- John Himmel Inc excavated two test pits (TP3 and TP-4) for Langan to observe adjacent building foundation elements along the southern Site boundary. Test pits were moved from the proposed locations due to site accessibility as shown in the daily site map below. TP-3 was excavated to a depth of 10 feet below ground surface (bgs) and TP-4 was excavated to a depth of 9.5 feet bgs. Test pits were backfilled with excavated material in the order in which it was removed and the surface was restored with cold patch asphalt.

Samples Collected

- None

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

Problems Encountered

- None

Activities Scheduled for Next Day

- Continue test pit excavations

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ⊕ Site Wide Investigation Soil Boring Location
- ⊕ Site Wide Investigation Soil Boring/Monitoring Well Location
- ▲ Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ⊕ Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ⊕ NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Soil Boring/Monitoring Well Location
- ⊕ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area
- ▨ Geotechincal Test Pit for Groundwater Level Investigation
- ▨ Geotechnical Test Pit for Adjacent Building Foundation Conditions
- ▨ Contingent Geotechincal Test Pit for Groundwater Level Investigation
- ▨ Geotechnical Soil Boring

NOTES

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2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Excavation of TP-3, facing southwest.	 2020. 9.17
Photo 2 – Excavation of TP-4, facing south.	 2020. 9.17

LANGAN

DAILY STATUS REPORT

Prepared By: Allyson Kritzer

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/18/2020
NYSDEC BCP Site No:	C231138			Time:	7:00 – 15:30

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Jagrat Jariwala (Geotechnical) **John Himmel Inc:** Steve Howell

Site Activities

- John Himmel Inc excavated three test pits (TP-1, TP-2, and TP-4) for Langan to observe adjacent building foundation elements along the southern Site boundary and to observe groundwater levels. TP-4 was re-excavated for additional observations. TP-1 was excavated to a depth of 12 feet below ground surface (bgs), TP-2 was excavated to a depth of 3.5-feet bgs, and TP-4 was excavated to a depth of 8.5 feet bgs. Test pits were backfilled with excavated material in the order in which it was removed and the surface was restored with cold patch asphalt.
- Excess material generated from TP-1, TP-2, and TP-4 which could not be returned to the subsurface was staged in a small pile in the southeastern portion of the site and covered with plastic sheeting.

Samples Collected

- None

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

Problems Encountered

- None

Activities Scheduled for Next Day

- Excess soil will be covered with cold patch asphalt on Monday 9/21/2020. Geotechnical soil boring drilling will begin on 9/22/2020.

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ⊕ Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ⊕ NAPL Delineation Soil Boring/Monitoring Well Location
- ⊕ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- ⬚ Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area
- ▚ Geotechincal Test Pit for Groundwater Level Investigation
- ▚ Geotechnical Test Pit for Adjacent Building Foundation Conditions
- ▚ Contingent Geotechincal Test Pit for Groundwater Level Investigation
- ▚ Geotechnical Soil Boring

NOTES

1. Aerial imagery provided by New York State ITS GIS Orthoimagery program, collected April 15, 2018.
2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Excavation of TP-1, facing east.

Photo 2 – Surface restoration of TP-2 with cold patch asphalt, facing west.

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70	X	70-85		>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/21/2020
NYSDEC BCP Site No:	C231138			Time:	9:30 – 11:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Keval Gandhi (Geotechnical) **John Himmel Inc:** Devin O'Neill, Eli Ramirez

Site Activities

- John Himmel Inc covered excess soil staged in the southeastern portion of the Site with cold patch asphalt.

Samples Collected

- None

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as soil disturbance was not performed.

Problems Encountered

- None

Activities Scheduled for Next Day

- Geotechnical soil boring drilling

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ◐ Site Wide Investigation Soil Boring Location
- ✚ Site Wide Investigation Soil Boring/Monitoring Well Location
- ▲ Site Wide Investigation Soil Vapor/Monitoring Well Location
- ◒ Site Wide Investigation Soil Vapor Sampling Location
- ◐ Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ◐ NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ✚ NAPL Delineation Soil Boring/Monitoring Well Location
- ✚ Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- ▨ AOC-1
- ▨ AOC-2
- ▭ AOC-1/AOC-2
- ▭ Proposed Building Footprint
- ▭ Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area
- ▚ Geotechincal Test Pit for Groundwater Level Investigation
- ▚ Geotechnical Test Pit for Adjacent Building Foundation Conditions
- ▚ Contingent Geotechincal Test Pit for Groundwater Level Investigation
- ▚ Geotechnical Soil Boring

NOTES

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3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Cold patch asphalt surface restoration, facing west.

Photo 2 – Excess test pit material covered with cold patch asphalt, facing south.

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70	X	70-85		>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/22/2020
NYSDEC BCP Site No:	C231138			Time:	7:00 – 14:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Keval Gandhi (Geotechnical) **Craig Geotechnical Drilling:** Eric Delmier, Shane Frick

Site Activities

- Langan mobilized to the site with Craig Geotechnical Drilling Co.,Inc, (Craig) for soil boring installation.
- Craig used a CME-55 truck mounted drill rig to advance soil boring LB-13 to a depth of 40-feet below ground surface (bgs) and LB-14 to a depth of 30-feet bgs.

Samples Collected

- None

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

Problems Encountered

- None

Activities Scheduled for Next Day

- Geotechnical soil boring drilling

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ● Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ● NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ● NAPL Delineation Soil Boring/Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring/ Monitoring Well Location

- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
- 🟨 Proposed Building Footprint
- 🟥 Approximate Site Boundary
- W Work Zone Air Monitoring Station
- D Downwind Perimeter Air Monitoring Station
- ● Work Area

- ▨ Geotechincal Test Pit for Groundwater Level Investigation
- ▨ Geotechnical Test Pit for Adjacent Building Foundation Conditions
- ▨ Contingent Geotechincal Test Pit for Groundwater Level Investigation
- ▨ Geotechnical Soil Boring

NOTES

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2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Geotechnical drilling at LB-13, facing north.

Photo 2 – Split spoon samples from LB-13, facing north.

LANGAN

DAILY STATUS REPORT

Prepared By: Molly Gutelius

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70		70-85	X	>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	09/23/2020
NYSDEC BCP Site No:	C231138			Time:	6:30 – 13:15

Consultant:	**PERSONNEL ON SITE:**
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**Langan:** Keval Gandhi (Geotechnical) **Craig Geotechnical Drilling:** Eric Delmier, Shane Frick

Site Activities

- Langan mobilized to the site with Craig Geotechnical Drilling Co.,Inc, (Craig) for soil boring installation
- Craig used a CME-75 truck mounted drill rig to advance soil boring LB-14 to a depth of 113-feet below ground surface (bgs).

Samples Collected

- None

Community Air Monitoring Program (CAMP)

- Langan implemented the CAMP during soil disturbance. CAMP equipment consisted of a DustTrack II and photoionization detector (PID) at a dedicated location on the downwind perimeter of the site, as well as a personal DataRam (pDR) and PID at a work zone monitoring station.
- No VOC or dust concentrations were detected in exceedance of the daily short-term exposure limit (STEL) at the downwind CAMP station.

Problems Encountered

- None

Activities Scheduled for Next Day

- None. The additional geotechnical investigation is completed.

SITE MAP

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- ● Site Wide Investigation Soil Boring Location
- ● Site Wide Investigation Soil Boring/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor/Monitoring Well Location
- ● Site Wide Investigation Soil Vapor Sampling Location
- ● Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- ● NAPL Delineation Soil Boring Location
- ● NAPL Delineation Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring Location
- ● NAPL Delineation Soil Boring/Monitoring Well Location
- ● Contingent NAPL Delineation Soil Boring/ Monitoring Well Location
- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
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- W Work Zone Air Monitoring Station
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- ● Work Area
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NOTES

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2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Rock core from LB-14, facing north.	
Photo 2 – Surface restoration at LB-14, facing south.	

LANGAN

DAILY STATUS REPORT

Prepared By: Samuel Haines

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	X
TEMP.	< 32		32-50	X	50-70		70-85		>85	

Langan Project No:	100765102	Project:	280 West 155th Street Development	Date:	02/26/2021
NYSDEC BCP Site No:	C231138			Time:	6:45 – 16:00

Consultant: Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	**PERSONNEL ON SITE:** **Langan:** Samuel Haines (Environmental), Molly Mattern (Environmental)

Site Activities

- Langan gauged all groundwater monitoring wells for presence of light non-aqueous phase liquid (LNAPL) using an oil/water interface probe prior to the commencement of the sampling event. LNAPL was detected in LMW-2 and LMW-5. LNAPL was highly viscous and a thickness measurement could not be obtained.
- Langan conducted low-flow groundwater sampling at LMW-1, LMW-3, LMW-4, LMW-6, LMW-7, LMW-8, and LMW-9 using a peristaltic pump. Samples were not collected from LMW-2 and LMW-5 due to the presence of LNAPL.

Samples Collected

- The following groundwater samples were collected and submitted to the laboratory to be analyzed for total polycyclic aromatic hydrocarbons (PAHs):

Sample ID
106_LMW-4
109_LMW-8
112_LMW-9
115_Dup-2
118_LMW-3(MS/MSD)
121_LMW-7
124_LMW-6
127_LMW-1

- The following groundwater samples were collected and submitted to the laboratory to be analyzed for dissolved PAHs:

Sample ID
107_LMW-4(Dissolved)
110_LMW-8(Dissolved)
113_LMW-9(Dissolved)
116_Dup-2(Dissolved)
119_LMW-3(Dissolved)
122_LMW-7(Dissolved)
125_LMW-6(Dissolved)
128_LMW-1(Dissolved)

- Field blank 130_FB-02262021 was collected for total PAHs.

Community Air Monitoring Program (CAMP)

- Langan did not implement the CAMP as no soil disturbance occurred.

Problems Encountered

- None.

Activities Scheduled for Next Day

- None.

SITE MAP

Basemap take from “Figure 5 – Areas of Concern and Proposed Sample Location Plan” as presented in the RIWP.

Area of Concern	Description
AOC-1	Petroleum Impacts from Historical Former Boiler Room
AOC-2	Former Commercial Laundry
AOC-1/AOC-2	Extents of potential former automotive repair operations and fuel storage
AOC-3	Filled Land/Former Hudson River

LEGEND

- Site Wide Investigation Soil Boring Location
- Site Wide Investigation Soil Boring/Monitoring Well Location
- Site Wide Investigation Soil Vapor/Monitoring Well Location
- Site Wide Investigation Soil Vapor Sampling Location
- Site Wide Investigation Soil Vapor/Soil Boring Sampling Location
- NAPL Delineation Soil Boring Location
- NAPL Delineation Monitoring Well Location
- Contingent NAPL Delineation Soil Boring Location
- NAPL Delineation Soil Boring/Monitoring Well Location
- Contingent NAPL Delineation Soil Boring/ Monitoring Well Location

- 🟩 AOC-1
- 🟦 AOC-2
- 🟧 AOC-1/AOC-2
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- Contingent Geotechincal Test Pit for Groundwater Level Investigation
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NOTES

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2. Parcel information from MapPLUTO 18v2 copyrighted by the New York City Department of Planning.
3.Proposed Building Footprint shown according to site plan SOE-004.00 prepared by JW Engineering Consulting, PC. as part of the support of excavation package dated 6 May 2020.
4. AOC-3 encompasses the entire site footprint.

Photo Log

Photo 1 – Site conditions, facing east.

Photo 2 – Groundwater low flow purging at LMW-7, facing north.

APPENDIX H

Historical Data and Boring Logs

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: Amanda Forsburg, Langan Senior Project Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: June 10, 2019

Re: Data Usability Summary Report
For 280 W 155th St
June 2019 Groundwater Samples
Langan Project No.: 100765101

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in June 2019 by Langan Engineering and Environmental Services ("Langan") at the 280 W 155th St site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total metals including mercury by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- PCBs by SW-846 Method 8082A
- Metals by SW-846 Method 6020B
- Mercury by SW-846 Method 7470A

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***
L1923415	L1923415-01	018/LMW-2	6/3/2019	VOCs, SVOCs, Metals, Hg, PCBs
L1923415	L1923415-02	019/LMW-1	6/3/2019	VOCs, SVOCs, Metals, Hg
L1923415	L1923415-03	020/LMW-3	6/3/2019	VOCs, SVOCs, Metals, Hg, PCBs
L1923415	L1923415-04	021/LMW-4	6/3/2019	VOCs, SVOCs, Metals, Hg
L1923415	L1923415-05	023/DUP-2	6/3/2019	VOCs, SVOCs, Metals, Hg
L1923415	L1923415-07	024/FB-2	6/3/2019	VOCs, SVOCs, Metals, Hg, PCBs

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L1923415	L1923415-08	029/TB-3	6/3/2019	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-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), 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.

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, field duplicates, 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*
018/LMW-2	8260C	123-91-1	1,4-DIOXANE	UJ
018/LMW-2	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
018/LMW-2	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
018/LMW-2	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
018/LMW-2	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
018/LMW-2	8260C	78-93-3	2-BUTANONE	UJ
018/LMW-2	8260C	591-78-6	2-HEXANONE	UJ
018/LMW-2	8270DSIM	91-57-6	2-METHYLNAPHTHALENE	U (0.1)
018/LMW-2	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
018/LMW-2	8270D	100-01-6	4-NITROANILINE	UJ
018/LMW-2	8270DSIM	208-96-8	ACENAPHTHYLENE	J
018/LMW-2	8260C	67-64-1	ACETONE	UJ
018/LMW-2	8260C	107-13-1	ACRYLONITRILE	UJ
018/LMW-2	8270DSIM	120-12-7	ANTHRACENE	U (0.1)
018/LMW-2	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	UJ
018/LMW-2	8260C	74-83-9	BROMOMETHANE	UJ
018/LMW-2	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
018/LMW-2	6020	7440-47-3	CHROMIUM, TOTAL	U (0.00232)
018/LMW-2	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
018/LMW-2	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
018/LMW-2	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
018/LMW-2	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ
018/LMW-2	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
018/LMW-2	8270DSIM	206-44-0	FLUORANTHENE	U (0.11)
018/LMW-2	8270DSIM	193-39-5	INDENO(1,2,3-CD)PYRENE	J
018/LMW-2	8270DSIM	91-20-3	NAPHTHALENE	U (0.1)
018/LMW-2	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
018/LMW-2	8270DSIM	85-01-8	PHENANTHRENE	U (0.1)
018/LMW-2	8270DSIM	129-00-0	PYRENE	U (0.19)
019/LMW-1	8260C	123-91-1	1,4-DIOXANE	UJ
019/LMW-1	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
019/LMW-1	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
019/LMW-1	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
019/LMW-1	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
019/LMW-1	8260C	78-93-3	2-BUTANONE	UJ
019/LMW-1	8260C	591-78-6	2-HEXANONE	UJ
019/LMW-1	8270DSIM	91-57-6	2-METHYLNAPHTHALENE	U (0.1)
019/LMW-1	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
019/LMW-1	8270D	100-01-6	4-NITROANILINE	UJ
019/LMW-1	8260C	67-64-1	ACETONE	UJ
019/LMW-1	8260C	107-13-1	ACRYLONITRILE	UJ
019/LMW-1	8270DSIM	205-99-2	BENZO(B)FLUORANTHENE	U (0.1)
019/LMW-1	8270DSIM	207-08-9	BENZO(K)FLUORANTHENE	U (0.1)
019/LMW-1	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	UJ
019/LMW-1	8260C	74-83-9	BROMOMETHANE	UJ
019/LMW-1	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
019/LMW-1	6020	7440-47-3	CHROMIUM, TOTAL	U (0.001)
019/LMW-1	8270DSIM	218-01-9	CHRYSENE	U (0.1)
019/LMW-1	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
019/LMW-1	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
019/LMW-1	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
019/LMW-1	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
019/LMW-1	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
019/LMW-1	8270DSIM	86-73-7	FLUORENE	U (0.1)
019/LMW-1	8270DSIM	91-20-3	NAPHTHALENE	U (0.1)
019/LMW-1	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
019/LMW-1	8270DSIM	85-01-8	PHENANTHRENE	U (0.1)
020/LMW-3	8260C	123-91-1	1,4-DIOXANE	UJ
020/LMW-3	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
020/LMW-3	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
020/LMW-3	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
020/LMW-3	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
020/LMW-3	8260C	78-93-3	2-BUTANONE	UJ
020/LMW-3	8260C	591-78-6	2-HEXANONE	UJ
020/LMW-3	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
020/LMW-3	8270D	100-01-6	4-NITROANILINE	UJ
020/LMW-3	8260C	67-64-1	ACETONE	UJ
020/LMW-3	8260C	107-13-1	ACRYLONITRILE	UJ
020/LMW-3	8270DSIM	205-99-2	BENZO(B)FLUORANTHENE	U (0.1)
020/LMW-3	8270DSIM	207-08-9	BENZO(K)FLUORANTHENE	U (0.1)
020/LMW-3	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	UJ
020/LMW-3	8260C	74-83-9	BROMOMETHANE	UJ
020/LMW-3	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
020/LMW-3	6020	7440-47-3	CHROMIUM, TOTAL	U (0.001)
020/LMW-3	8270DSIM	218-01-9	CHRYSENE	U (0.1)
020/LMW-3	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
020/LMW-3	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
020/LMW-3	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
020/LMW-3	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ
020/LMW-3	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
020/LMW-3	8270DSIM	86-73-7	FLUORENE	U (0.1)
020/LMW-3	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
020/LMW-3	8270DSIM	85-01-8	PHENANTHRENE	U (0.1)
021/LMW-4	8260C	123-91-1	1,4-DIOXANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
021/LMW-4	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
021/LMW-4	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
021/LMW-4	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
021/LMW-4	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
021/LMW-4	8260C	78-93-3	2-BUTANONE	UJ
021/LMW-4	8260C	591-78-6	2-HEXANONE	UJ
021/LMW-4	8270DSIM	91-57-6	2-METHYLNAPHTHALENE	U (0.1)
021/LMW-4	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
021/LMW-4	8270D	100-01-6	4-NITROANILINE	UJ
021/LMW-4	8260C	67-64-1	ACETONE	UJ
021/LMW-4	8260C	107-13-1	ACRYLONITRILE	UJ
021/LMW-4	8270DSIM	205-99-2	BENZO(B)FLUORANTHENE	U (0.11)
021/LMW-4	8270DSIM	207-08-9	BENZO(K)FLUORANTHENE	U (0.1)
021/LMW-4	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	UJ
021/LMW-4	8260C	74-83-9	BROMOMETHANE	UJ
021/LMW-4	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
021/LMW-4	6020	7440-47-3	CHROMIUM, TOTAL	U (0.00105)
021/LMW-4	8270DSIM	218-01-9	CHRYSENE	U (0.1)
021/LMW-4	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
021/LMW-4	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
021/LMW-4	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
021/LMW-4	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ
021/LMW-4	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
021/LMW-4	8270DSIM	86-73-7	FLUORENE	U (0.1)
021/LMW-4	6020	7439-92-1	LEAD, TOTAL	J
021/LMW-4	8270DSIM	91-20-3	NAPHTHALENE	U (0.1)
021/LMW-4	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
021/LMW-4	8270DSIM	85-01-8	PHENANTHRENE	U (0.24)
023/DUP-2	8260C	123-91-1	1,4-DIOXANE	UJ
023/DUP-2	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
023/DUP-2	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
023/DUP-2	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
023/DUP-2	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
023/DUP-2	8260C	78-93-3	2-BUTANONE	UJ
023/DUP-2	8260C	591-78-6	2-HEXANONE	UJ
023/DUP-2	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
023/DUP-2	8270D	100-01-6	4-NITROANILINE	UJ
023/DUP-2	8270DSIM	208-96-8	ACENAPHTHYLENE	J
023/DUP-2	8260C	67-64-1	ACETONE	UJ
023/DUP-2	8260C	107-13-1	ACRYLONITRILE	UJ
023/DUP-2	8270DSIM	120-12-7	ANTHRACENE	U (0.1)
023/DUP-2	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	J
023/DUP-2	8260C	74-83-9	BROMOMETHANE	UJ
023/DUP-2	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
023/DUP-2	6020	7440-47-3	CHROMIUM, TOTAL	U (0.001)
023/DUP-2	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
023/DUP-2	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
023/DUP-2	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
023/DUP-2	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ
023/DUP-2	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
023/DUP-2	8270DSIM	206-44-0	FLUORANTHENE	U (0.2)
023/DUP-2	8270DSIM	193-39-5	INDENO(1,2,3-CD)PYRENE	J
023/DUP-2	6020	7439-92-1	LEAD, TOTAL	J
023/DUP-2	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
023/DUP-2	8270DSIM	85-01-8	PHENANTHRENE	U (0.1)
023/DUP-2	8270DSIM	129-00-0	PYRENE	U (0.12)
024/FB-2	8260C	123-91-1	1,4-DIOXANE	UJ
024/FB-2	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
024/FB-2	8270D	95-95-4	2,4,5-TRICHLOROPHENOL	UJ
024/FB-2	8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
024/FB-2	8270D	121-14-2	2,4-DINITROTOLUENE	UJ
024/FB-2	8260C	78-93-3	2-BUTANONE	UJ
024/FB-2	8270DSIM	91-58-7	2-CHLORONAPHTHALENE	U (0.2)
024/FB-2	8260C	591-78-6	2-HEXANONE	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
024/FB-2	8270DSIM	91-57-6	2-METHYLNAPHTHALENE	U (0.1)
024/FB-2	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
024/FB-2	8270D	100-01-6	4-NITROANILINE	UJ
024/FB-2	8260C	67-64-1	ACETONE	UJ
024/FB-2	8260C	107-13-1	ACRYLONITRILE	UJ
024/FB-2	8270D	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	UJ
024/FB-2	8260C	74-83-9	BROMOMETHANE	UJ
024/FB-2	8270D	85-68-7	BUTYL BENZYL PHTHALATE	UJ
024/FB-2	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
024/FB-2	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
024/FB-2	8270D	131-11-3	DIMETHYL PHTHALATE	UJ
024/FB-2	8270D	84-74-2	DI-N-BUTYLPHTHALATE	UJ
024/FB-2	8270D	117-84-0	DI-N-OCTYLPHTHALATE	UJ
024/FB-2	8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
024/FB-2	8270DSIM	85-01-8	PHENANTHRENE	U (0.1)
029/TB-3	8260C	123-91-1	1,4-DIOXANE	UJ
029/TB-3	8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
029/TB-3	8260C	78-93-3	2-BUTANONE	UJ
029/TB-3	8260C	591-78-6	2-HEXANONE	UJ
029/TB-3	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
029/TB-3	8260C	67-64-1	ACETONE	UJ
029/TB-3	8260C	107-13-1	ACRYLONITRILE	UJ
029/TB-3	8260C	74-83-9	BROMOMETHANE	UJ
029/TB-3	8260C	10061-01-5	CIS-1,3-DICHLOROPROPENE	UJ
029/TB-3	8260C	75-71-8	DICHLORODIFLUOROMETHANE	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 initial calibration (ICAL) for instrument VOA122 exhibited response factors (RFs) below the control limit for acetone (0.032), acrylonitrile (0.042), 2-butanone (0.051), 1,4-dioxane (0.001), 4-methyl-2-pentanone (0.063), and 2-hexanone (0.097). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, 023/DUP-2, 024/FB-2, and 029/TB-3 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) analyzed on 5/8/2019 at 3:17 exhibited percent differences (%Ds) above the control limit for bromomethane (22.4%), 2,2-dichloropropane (21.3%), and cis-1,3-dichloropropene (20%). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, 023/DUP-2, 024/FB-2, and 029/TB-3 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 6/5/2019 at 7:17 exhibited a %D above the control limit for dichlorodifluoromethane (21.2%). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, 023/DUP-2, 024/FB-2, and 029/TB-3 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The lab control sample and duplicate (LCS/LCSD) for batch WG1244256 exhibited a relative percent difference (RPD) above the control limit for 2,4,5-trichlorophenol (32%), 2,6-dinitrotoluene (32%), 4-nitroaniline (31%), bis(2-ethylhexyl)phthalate (34%), butyl benzyl phthalate (40%), di-n-butylphthalate (34%), di-n-octylphthalate (37%), and dimethyl phthalate (34%). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, 023/DUP-2, and 024/FB-2 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/5/2019 at 23:54 exhibited a %D above the control limit for 2,4-dimethylphenol (35.2%). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, 023/DUP-2, and 024/FB-2 are qualified as "UJ" based on potential indeterminate bias.

The field blank (024/FB-2) exhibited a detection of fluorene (0.02 ug/L). The associated results samples 019/LMW-1, 020/LMW-3, and 021/LMW-4 are qualified as "U" at the reporting limit based on potential blank contamination.

The method blank (MB) for batch WG1244259 exhibited a detection of 2-chloronaphthalene (0.05 ug/L). The associated results in sample 024/FB-2 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1244259 exhibited a detection of 2-methylnaphthalene (0.03 ug/L). The associated results samples 019/LMW-1, 021/LMW-4, and 024/FB-2 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1244259 exhibited detections of benzo(b)fluoranthene (0.02 ug/L), benzo(k)fluoranthene (0.01 ug/L), and chrysene (0.01 ug/L). The associated results samples 019/LMW-1, 020/LMW-3, and 021/LMW-4 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The MB for batch WG1244259 exhibited a detection of naphthalene (0.12 ug/L). The associated results samples 019/LMW-1 and 021/LMW-4 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1244259 exhibited a detection of phenanthrene (0.07 ug/L). The associated results samples 019/LMW-1, 020/LMW-3, 021/LMW-4, and 024/FB-2 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The MB for batch WG1244796 exhibited detections of 2-methylnaphthalene (0.03 ug/L) and naphthalene (0.08 ug/L). The associated results in sample 018/LMW-2 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The MB for batch WG1244796 exhibited detections of anthracene (0.04 ug/L), fluoranthene (0.08 ug/L), phenanthrene (0.12 ug/L), and pyrene (0.05 ug/L). The associated results samples 018/LMW-2 and 023/DUP-2 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The LCS/LCSD for batch WG1244796 exhibited a RPD above the control limit for acenaphthylene (82%) and indeno(1,2,3-cd)pyrene (41%). The associated results samples 018/LMW-2 and 023/DUP-2 are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on 6/6/2019 at 9:33 exhibited a %D above the control limit for pentachlorophenol (20.5%). The associated results samples 018/LMW-2 and 023/DUP-2 are qualified as "UJ" based on potential indeterminate bias.

Metals by SW-846 Method 60120B:

The field blank (024/FB-2) exhibited a detection of total chromium (0.00025 mg/L). The associated results samples 018/LMW-2, 019/LMW-1, 020/LMW-3, 021/LMW-4, and 023/DUP-2 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The field duplicate and parent sample (023/DUP-2 and 021/LMW-4) exhibited an absolute difference above the RL for total lead (0.00142 mg/L). The associated results are qualified as "J" 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.

SVOCs by SW-846 Method 8270D and 8270D SIM:

The LCSD for batch WG1244256 exhibited a percent recovery above the upper control limit for 4-nitrophenol (82%). The associated results are non-detections. No qualification is necessary.

The field blank (024/FB-2) exhibited a detection of 2-chloronaphthalene (0.02 ug/L). The associated results are non-detections. No qualification is necessary.

The field blank (024/FB-2) exhibited detections of 2-methylnaphthalene (0.03 ug/L) and phenanthrene (0.04 ug/L). The associated results were previously qualified. No further action is necessary.

The MB for batch WG1244796 exhibited a detection of fluorene (0.02 ug/L). The associated results are greater than ten times the contamination. No qualification is necessary.

The field duplicate and parent sample (023/DUP-2 and 021/LMW-4) exhibited an absolute difference above the RL for phenanthrene (0.16 ug/L). The associated results were previously qualified. No further action is necessary.

Metals by SW-846 Method 6020B:

The field blank (024/FB-2) exhibited a detection of total barium (0.00132 mg/L). The associated results are greater than ten times the contamination. 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 groundwater. The following field duplicate and parent sample pairs were compared to the precision criteria:

- 023/DUP-2 and 021/LMW-4

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: Amanda Forsburg, Langan Senior Project Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: June 10, 2019

Re: Data Usability Summary Report
For 280 W 155th St
May 2019 Soil Samples
Langan Project No.: 100765101

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 280 W 155th St site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), total metals including mercury, and total solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- PCBs by SW-846 Method 8082A
- Metals by SW-846 Method 6010D
- Mercury by SW-846 Method 7471B
- 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*
L1922862	L1922862-01	001/LSB-23	5/30/2019	VOCs, SVOCs, Metals, Hg, %S
L1922862	L1922862-02	002/LSB-24	5/30/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1922862	L1922862-03	003/DUP-1	5/30/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1922862	L1922862-04	004/LSB-25	5/30/2019	VOCs, SVOCs, Metals, Hg, %S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L1922862	L1922862-05	005/LSB-26	5/30/2019	VOCs, SVOCs, Metals, Hg, %S
L1922862	L1922862-06	006/LSB-27	5/30/2019	VOCs, SVOCs, Metals, Hg, %S
L1922862	L1922862-07	007/TB-1	5/30/2019	VOCs
L1923220	L1923220-01	008/LSB-28	5/30/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-03	010/FB-1	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg
L1923220	L1923220-04	011/TB-2	5/31/2019	VOCs
L1923220	L1923220-05	012/LSB-29	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-06	013/LSB-30	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-07	014/LSB-31	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-08	015/LSB-32	5/31/2019	VOCs, SVOCs, Metals, Hg, %S
L1923220	L1923220-09	016/LSB-33	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-10	017/LSB-34	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %S
L1923220	L1923220-11	018/LSB-35	5/31/2019	VOCs, SVOCs, PCBs, Metals, Hg, %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-37A, “Polychlorinated Biphenyl (PCB) Aroclor Data Validation” (June 2015, Revision 0), 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.

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, serial dilutions, dual column performance, field duplicates, 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*
001/LSB-23	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
001/LSB-23	8260C	75-00-3	CHLOROETHANE	UJ
001/LSB-23	8260C	74-83-9	BROMOMETHANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
001/LSB-23	8270D	65-85-0	BENZOIC ACID	UJ
001/LSB-23	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
001/LSB-23	8260C	591-78-6	2-HEXANONE	UJ
001/LSB-23	8270D	51-28-5	2,4-DINITROPHENOL	UJ
001/LSB-23	8260C	123-91-1	1,4-DIOXANE	UJ
002/LSB-24	8082A	1336-36-3	PCBS, TOTAL	UJ
002/LSB-24	7471B	7439-97-6	MERCURY, TOTAL	J
002/LSB-24	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
002/LSB-24	8260C	75-00-3	CHLOROETHANE	UJ
002/LSB-24	8260C	74-83-9	BROMOMETHANE	U (150)
002/LSB-24	8270D	65-85-0	BENZOIC ACID	UJ
002/LSB-24	8082A	11100-14-4	AROCLOR 1268	UJ
002/LSB-24	8082A	37324-23-5	AROCLOR 1262	UJ
002/LSB-24	8082A	11096-82-5	AROCLOR 1260	UJ
002/LSB-24	8082A	11097-69-1	AROCLOR 1254	UJ
002/LSB-24	8082A	12672-29-6	AROCLOR 1248	UJ
002/LSB-24	8082A	53469-21-9	AROCLOR 1242	UJ
002/LSB-24	8082A	11141-16-5	AROCLOR 1232	UJ
002/LSB-24	8082A	11104-28-2	AROCLOR 1221	UJ
002/LSB-24	8082A	12674-11-2	AROCLOR 1016	UJ
002/LSB-24	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
002/LSB-24	8260C	591-78-6	2-HEXANONE	UJ
002/LSB-24	8270D	51-28-5	2,4-DINITROPHENOL	UJ
002/LSB-24	8260C	123-91-1	1,4-DIOXANE	UJ
003/DUP-1	7471B	7439-97-6	MERCURY, TOTAL	J
003/DUP-1	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
003/DUP-1	8260C	75-00-3	CHLOROETHANE	UJ
003/DUP-1	8260C	74-83-9	BROMOMETHANE	U (170)
003/DUP-1	8270D	65-85-0	BENZOIC ACID	UJ
003/DUP-1	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
003/DUP-1	8260C	591-78-6	2-HEXANONE	UJ
003/DUP-1	8270D	51-28-5	2,4-DINITROPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
003/DUP-1	8260C	123-91-1	1,4-DIOXANE	UJ
004/LSB-25	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
004/LSB-25	8260C	75-00-3	CHLOROETHANE	UJ
004/LSB-25	8260C	74-83-9	BROMOMETHANE	UJ
004/LSB-25	8270D	65-85-0	BENZOIC ACID	UJ
004/LSB-25	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
004/LSB-25	8260C	591-78-6	2-HEXANONE	UJ
004/LSB-25	8270D	51-28-5	2,4-DINITROPHENOL	UJ
004/LSB-25	8260C	123-91-1	1,4-DIOXANE	UJ
005/LSB-26	8270D	108-95-2	PHENOL	J
005/LSB-26	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
005/LSB-26	8260C	75-00-3	CHLOROETHANE	UJ
005/LSB-26	8260C	74-83-9	BROMOMETHANE	UJ
005/LSB-26	8270D	65-85-0	BENZOIC ACID	UJ
005/LSB-26	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
005/LSB-26	8260C	591-78-6	2-HEXANONE	UJ
005/LSB-26	8270D	51-28-5	2,4-DINITROPHENOL	UJ
005/LSB-26	8260C	123-91-1	1,4-DIOXANE	UJ
006/LSB-27	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
006/LSB-27	8260C	75-00-3	CHLOROETHANE	UJ
006/LSB-27	8260C	74-83-9	BROMOMETHANE	UJ
006/LSB-27	8270D	65-85-0	BENZOIC ACID	UJ
006/LSB-27	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
006/LSB-27	8260C	591-78-6	2-HEXANONE	UJ
006/LSB-27	8270D	51-28-5	2,4-DINITROPHENOL	UJ
006/LSB-27	8260C	123-91-1	1,4-DIOXANE	UJ
007/TB-1	8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
007/TB-1	8260C	91-20-3	NAPHTHALENE	UJ
007/TB-1	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
007/TB-1	8260C	67-64-1	ACETONE	J
007/TB-1	8260C	123-91-1	1,4-DIOXANE	UJ
007/TB-1	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
007/TB-1	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
007/TB-1	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
008/LSB-28	8260C	123-91-1	1,4-DIOXANE	UJ
008/LSB-28	8260C	78-93-3	2-BUTANONE	UJ
008/LSB-28	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
008/LSB-28	8260C	67-64-1	ACETONE	J
008/LSB-28	8260C	74-83-9	BROMOMETHANE	UJ
008/LSB-28	8260C	75-15-0	CARBON DISULFIDE	UJ
008/LSB-28	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
008/LSB-28	8260C	79-01-6	TRICHLOROETHENE	UJ
010/FB-1	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
010/FB-1	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
010/FB-1	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
010/FB-1	8260C	123-91-1	1,4-DIOXANE	UJ
010/FB-1	8260C	67-64-1	ACETONE	U (5.0)
010/FB-1	8270D	65-85-0	BENZOIC ACID	UJ
010/FB-1	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
010/FB-1	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
010/FB-1	8260C	91-20-3	NAPHTHALENE	UJ
010/FB-1	8260C	95-49-8	O-CHLOROTOLUENE	UJ
010/FB-1	8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
011/TB-2	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
011/TB-2	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
011/TB-2	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
011/TB-2	8260C	123-91-1	1,4-DIOXANE	UJ
011/TB-2	8260C	67-64-1	ACETONE	J
011/TB-2	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
011/TB-2	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
011/TB-2	8260C	91-20-3	NAPHTHALENE	UJ
011/TB-2	8260C	95-49-8	O-CHLOROTOLUENE	UJ
011/TB-2	8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
012/LSB-29	8260C	123-91-1	1,4-DIOXANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
012/LSB-29	8270D	51-28-5	2,4-DINITROPHENOL	UJ
012/LSB-29	8260C	78-93-3	2-BUTANONE	UJ
012/LSB-29	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
012/LSB-29	8260C	67-64-1	ACETONE	UJ
012/LSB-29	8260C	74-83-9	BROMOMETHANE	UJ
012/LSB-29	8260C	75-15-0	CARBON DISULFIDE	UJ
012/LSB-29	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
012/LSB-29	8260C	79-01-6	TRICHLOROETHENE	UJ
013/LSB-30	8260C	123-91-1	1,4-DIOXANE	UJ
013/LSB-30	8260C	78-93-3	2-BUTANONE	UJ
013/LSB-30	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
013/LSB-30	8260C	67-64-1	ACETONE	J
013/LSB-30	8260C	74-83-9	BROMOMETHANE	UJ
013/LSB-30	8260C	75-15-0	CARBON DISULFIDE	UJ
013/LSB-30	6010D	7440-47-3	CHROMIUM, TOTAL	J
013/LSB-30	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
013/LSB-30	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
013/LSB-30	8260C	79-01-6	TRICHLOROETHENE	UJ
014/LSB-31	8260C	123-91-1	1,4-DIOXANE	UJ
014/LSB-31	8260C	78-93-3	2-BUTANONE	UJ
014/LSB-31	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
014/LSB-31	8260C	67-64-1	ACETONE	UJ
014/LSB-31	8260C	74-83-9	BROMOMETHANE	UJ
014/LSB-31	8260C	75-15-0	CARBON DISULFIDE	UJ
014/LSB-31	6010D	7440-47-3	CHROMIUM, TOTAL	J
014/LSB-31	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
014/LSB-31	8260C	79-01-6	TRICHLOROETHENE	UJ
015/LSB-32	8260C	123-91-1	1,4-DIOXANE	UJ
015/LSB-32	8260C	78-93-3	2-BUTANONE	UJ
015/LSB-32	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
015/LSB-32	8260C	67-64-1	ACETONE	J
015/LSB-32	8260C	74-83-9	BROMOMETHANE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
015/LSB-32	8260C	75-15-0	CARBON DISULFIDE	UJ
015/LSB-32	6010D	7440-47-3	CHROMIUM, TOTAL	J
015/LSB-32	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
015/LSB-32	8270D	77-47-4	HEXACHLOROCYCLOPENTADIENE	UJ
015/LSB-32	7471B	7439-97-6	MERCURY, TOTAL	J
015/LSB-32	8260C	79-01-6	TRICHLOROETHENE	UJ
016/LSB-33	8260C	123-91-1	1,4-DIOXANE	UJ
016/LSB-33	8260C	78-93-3	2-BUTANONE	UJ
016/LSB-33	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
016/LSB-33	8260C	67-64-1	ACETONE	J
016/LSB-33	8260C	75-15-0	CARBON DISULFIDE	UJ
016/LSB-33	6010D	7440-47-3	CHROMIUM, TOTAL	J
016/LSB-33	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
016/LSB-33	7471B	7439-97-6	MERCURY, TOTAL	J
016/LSB-33	8260C	79-01-6	TRICHLOROETHENE	UJ
017/LSB-34	8260C	123-91-1	1,4-DIOXANE	UJ
017/LSB-34	8260C	78-93-3	2-BUTANONE	UJ
017/LSB-34	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
017/LSB-34	8260C	67-64-1	ACETONE	J
017/LSB-34	8260C	74-83-9	BROMOMETHANE	UJ
017/LSB-34	8260C	75-15-0	CARBON DISULFIDE	UJ
017/LSB-34	6010D	7440-47-3	CHROMIUM, TOTAL	J
017/LSB-34	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
017/LSB-34	8260C	79-01-6	TRICHLOROETHENE	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:

L1922862:

The lab control sample and duplicate (LCS/LCSD) for batch WG1243154 exhibited a relative percent difference (RPD) above the control limit for 1,4-dioxane (60%). The associated results in sample 007/TB-1 are qualified as "UJ" based on potential indeterminate bias.

The LCSD for batch WG1243154 exhibited a percent recovery below the lower control limit (LCL) for naphthalene (69%). The associated results in sample 007/TB-1 are qualified as "UJ" based on potential low bias.

The method blank (MB) for batch WG1243827 exhibited a detection of bromomethane (64 ug/kg). The associated results in samples 002/LSB-24 and 003/DUP-1 are qualified as "U" at the reporting limit based on potential blank contamination.

The initial calibration (ICAL) for instrument VOA100 exhibited response factors (RFs) below the control limit for 1,4-dioxane (0.002) and 4-methyl-2-pentanone (0.075). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration verification (ICV) analyzed on 3/15/2019 at 13:00 exhibited a percent difference (%D) above the control limit for dichlorodifluoromethane (-21.5%). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 3/15/2019 at 13:00 exhibited a %D above the control limit for bromomethane (-29.2%). The associated results in samples 001/LSB-23, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/24/2019 at 21:32 exhibited %Ds above the control limit for dichlorodifluoromethane (-20.6%) and acetone (-22.9%). The associated results in sample 007/TB-1 are qualified as "J" or "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 5/31/2019 at 7:01 exhibited %Ds above the control limit for trans-1,4-dichloro-2-butene (28.7%), 1,2-dibromo-3-chloropropane (24.1%), and 1,2,4-trichlorobenzene (22%), 1,2,3-trichlorobenzene (27.3%). The associated results in sample 007/TB-1 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/2/2019 at 7:35 exhibited a %D above the control limit for chloroethane (27.3%). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/2/2019 at 7:35 exhibited a RF below the control limit for 2-hexanone (0.099). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

<u>L1923220:</u>

The trip blank (011/TB-2) exhibited a detection of acetone (2.2 ug/L). The associated results in sample 010/FB-1 are qualified as "U" at the reporting limit based on potential blank contamination.

The LCS/LCSD for batch WG1244107 exhibited percent recoveries below the LCL for 1,2,3-trichlorobenzene (69%) and naphthalene (66%, 66%). The associated results in samples 010/FB-1 and 011/TB-2 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1244107 exhibited a RPD above the control limit for o-chlorotoluene (23%). The associated results in samples 010/FB-1 and 011/TB-2 are qualified as "UJ" based on potential indeterminate bias.

The LCS for batch WG1244408 exhibited a percent recovery above the upper control limit (UCL) for acetone (147%). The associated results in sample 016/LSB-33 are qualified as "J" based on potential high bias.

The ICAL for instrument VOA111 exhibited RFs below the control limit for 2-butanone (0.065), 1,4-dioxane (0.002), and 4-methyl-2-pentanone (0.078). The associated results in samples 008/LSB-28, 012/LSB-29, 013/LSB-30, 014/LSB-31, 015/LSB-32, 016/LSB-33, and 017/LSB-34 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/3/2019 at 15:26 exhibited %Ds above the control limit for dichlorodifluoromethane (20.4%) and carbon disulfide (23.6%). The associated results in samples 008/LSB-28, 012/LSB-29, 013/LSB-30, 014/LSB-31, 015/LSB-32, 016/LSB-33, and 017/LSB-34 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/3/2019 at 15:26 exhibited a RF below the control limit for trichloroethene (0.197). The associated results in samples 008/LSB-28, 012/LSB-29, 013/LSB-30, 014/LSB-31, 015/LSB-32, 016/LSB-33, and 017/LSB-34 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/24/2019 at 21:32 exhibited %Ds above the control limit for dichlorodifluoromethane (-20.6%) and 1,4-dioxane (-20.3%). The associated results in samples 010/FB-1 and 011/TB-2 are qualified as "UJ" based on potential indeterminate bias.

The ICV analyzed on 5/24/2019 at 21:32 exhibited a %D above the control limit for acetone (-22.9%). The associated results in sample 011/TB-2 are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on 6/2/2019 at 16:54 exhibited %Ds above the control limit for trans-1,4-dichloro-2-butene (29.3%), 1,2-dibromo-3-chloropropane (23.5%), hexachlorobutadiene (26.5%), and 1,2,4-trichlorobenzene (26.1%). The associated results in samples 010/FB-1 and 011/TB-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/3/2019 at 17:55 exhibited %Ds above the control limit for bromomethane (-22%) and acetone (-20.7%). The associated results in samples 008/LSB-28, 012/LSB-29, 013/LSB-30, 014/LSB-31, 015/LSB-32, and 017/LSB-34 are qualified as "J" or "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

L1922862:

The LCS/LCSD for batch WG1242934 exhibited percent recoveries above the UCL for phenol (100%, 108%). The associated results in sample 005/LSB-26 are qualified as "J" based on potential high bias.

The ICV analyzed on 5/29/2019 at 10:53 exhibited a %D above the control limit for benzoic acid (21.1%). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/1/2019 at 19:46 exhibited a %D above the control limit for 2,4-dinitrophenol (-20%). The associated results in samples 001/LSB-23, 002/LSB-24, 003/DUP-1, 004/LSB-25, 005/LSB-26, and 006/LSB-27 are qualified as "UJ" based on potential indeterminate bias.

L1923220:

The LCS for batch WG1243559 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample 010/FB-1 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 6/3/2019 at 9:33 exhibited a %D above the control limit for 2,4-dinitrophenol (-20.9%). The associated results in sample 012/LSB-29 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 6/4/2019 at 13:00 exhibited a %D above the control limit for hexachlorocyclopentadiene (22.6%). The associated results in samples 013/LSB-30 and 015/LSB-32 are qualified as "UJ" based on potential indeterminate bias.

PCBs by SW-846 Method 8082A:

L1922862:

The sample 002/LSB-24 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (28%). The associated results are qualified as "UJ" based on potential low bias.

Metals by SW-846 Method 6010D:

L1923220:

The CCV analyzed on R1193802-17 exhibited a percent recovery above the UCL for chromium (114%). The associated results in samples 013/LSB-30, 014/LSB-31, 015/LSB-32, 016/LSB-33, and 017/LSB-34 are qualified as "J" based on potential high bias.

Mercury by SW-846 Method 7471B:

L1922862:

The field duplicate and parent sample (003/DUP-1 and 002/LSB-24) exhibited an absolute difference above the RL for mercury (1.307 mg/kg). The associated results are qualified as "J" based on potential indeterminate bias.

L1923220:

The matrix spike (MS) for batch WG1244362 exhibited a percent recovery below the LCL for mercury (32%). The associated results in samples 015/LSB-32 and 016/LSB-33 are qualified as "J" 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:

L1922862:

The sample 002/LSB-24 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (164%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

The sample 003/DUP-1 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (143%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

The trip blank (007/TB-1) exhibited a detection of acetone (1.5 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1243154 exhibited a detection of 1,4-dioxane (130 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1243820 exhibited a detection of bromomethane (1.3 ug/kg). The associated results are non-detections. No qualification is necessary.

The ICV analyzed on 5/24/2019 at 21:32 exhibited a %D above the control limit for 1,4-dioxane (-20.3%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 5/31/2019 at 7:01 exhibited %Ds above the control limit for 1,4-dioxane (32.8%) and naphthalene (28.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 6/2/2019 at 7:35 exhibited a %D above the control limit for dichlorodifluoromethane (24.4%). The associated results were previously qualified. No further action is necessary.

L1923220:

The field blank (010/FB-1) exhibited a detection of acetone (3.2 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1244107 exhibited a detection of 1,4-dioxane (130 ug/L). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1244236 exhibited a detection of methyl tert butyl ether (0.26 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1244238 exhibited a detection of methyl tert butyl ether (13 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1244408 exhibited a detection of methyl tert butyl ether (0.24 ug/kg). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 6/2/2019 at 16:54 exhibited a %D above the control limit for dichlorodifluoromethane (24.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 6/2/2019 at 16:54 exhibited %Ds above the control limit for naphthalene (33.6%) and 1,2,3-trichlorobenzene (30.8%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 6/4/2019 at 6:53 exhibited a %D above the control limit for acetone (-47.4%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM:

L1922862:

The sample 005/LSB-26 exhibited a percent recovery above the UCL for the surrogate nitrobenzene-d5 (126%). The other two base/neutral surrogates were recovered within the control limits. No qualification is necessary.

The LCSD for batch WG1242934 exhibited a percent recovery above the UCL for bis(2-chloroisopropyl)ether (144%). The associated results are non-detections. No qualification is necessary.

L1923220:

The sample 008/LSB-28 exhibited a percent recoveries below the LCL for the surrogate 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted greater than ten times. No qualification is necessary.

The field blank (010/FB-1) exhibited a detection of naphthalene (0.53 ug/L). The associated results are non-detections. No qualification is necessary.

PCBs by SW-846 Method 8082A:

L1922862:

The sample 008/LSB-28 exhibited percent recoveries below the LCL for the surrogate 2,4,5,6-tetrachloro-m-xylene (0%) and decachlorobiphenyl (0%). The sample was diluted greater than ten times. No qualification is necessary.

Metals by SW-846 Method 6010D:

L1922862:

The field blank (010/FB-1) exhibited a detection of arsenic (0.002 mg/L). The associated results are non-detections. No qualification is necessary.

Mercury by SW-846 Method 7471B:

L1922862:

The laboratory duplicate and parent sample (016/LSB-33) exhibited a RPD above the control limit for mercury (79%). 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:

- 003/DUP-1 and 002/LSB-24

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: Amanda Forsburg, Langan Senior Project Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: June 10, 2019

Re: Data Usability Summary Report
For 280 W 155th St
June 2019 Soil Vapor Samples
Langan Project No.: 100765101

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil vapor samples collected in June 2019 by Langan Engineering and Environmental Services ("Langan") at the 280 W 155th St site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

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*
L1923449	L1923449-01	025/LSV-1	6/3/2019	VOCs
L1923449	L1923449-02	026/LSV-2	6/3/2019	VOCs
L1923449	L1923449-03	027/LSV-3	6/3/2019	VOCs
L1923449	L1923449-04	028/LSV-4	6/3/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), 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, target compound identification and quantification, chromatograms, 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*
025/LSV-1	TO15	64-17-5	ETHYL ALCOHOL	J
026/LSV-2	TO15	64-17-5	ETHYL ALCOHOL	J
027/LSV-3	TO15	64-17-5	ETHYL ALCOHOL	J
028/LSV-4	TO15	64-17-5	ETHYL ALCOHOL	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 Method TO-15:

The initial calibration for instrument AIRPIANO1 exhibited a relative standard deviation above the control limit for ethanol (35.34%). The associated results in samples 025/LSV-1, 026/LSV-2, 027/LSV-3, and 028/LSV-4 are qualified as "J" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. No other deficiencies were identified.

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

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Log of Boring **LSB-1** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 12.0-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started: 3/25/19	Date Finished: 3/25/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed: 3 / Undisturbed: --- / Core: ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.)	First ▽ 6 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer: ---	Weight (lbs): --- / Drop (in): ---	Drilling Foreman	Ron
Sampler	1.75 in x 4 ft Acetate Lined Macrocore	Field Engineer	Hannah Griesbach
Sampler Hammer: ---	Weight (lbs): --- / Drop (in): ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	39		0.0	Started Drilling at 3/25/2019 7:50 AM
▨		Brown m-c SAND, some coarse sand, trace brick, trace concrete, trace fine gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs for WC-1A from 1 and 5 ft
▨								0.0	
▨		Brown m-c SAND, some coarse sand, trace brick, trace concrete, trace fine gravel (dry)[FILL]	4	M-2A	Macrocore	32		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨		Light gray to dark gray f-m SAND, some silt, some organics (wet)[FILL] ▽	6	M-2B				0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Light gray to dark gray f-m SAND, some silt, some organics, Brick intrusion (3 in) at ~10.5 ft (wet)[FILL]	8	M-3	Macrocore	29		0.0	
▨								0.0	
▨			9					0.0	Collect grabs for WC-1B from 8 and 11 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 8:03 AM
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Log of Boring **LSB-2** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 13.5-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 3/25/19
Date Finished: 3/25/19
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 12 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3; Undisturbed ---; Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ∇ 6; Completion ▼ ---; 24 HR. ∇ ---
Casing Hammer: ---
Weight (lbs): ---
Drop (in): ---
Drilling Foreman: Ron
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore
Field Engineer: Hannah Griesbach
Sampler Hammer: ---
Weight (lbs): ---
Drop (in): ---

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 8:05 AM
▨		Reddish brown m-c SAND, some brick, some coarse sand, some fine gravel, Shell (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2	M-1	Macrocore	31		0.0	
								0.0	
			3					0.0	Collect grab for WC-1A from 2 ft
								0.0	
		Reddish brown m-c SAND, some brick, some coarse sand, some fine gravel (dry)[FILL]	4					0.0	
								0.0	
			5	M-2A				0.0	
								0.0	
		∇ Light gray to dark gray f-m SAND, some silt, trace clay, trace organics (wet)[FILL]	6		Macrocore	38		0.0	
								0.0	
			7	M-2B				0.0	
								0.0	
		Light gray to dark gray f-m SAND, some silt, trace brick, trace clay, trace organics (wet)[FILL]	8					0.0	
								0.0	
			9					0.0	Collect grabs for WC-1B from 7 ft
								0.0	
			10	M-3	Macrocore	36		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 8:19 AM
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\\LANGAN.COM\DATA\PAR\DATA1\100765102\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100765102_ENTERPRISE.GPJ ... 12/22/2020 5:21:20 PM ... Report: Log - LANGAN

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Log of Boring **LSB-3** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 13.5-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 3/25/19
Date Finished: 3/25/19
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 12 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 6 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---
Drilling Foreman: Ron
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore
Field Engineer: Hannah Griesbach
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	34		0.0	Started Drilling at 3/25/2019 8:20 AM
▨		Light brown m-c SAND, some brick, some wood, some coarse sand, some fine gravel, trace concrete, Styrofoam (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect grabs and VOC sample for WC-1A at 2 and 4 ft
								0.0	
		Light brown m-c SAND, some coarse sand, some fine gravel, trace concrete, trace wood (moist)[FILL]	4	M-2	Macrocore	33		0.0	
								0.0	
			5					0.0	
								0.0	
			▽ 6					0.0	
								0.0	
			7					0.0	
								0.0	
		Light gray to dark gray f-c SAND, some brick, some silt, some organics (wet)[FILL]	8	M-3	Macrocore	28		0.0	
								0.0	
			9					0.0	Collect grabs and VOC sample for WC-1B at 9 and 12 ft
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 8:37 AM
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Log of Boring **LSB-4** Sheet 1 of 1

Project 280 West 155th Street			Project No. 100765102			
Location New York, New York			Elevation and Datum Approx. 13.0-ft NAVD88			
Drilling Company AARCO Environmental Services, Corp.			Date Started 3/25/19		Date Finished 3/25/19	
Drilling Equipment Geoprobe 7822 DT			Completion Depth 12 ft		Rock Depth ---	
Size and Type of Bit 2in Stainless Steel Direct Push			Number of Samples	Disturbed 3	Undisturbed ---	Core ---
Casing Diameter (in) ---		Casing Depth (ft) ---	Water Level (ft.)	First ▽ 6	Completion ▼ ---	24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron			
Sampler 1.75 in x 4 ft Acetate Lined Macrocore			Field Engineer Hannah Griesbach			
Sampler Hammer ---	Weight (lbs) ---	Drop (in) ---				

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 8:50 AM
▨		Light brown to black f-c SAND, some brick, some wood, some silt, some f-m gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2	M-1	Macrocore	32		0.0	
▨								0.0	
▨			3					0.0	Collect grabs for WC-2A from 3 and 5 ft
▨								0.0	
▨		Light brown to black f-c SAND, some silt, some coarse sand, some fine gravel, trace brick (moist)[FILL]	4					0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			▽ 6	M-2	Macrocore	34		0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Light gray to dark gray f-c SAND, some fine gravel (wet)[FILL]	8					0.0	Slight sheen on gw in 8 to 12 MC, no odor, no PID
▨								0.0	
▨			9					0.0	Collect grabs for WC-2B from 7 and 10 ft
▨								0.0	
▨			10	M-3	Macrocore	25		0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 9:03 AM
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Log of Boring **LSB-5** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 13.54-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/25/19	Date Finished 3/25/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3; Undisturbed ---; Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 6; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer --- Weight (lbs) --- Drop (in) ---		Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- Weight (lbs) --- Drop (in) ---			

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 9:05 AM
▨		Light brown to brown m-c SAND, some brick, some fine gravel (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2	M-1	Macrocore	37		0.0	
								0.0	
			3					0.0	Collect grab for WC-2A at 2 ft
								0.0	
		Brown m-c SAND, some fine gravel (dry)[FILL]	4					0.0	
								0.0	
			5					0.0	
				M-2A				0.0	
		Dark gray SAND, some silt, some coarse sand (wet)[FILL]	▽ 6		Macrocore	37		0.0	
								0.0	
			7					0.0	
				M-2B				0.0	
		Dark gray f-c SAND, some silt, some coarse sand, trace brick (wet)[FILL]	8					0.0	Slight sheen on gw, no odor, no PID
								0.0	
			9					0.0	Collect grab for WC-2B at 8 ft
								0.0	
			10	M-3	Macrocore	33		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 9:22 AM
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Log of Boring **LSB-6** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 14.5-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	3/25/19
		Date Finished	3/25/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	12 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 6 Completion ▼ --- 24 HR. ▼ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	Ron
Weight (lbs)	---		
Drop (in)	---		
Sampler	1.75 in x 4 ft Acetate Lined Macrocore	Field Engineer	Hannah Griesbach
Sampler Hammer	---		
Weight (lbs)	---		
Drop (in)	---		

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 9:20 AM
▨		Light brown to yellow m-c SAND, some brick, some wood, trace fine gravel [FILL]		M-1	Macrocore	28		0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect grabs and VOC for WC-2A from 1 and 6 ft
								0.0	
		Black f-m SAND, some coal ash, some silt, trace fine gravel (dry)[FILL]	4	M-2A	Macrocore	37		0.0	
								0.0	
			5					0.0	
								16.3	
		Dark gray f-m SAND, some coarse sand, some fine gravel (wet)[FILL]	▽ 6	M-2B				11	
								12.1	
			7					7.7	
								7.0	
		Dark gray f-m SAND, some coarse sand, some fine gravel (wet)[FILL]	8	M-3	Macrocore	37		7.0	Sheen, odor, degraded product and PID observed from 6-12
								6.8	
			9					7.0	Collect grabs and VOC sample for WC-2B from 9 and 7 ft
								8.1	
			10					4.0	
								1.9	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 9:53 AM
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Log of Boring **LSB-7** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: Approx. 14.23-ft NAVD88
Drilling Company: AARCO Environmental Services, Corp.
Date Started: 3/25/19
Date Finished: 3/25/19
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 12 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 6 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---
Drilling Foreman: Ron
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore
Field Engineer: Hannah Griesbach
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	34		0.0	Started Drilling at 3/25/2019 10:20 AM
▨		Tannish brown to brown m-c SAND, some coarse sand, trace fine gravel, Styrofoam and ceramic (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect grabs for WC-3A from 1 and 5 ft
								0.0	
		Tannish brown to brown m-c SAND, some glass, some coarse sand, trace fine gravel (dry)[FILL]	4	M-2A	Macrocore	33		0.0	
								0.0	
			5					0.0	
								4.1	
		▽ Light gray to dark gray f-m SAND, some silt, some coarse sand, trace fine gravel (wet)[FILL]	6	M-2B				9.2	
								2.5	
			7					0.0	
								0.0	
		Light gray to dark gray f-m SAND, some silt, some coarse sand, trace fine gravel (wet)[FILL]	8	M-3	Macrocore	28		0.0	Minor sheen, some evidence of free product, PID and minor odor from 6-8; collect grabs and VOC sample for WC-3B from 10 and 8 ft
								0.0	
			9					0.1	
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 11:02 AM
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LANGAN

Log of Boring **LSB-8** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.0-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/25/19	Date Finished 3/25/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- ; Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 7	Completion ▼ --- ; 24 HR. ▼ ---
Casing Hammer --- ; Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- ; Weight (lbs) ---	Drop (in) ---		

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore			0.0	Started Drilling at 3/25/2019 11:00 AM
▨		Brown m-c SAND, some fine gravel, trace metal, trace brick, trace slag (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2			28		0.0	
▨								0.0	
▨			3					0.0	Collect grab for WC-3A from 6 ft
▨								0.0	
▨		Brown m-c SAND, some fine gravel, trace metal, trace brick, trace slag (dry)[FILL]	4	M-2A	Macrocore			0.0	
▨								0.0	
▨			5					0.0	
▨		Dark gray f-m SAND, some silt, trace fine gravel (moist)[FILL]		M-2B				0.0	
▨			6			30		0.0	
▨								0.0	
▨			▽ 7					0.0	
▨								0.0	
▨		Dark gray to black f-m SAND, some silt, trace fine gravel, Brick intrusion at 11.5 (wet)[FILL]	8	M-3	Macrocore			0.0	
▨								0.0	
▨			9					0.0	Collect grab for WC-3B at 11 ft
▨								0.0	
▨			10			41		0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 11:20 AM
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LANGAN

Log of Boring **LSB-9** Sheet 1 of 1

Project 280 West 155th Street			Project No. 100765102		
Location New York, New York			Elevation and Datum Approx. 15.4-ft NAVD88		
Drilling Company AARCO Environmental Services, Corp.			Date Started 3/25/19	Date Finished 3/25/19	
Drilling Equipment Geoprobe 7822 DT			Completion Depth 12 ft	Rock Depth ---	
Size and Type of Bit 2in Stainless Steel Direct Push			Number of Samples	Disturbed 3	Undisturbed --- / Core ---
Casing Diameter (in) ---		Casing Depth (ft) ---	Water Level (ft.)	First ∇ 7	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron		
Sampler 1.75 in x 4 ft Acetate Lined Macrocore			Field Engineer Hannah Griesbach		
Sampler Hammer ---	Weight (lbs) ---	Drop (in) ---			

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	34		0.0	Started Drilling at 3/25/2019 11:20 AM
▨		Brown m-c SAND, some fine gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs and VOC sample for WC-3A from 2 and 4 ft
▨								0.0	
▨		Reddish brown m-c SAND, some fine gravel, trace slag (dry)[FILL]	4	M-2A	Macrocore	37		0.0	
▨								0.0	
▨			5					0.0	
▨		Gray f-m SAND, trace coarse sand, trace fine gravel (moist)[FILL]						0.0	
▨			6	M-2B				0.0	
▨								0.0	
▨			∇ 7					0.2	
▨								0.0	
▨		Gray f-m SAND, some fine gravel, trace coarse sand (wet)[FILL]	8	M-3	Macrocore	23		0.0	Slight sheen and degraded product on gw, no odor, no PID
▨								1.5	
▨			9					0.0	Collect grabs for WC-3B from 7 and 9 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 11:53 AM
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LANGAN

Log of Boring **LSB-10** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 14.69-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/25/19	Date Finished 3/25/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 8	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 12:30 PM
▨		Black to dark brown m-c SAND, some fine gravel, trace slag, trace brick (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2	M-1	Macrocore	34		0.0	
▨								0.0	
▨			3					0.0	Collect grabs for WC-4A from 4 and 5 ft
▨								0.0	
▨		Black to reddish brown m-c SAND, some fine gravel, trace brick, Shell fragments (dry)[FILL]	4					0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6	M-2	Macrocore	32		0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Light gray f-c SAND, some fine gravel (wet)[FILL]	▽ 8					0.0	
▨								0.0	
▨			9					0.0	Collect grab for WC-4B from 10 ft
▨								0.0	
▨			10	M-3	Macrocore	22		0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 12:44 PM
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LANGAN

Log of Boring **LSB-11** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.52-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/25/19	Date Finished 3/25/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 6	Completion ▼ --- 24 HR. ▼ ---
Casing Hammer --- Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 1:35 PM
▨		Tannish brown m-c SAND, trace fine gravel, Shell fragments (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2	M-1	Macrocore	29		0.0	
▨								0.0	
▨			3					0.0	Collect grab for WC-4A from 2 ft
▨								0.0	
▨		Brown m-c SAND, some brick, trace fine gravel (dry)[FILL]	4					0.0	
▨								0.0	
▨			5					0.0	
▨				M-2A				0.0	
▨		Dark gray f-c SAND, some silt (wet)[FILL] ▽	6		Macrocore	33		0.0	
▨								0.0	
▨			7					0.0	
▨				M-2B				0.0	
▨		Dark gray f-c SAND, some silt, some fine gravel (wet)[FILL]	8					0.0	
▨								0.0	
▨			9					0.0	Collect grabs for WC-4B from 6 and 12 ft
▨								0.0	
▨			10	M-3	Macrocore	16		0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/25/2019 1:52 PM
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LANGAN

Log of Boring **LSB-12** Sheet 1 of 1

Project
280 West 155th Street

Project No.
100765102

Location
New York, New York

Elevation and Datum
Approx. 15.82-ft NAVD88

Drilling Company
AARCO Environmental Services, Corp.

Date Started
3/25/19

Date Finished
3/25/19

Drilling Equipment
Geoprobe 7822 DT

Completion Depth
12 ft

Rock Depth

Size and Type of Bit
2in Stainless Steel Direct Push

Number of Samples — Disturbed 3 — Undisturbed --- — Core ---

Casing Diameter (in)

Casing Depth (ft)

Water Level (ft.) — First ∇ 8 — Completion ▼ --- — 24 HR. ▼ ---

Casing Hammer --- Weight (lbs) --- Drop (in) ---

Drilling Foreman
Ron

Sampler
1.75 in x 4 ft Acetate Lined Macrocore

Sampler Hammer --- Weight (lbs) --- Drop (in) ---

Field Engineer
Hannah Griesbach

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/25/2019 1:55 PM
▨		Brown f-c SAND, some fine gravel, trace wood, trace concrete, trace brick (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2	M-1	Macrocore	29		0.0	
								0.0	
			3					0.0	Collect grabs and VOC sample from 3 and 1 ft
								0.0	
		Brown f-c SAND, some fine gravel, trace concrete, Charcoal (dry)[FILL]	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	M-2	Macrocore	32		0.0	
								0.0	
			7					0.0	
								0.0	
		Light gray to dark gray f-m SAND, some coarse sand, trace fine gravel, Shells (wet)[FILL] ∇	8					0.0	
								0.0	
			9					0.0	Collect grabs and VOC sample from 9 and 11 ft
								0.0	
			10	M-3	Macrocore	37		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/25/2019 2:37 PM
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\\LANGAN.COM\DATA\PAR\DATA1\100765102\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100765102_ENTERPRISE.GPJ ... 12/22/2020 5:21:04 PM ... Report: Log - LANGAN

LANGAN

Log of Boring **LSB-13** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 15.18-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	3/26/19
		Date Finished	3/26/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	12 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 6 / Completion ▼ --- / 24 HR. ▼ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	Ron
Weight (lbs)	---	Drop (in)	---
Sampler	1.75 in x 4 ft Acetate Lined Macrocore	Field Engineer	Hannah Griesbach
Sampler Hammer	---		
Weight (lbs)	---	Drop (in)	---

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	36		0.0	Started Drilling at 3/26/2019 7:35 AM
▨		Dark brown to reddish m-c SAND, some wood, some fine gravel, trace brick, Shell fragments (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs for WC-5A from 1 and 4 ft
▨								0.0	
▨		Dark brown to reddish brown f-c SAND, some fine gravel, Charcoal (moist)[FILL]	4	M-2	Macrocore	37		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨		▽	6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Light gray f-m SAND, some silt, some coarse sand, some fine gravel (wet)[FILL]	8	M-3	Macrocore	30		0.0	
▨								0.0	
▨			9					0.0	Collect grabs for WC-5B from 7 and 10 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 8:02 AM
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LANGAN

Log of Boring **LSB-14** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.45-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/26/19	Date Finished 3/26/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ∇ 8 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) --- Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer ---	Weight (lbs) --- Drop (in) ---		

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/26/2019 8:05 AM
▨		Light brown to dark brown f-c SAND, some brick, some fine gravel, Charcoal (dry)[FILL]		M-1	Macrocore	33		0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grab for WC-5A from 3 ft
▨								0.0	
▨		Light brown to dark brown f-c SAND, some fine gravel, trace brick (dry)[FILL]	4	M-2	Macrocore	36		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Dark gray f-m SAND, some silt, some coarse sand, some fine gravel (wet)[FILL]	∇ 8	M-3	Macrocore	33		0.0	
▨								0.0	
▨			9					0.0	Collect grab for WC-5B from 11 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 8:36 AM
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LANGAN

Log of Boring **LSB-15** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 15.71-ft NAVD88	
Drilling Company: AARCO Environmental Services, Corp.		Date Started: 3/26/19	Date Finished: 3/26/19
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ ---	Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): ---	Drop (in): ---	Drilling Foreman: Ron	
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer: Hannah Griesbach	
Sampler Hammer: --- Weight (lbs): ---	Drop (in): ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	43		0.0	Started Drilling at 3/26/2019 8:35 AM
▨		Brown to light brown f-c SAND, some brick, some fine gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs and VOC sample for WC-5A from 5 and 2 ft
▨								0.0	
▨		Brown to light brown f-c SAND, some fine gravel (dry)[FILL]	4	M-2A	Macrocore	38		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨		Gray to dark gray f-c SAND, some silt, some fine gravel (moist)[FILL]	6	M-2B				0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Gray to dark gray f-c SAND, some silt, some fine gravel (moist)[FILL]	8	M-3	Macrocore	15		0.0	
▨								0.0	
▨			9					0.0	Collect grabs and VOC sample for WC-5B from 12 and 6 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 9:09 AM
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LANGAN

Log of Boring **LSB-16** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.5-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/26/19	Date Finished 3/26/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 7 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	40		0.0	Started Drilling at 3/26/2019 9:10 AM
▨		Brown to light brown f-c SAND, some fine gravel, trace brick, Charcoal (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect grabs for WC-6A from 4 and 5 ft
								0.0	
		Brown to light brown f-c SAND, some fine gravel, Charcoal (dry)[FILL]	4	M-2A	Macrocore	37		0.0	
								0.0	
			5					0.0	
		Gray to dark gray f-c SAND, some silt, some fine gravel (moist)[FILL]						0.0	
			6					0.0	
								0.0	
			▽ 7	M-2B				0.0	
								0.0	
		Gray to dark gray f-c SAND, some silt, some fine gravel (wet)[FILL]	8	M-3	Macrocore	23		0.0	
								0.0	
			9					0.0	Collect grabs for WC-6B from 8 and 12 ft
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/26/2019 9:41 AM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-17** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 16.0-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/26/19	Date Finished 3/26/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 | Undisturbed --- | Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 8 | Completion ▼ --- | 24 HR. ▼ ---
Casing Hammer --- | Weight (lbs) ---	Drop (in) ---	Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer --- | Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	32		0.0	Started Drilling at 3/26/2019 9:40 AM
▨		Brown f-c SAND, some fine gravel, Brick (4 in) and asphalt (5 in) intrusion (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grab for WC-6A from 3 ft
▨								0.0	
▨		Brown f-c SAND, some fine gravel, trace brick, trace glass (dry)[FILL]	4	M-2	Macrocore	29		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Light gray f-c SAND, some silt, some fine gravel (wet)[FILL] ▽	8	M-3	Macrocore	29		0.0	
▨								0.0	
▨			9					0.0	Collect grab for WC-6B from 7 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 9:50 AM
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Log of Boring **LSB-18** Sheet 1 of 1

Project: 280 West 155th Street			Project No.: 100765102		
Location: New York, New York			Elevation and Datum: Approx. 16.56-ft NAVD88		
Drilling Company: AARCO Environmental Services, Corp.			Date Started: 3/26/19	Date Finished: 3/26/19	
Drilling Equipment: Geoprobe 7822 DT			Completion Depth: 12 ft	Rock Depth: ---	
Size and Type of Bit: 2in Stainless Steel Direct Push			Number of Samples	Disturbed: 3	Undisturbed: --- Core: ---
Casing Diameter (in): ---		Casing Depth (ft): ---	Water Level (ft.)	First: ▽ 8	Completion: ▼ --- 24 HR.: ▼ ---
Casing Hammer: ---	Weight (lbs): ---	Drop (in): ---	Drilling Foreman: Ron		
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore			Field Engineer: Hannah Griesbach		
Sampler Hammer: ---	Weight (lbs): ---	Drop (in): ---			

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	32		0.0	Started Drilling at 3/26/2019 9:50 AM
▨		Brown f-c SAND, some concrete, some f-m gravel, trace glass (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs and VOC sample for WC-6A from 1 and 2 ft
▨								0.0	
▨		Brown f-c SAND, some concrete, some f-m gravel, trace slag, trace wood, Tile fragments (dry)[FILL]	4	M-2	Macrocore	42		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		Brown to dark gray f-c SAND, some silt, some f-c gravel (wet)[FILL]	▽ 8	M-3	Macrocore	34		0.0	
▨								0.0	
▨			9					0.0	Collect grabs and VOC sample for WC-6B from 9 and 10 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 10:19 AM
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			15						
			16						
			17						
			18						
			19						
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Log of Boring **LSB-19** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 15.7-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started	3/26/19
		Date Finished	3/26/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	12 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ --- Completion ▼ --- 24 HR. ▼ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	Ron
Weight (lbs)	---		
Drop (in)	---		
Sampler	1.75 in x 4 ft Acetate Lined Macrocore	Field Engineer	Hannah Griesbach
Sampler Hammer	---		
Weight (lbs)	---		
Drop (in)	---		

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.)
■		Asphalt and sub-base (5 inches)	0					0.0	Started Drilling at 3/26/2019 10:30 AM
▨		Brown to dark brown f-m SAND, some coarse sand, some f-m gravel, trace glass, trace brick (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2	M-1	Macrocore	30		0.0	
								0.0	
			3					0.0	Collect grabs for WC-7A and DUP from 1 and 6 ft
								0.0	
		Brown to dark f-c SAND, some concrete, some f-m gravel, trace brick, Trace asphalt (dry)[FILL]	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	M-2	Macrocore	17		0.0	
								0.0	
			7					0.0	
								0.0	
		Brown to dark gray f-c SAND, some f-m gravel, trace silt (dry)[FILL]	8					0.0	
								0.0	
			9					0.0	Collect grabs for WC-7B from 11 and 12 ft
								0.0	
			10	M-3	Macrocore	24		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/26/2019 10:54 AM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-20** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.92-ft NAVD88	
Drilling Company AARCO Environmental Services, Corp.		Date Started 3/26/19	Date Finished 3/26/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3, Undisturbed ---, Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ∇ 8, Completion ▼ ---, 24 HR. ▼ ---	
Casing Hammer ---, Weight (lbs) ---, Drop (in) ---		Drilling Foreman Ron	
Sampler 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer Hannah Griesbach	
Sampler Hammer ---, Weight (lbs) ---, Drop (in) ---			

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	25		0.0	Started Drilling at 3/26/2019 11:00 AM
▨		Dark brown to black f-c SAND, some brick, some concrete, some fine gravel (dry)[FILL]						0.0	
▨			1					0.0	
▨								0.0	
▨			2					0.0	
▨								0.0	
▨			3					0.0	Collect grabs for WC-7A and DUP from 4 and 5 ft
▨								0.0	
▨		Dark brown to black f-c SAND, some brick, some concrete, some fine gravel, trace slag, trace wood (dry)[FILL]	4	M-2	Macrocore	13		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
▨			6					0.0	
▨								0.0	
▨			7					0.0	
▨								0.0	
▨		∇ Dark gray to black f-m SAND, some silt, trace fine gravel (wet)[FILL]	8	M-3	Macrocore	23		0.0	
▨								0.0	
▨			9					0.0	Collect grabs for WC-7B from 8 and 9 ft
▨								0.0	
▨			10					0.0	
▨								0.0	
▨			11					0.0	
▨								0.0	
			12						Bottom of boring at 3/26/2019 11:17 AM
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Log of Boring **LSB-21** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	Approx. 16.40-ft NAVD88
Drilling Company	AARCO Environmental Services, Corp.	Date Started: 3/26/19	Date Finished: 3/26/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed: 3 Undisturbed: --- Core: ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.)	First ▽ 8 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: ---	Weight (lbs): --- Drop (in): ---	Drilling Foreman	Ron
Sampler	1.75 in x 4 ft Acetate Lined Macrocore	Field Engineer	Hannah Griesbach
Sampler Hammer: ---	Weight (lbs): --- Drop (in): ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	21		0.0	Started Drilling at 3/26/2019 11:20 AM
▨		Dark brown f-c SAND, some fine gravel, trace concrete, brick fragments (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect grab and VOC sample for WC-7A and DUP from 3 ft
								0.0	
		Dark brown f-c SAND, some fine gravel, trace metal, trace brick, concrete fragments (dry)[FILL]	4	M-2	Macrocore	30		0.0	
								0.0	
			5					0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
		Reddish brown to black f-c SAND, some silt, some fine gravel, trace organics (wet)[FILL]	▽ 8	M-3	Macrocore	24		0.0	
								0.0	
			9					0.0	Collect grab and VOC sample for WC-7B from 10 ft
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 3/26/2019 11:55 AM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN Log of Boring **LSB-22** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 15.0-ft NAVD88	
Drilling Company: AARCO Environmental Services, Corp.		Date Started: 3/25/19	Date Finished: 3/25/19
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 16 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 4	Undisturbed --- / Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 8	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer: --- / Weight (lbs): ---	Drop (in): ---	Drilling Foreman: Ron	
Sampler: 1.75 in x 4 ft Acetate Lined Macrocore		Field Engineer: Hannah Griesbach	
Sampler Hammer: --- / Weight (lbs): ---	Drop (in): ---		

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.)
■		Asphalt and sub-base (5 inches)	0	M-1	Macrocore	38		0.0	Started Drilling at 3/25/2019 12:40 PM
▩		Light gray to orangish brown f-c SAND, some wood, some fine gravel (dry)[FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
		Light gray to orangish brown f-c SAND, some wood, some fine gravel (dry)[FILL]	4	M-2	Macrocore	30		0.0	
								0.0	
			5					0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
		Light gray to dark gray f-c SAND, some silt, some fine gravel (wet)[FILL]	▽ 8	M-3	Macrocore	35		0.0	
								0.0	
			9					0.0	
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
		Dark gray f-c SAND, some silt, some fine gravel, Brick intrusion at 18in (wet)[FILL]	12		Macrocore	39		0.0	AARCO could not retrieve 12-16 MC, offset and redrill
								0.0	
			13	M-4A				0.0	
▨		Gray CLAY, some coarse sand, some organics (wet)						0.0	
			14					0.0	Collect grabs and VOC sample (15) for WC-8 from 12-16
								0.0	
			15	M-4B				0.0	
								0.0	
			16						Bottom of boring at 3/25/2019 1:37 PM
			17						
			18						
			19						
			20						

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Log of Boring **LSB-23/LMW-1** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 14.24-ft NAVD88	
Drilling Company Aquifer Drilling & Testing		Date Started 5/30/19	Date Finished 5/30/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 7 / Completion ▼ 7.2 / 24 HR. ▽ ---
Casing Hammer --- / Weight (lbs) ---	Drop (in) ---	Drilling Foreman RJ Singh	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer	
Sampler Hammer --- / Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt	0	1	Macrocore	38		0 0	Started Drilling at 5/30/2019 9:51 AM
▨		Brown f-c SAND, some brick, trace wood, trace concrete, trace silt, trace f-c gravel (dry)[FILL]	1					0 0	
▨			2					0 0	
▨		Light tannish brown f-c SAND, trace slag, trace concrete, trace silt, trace f-c gravel (moist)[FILL]	3					0 0	001/LSB-23 collected from 3.5- to 5.5-feet bgs at 1030. VOCs from 4.5- to 5-feet bgs
▨			4					0 0	
▨		Light tannish brown f-c SAND, trace slag, trace concrete, trace silt, trace f-c gravel (moist)[FILL] Light tannish brown f-c SAND, trace slag, trace concrete, trace brick, trace silt, trace f-c gravel, trace ceramic (moist)[FILL]	5	2	Macrocore	30		0 0	
▨			6					0 0	
▨		▽▼ Gray silty m-c SAND, some coarse sand, trace f-c gravel (moist)[FILL] Grayish white silty f-c SAND, trace concrete, trace f-c gravel (wet)[FILL]	7					0 0	
▨			8					0 0	
▨			9					0 0	
▨		Brown f-c SAND, some silt, trace brick, trace glass, trace f-c gravel (wet)[FILL]	10	3	Macrocore	21		0 0	
▨			11					0 0	
▨			12					0 0	
▨			13					0 0	
▨			14					0 0	
			15						Bottom of boring at 5/30/2019 10:20 AM
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-24/LMW-2** Sheet 1 of 1

Project: 280 West 155th Street
Project No.: 100765102
Location: New York, New York
Elevation and Datum: 15.15-ft NAVD88
Drilling Company: Aquifer Drilling & Testing
Date Started: 5/30/19
Date Finished: 5/30/19
Drilling Equipment: Geoprobe 7822 DT
Completion Depth: 15 ft
Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push
Number of Samples: Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in): ---
Casing Depth (ft): ---
Water Level (ft.): First ▽ 7.5 Completion ▼ 7.6 24 HR. ▼ ---
Casing Hammer: --- Weight (lbs): --- Drop (in): ---
Drilling Foreman: RJ Singh
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore
Sampler Hammer: --- Weight (lbs): --- Drop (in): ---
Field Engineer: Allyson Kritzer

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.)
■		Asphalt	0	1	Macrocore	33		0	Started Drilling at 5/30/2019 11:01 AM
▨		Tannish brown f-c SAND, some brick, trace concrete, trace silt, trace f-c gravel (dry)[FILL]						0	
		Tannish white silty f-c SAND, some concrete, trace fine gravel (moist)[FILL]	1					0	
								0	
		Tannish brown f-c SAND, some concrete, trace brick, trace silt, trace f-c gravel (dry)[FILL]	2					0	Refusal encountered at 2.0ft x2. offset 3'
								0	
		Orangish brown f-m SAND, some silt, some coarse sand, trace concrete, trace brick, trace slag, trace asphalt (moist)[FILL]	3					0	
								0	
			4					0	
								0	
		Orangish brown f-m SAND, some silt, some coarse sand, trace concrete, trace brick, trace slag, trace asphalt (moist)[FILL]	5	2	Macrocore	29		0	
								0	
			6					0	
								2	
			7					8	
		▼ Grayish brown f-c SAND, some silt, trace brick, trace concrete, trace f-c gravel (wet)[FILL]						17.5	Product on top of groundwater from 7.5- to 8-feet bgs. Slight odors from 7.5- to 10-feet bgs
			8					3.5	
								1.5	
			9					1.5	
								1.5	002/LSB-24 and 003/DUP-1 collected from 7.5- to 9.5-feet bgs at 1135 and 1140, respectively. VOCs from 7.5- to 8-feet bgs
		Dark grayish black f-c SAND, some silt, trace brick, trace concrete, trace f-c gravel (wet)[FILL]	10	3	Macrocore	7		0	
								0	
			11					0	
								0	
			12					0	
								0	
			13					0	
								0	
			14					0	
								0	
			15						Bottom of boring at 5/30/2019 11:20 AM
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-25/LMW-3** Sheet 1 of 1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation and Datum	15.91-ft NAVD88
Drilling Company	Aquifer Drilling & Testing	Date Started	5/30/19
		Date Finished	5/30/19
Drilling Equipment	Geoprobe 7822 DT	Completion Depth	15 ft
		Rock Depth	---
Size and Type of Bit	2in Stainless Steel Direct Push	Number of Samples	Disturbed 3 Undisturbed --- Core ---
Casing Diameter (in)	---	Water Level (ft.)	First ▽ 9.5 Completion ▼ 8 24 HR. ▽ ---
Casing Depth (ft)	---		
Casing Hammer	---	Drilling Foreman	RJ Singh
Weight (lbs)	---		
Drop (in)	---		
Sampler	1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer	Allyson Kritzer
Sampler Hammer	---		
Weight (lbs)	---		
Drop (in)	---		

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.)
■		Asphalt	0					0	Started Drilling at 5/30/2019 12:19 PM
▨		Brown to tannish brown f-c SAND, trace brick, trace concrete, trace wood, trace silt, trace f-c gravel (moist)[FILL]						0	
▨			1					0	
▨								0	
▨			2					0	
▨		Orangish brown f-c SAND, some silt, trace slag, trace concrete, trace f-c gravel (moist)[FILL]		1	Macrocore	35		0	
▨			3					0	
▨								0	
▨			4					0	
▨								0	
▨		Grayish brown f-c SAND, some concrete, some fine gravel, trace silt (moist)[FILL]	5					0	
▨								0	
▨			6					0	
▨								0	
▨			7					0	
▨				2	Macrocore	39		0	004/LSB-25 sampled from 7.5 to 9.5-feet bgs at 1255. VOCs from 7.5- to 8-feet bgs
▨		▼	8					0	
▨								0	
▨			9					0	
▨		▽ Grayish white f-c SAND, some silt, some f-c gravel, trace concrete (wet)[FILL]						0	
▨		Dark gray f-m SAND, some silt, trace concrete, trace fine gravel (wet)[FILL]	10					0	
▨								0	
▨			11					0	
▨								0	
▨			12					0	
▨				3	Macrocore	8		0	
▨			13					0	
▨								0	
▨			14					0	
▨								0	
			15						Bottom of boring at 5/30/2019 12:30 PM
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-26/LMW-4** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum 15.92-ft NAVD88	
Drilling Company Aquifer Drilling & Testing		Date Started 5/30/19	Date Finished 5/30/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 15 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3; Undisturbed ---; Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 10.5; Completion ▼ 9.2; 24 HR. ▼ ---	
Casing Hammer ---; Weight (lbs) ---; Drop (in) ---		Drilling Foreman RJ Singh	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer	
Sampler Hammer ---; Weight (lbs) ---; Drop (in) ---			

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.)
■ ▨		Asphalt Dark brown f-c SAND, trace concrete, trace silt, trace fine gravel (dry)[FILL]	0					0 0	Started Drilling at 5/30/2019 1:21 PM
▨		Light tan f-m SAND, some brick, some concrete, trace silt, trace f-c gravel (dry)[FILL]	1					0 0	
▨			2	1	Macrocore	33		0 0	
▨			3					0 0	
▨			4					0 0	
▨		Light tan f-m SAND, some brick, some concrete, trace silt, trace f-c gravel (dry)[FILL]	5					0 0	
▨			6					0 0	
▒		Concrete	7	2	Macrocore	27		0 0	
▒ ▨		Tannish brown f-c SAND, some silt, trace concrete, trace f-c gravel (moist)[FILL]	8					0 0	005/LSB-26 collected from 8.5- to 10.5-feet bgs at 1350. VOCs from 9.5- to 10-feet bgs
▨		▼	9					0 0	
▨		Tannish brown f-c SAND, some silt, trace concrete, trace brick, trace f-c gravel (moist)[FILL] ▽ Dark grayish brown f-m SAND, some silt, trace brick, trace concrete, trace coarse sand, trace fine gravel (wet)[FILL]	10					0 0	
▨			11					0 0	
▨			12	3	Macrocore	28		0 0	
▨			13					0 0	
▨			14					0 0	
			15						Bottom of boring at 5/30/2019 1:40 PM
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-27** Sheet 1 of 1

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation and Datum Approx. 15.4-ft NAVD88
Drilling Company Aquifer Drilling & Testing	Date Started 5/30/19 — Date Finished 5/30/19
Drilling Equipment Geoprobe 7822 DT	Completion Depth 12 ft — Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push	Number of Samples — Disturbed 3 — Undisturbed --- — Core ---
Casing Diameter (in) --- — Casing Depth (ft) ---	Water Level (ft.) — First ▽ 7.5 — Completion ▼ --- — 24 HR. ▼ ---
Casing Hammer --- — Weight (lbs) --- — Drop (in) ---	Drilling Foreman RJ Singh
Sampler 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer Allyson Kritzer
Sampler Hammer --- — Weight (lbs) --- — Drop (in) ---	

Number	Type	Recov. (in)	Penetr. resist BL/6in	Depth (ft)
1	Macrocore	37		0 – 5
2	Macrocore	21		5 – 10
3	Macrocore	8		10 – 12

Depth Scale	Elev. (ft)	Sample Description	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
0		Asphalt	0	Started Drilling at 5/30/2019 2:28 PM
		Dark brown f-c SAND, trace concrete, trace brick, trace glass, trace silt, trace fine gravel (dry)[FILL]	0	
1			0	
			0	
2			0	
		Orangish brown f-c SAND, some silt, trace concrete, trace brick, trace slag, trace glass, trace f-c gravel (moist)[FILL]	0	
3			0	
			0	
4			0	
			0	
5		Orangish brown f-c SAND, some silt, trace concrete, trace brick, trace slag, trace f-c gravel (moist)[FILL]	0	
			0	
6			2	006/LSB-27 collected from 6- to 8-feet bgs at 1450. VOC from 7.5- to 8-feet bgs
			3	
7			9.5	
▽		Dark grayish brown f-m SAND, some silt, trace concrete, trace brick, trace coarse sand, trace f-c gravel (wet)[FILL]	7	Slight product on groundwater at 7.5-feet bgs. Slight odors 6- to 8.5-feet bgs
8			4	
			1	
9			0	
			0	
10		Dark grayish brown f-m SAND, some silt, trace concrete, trace brick, trace coarse sand, trace f-c gravel (wet)[FILL]	0	
			0	
11			0	
			0	
12				Bottom of boring at 5/30/2019 2:45 PM
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15				
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Log of Boring **LSB-28/LMW-5** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: 14.05-ft NAVD88	
Drilling Company: Aquifer Drilling & Testing		Date Started: 5/30/19	Date Finished: 5/30/19
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples	Disturbed: 3 Undisturbed: --- Core: ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.)	First ∇ 7.5 Completion ▼ --- 24 HR. ▼ ---
Casing Hammer: ---	Weight (lbs): --- Drop (in): ---	Drilling Foreman: RJ Singh	
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer: Allyson Kritzer	
Sampler Hammer: ---	Weight (lbs): --- Drop (in): ---		

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.)
■		Asphalt	0	1	Macrocore	39		0	Started Drilling at 5/30/2019 3:33 PM
▨		Tannish brown f-c SAND, some concrete, some brick, trace silt, trace f-c gravel (dry)[FILL]						0	
			1					0	
								0	
			2					0	
								0	
			3					0.2	
		Tannish brown f-c SAND, some silt, trace brick, trace concrete, trace f-c gravel (moist)[FILL]						0.3	
			4					6.7	
		Dark brown f-c SAND, trace concrete, trace silt, trace f-c gravel (moist)[FILL]						7.5	
		Dark brown f-c SAND, trace concrete, trace brick, trace silt, trace f-c gravel (moist)[FILL]	5	2	Macrocore	35		24.2	Odors 5- to 10-feet bgs. Product on groundwater from 7.5- to 10-feet bgs 008/LSB-28 collected from 6- to 8-feet bgs at 1555. VOCs from 4.5- to 5-feet bgs. 009/Product-1 fingerprint analysis collected from 6- to 8-feet bgs at 1555.
								6.8	
			6					50.5	
								49.9	
			7					50	
		∇ Dark brown f-c SAND, some silt, trace concrete, trace brick, trace f-c gravel (wet)[FILL]						4	
			8					7	
								5	
			9					3	
								1	
		Dark brown f-c SAND, some silt, trace concrete, trace brick, trace f-c gravel (wet)[FILL]	10	3	Macrocore	12		7	Slight odors 10- to 12-feet bgs
								7.5	
			11					7	
								4	
			12						Bottom of boring at 5/30/2019 4:07 PM
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			17						
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Log of Boring **LSB-29/LSV-2** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 14.23-ft NAVD88	
Drilling Company Aquifer Drilling & Testing		Date Started 5/30/19	Date Finished 6/4/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3 / Undisturbed --- / Core ---	
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ▽ 5 / Completion ▼ --- / 24 HR. ▼ ---	
Casing Hammer --- Weight (lbs) --- Drop (in) ---		Drilling Foreman RJ Singh	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer	
Sampler Hammer --- Weight (lbs) --- Drop (in) ---			

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.)
■		Asphalt	0					0	Started Drilling at 5/31/2019 9:05 AM
▨		Brown f-c SAND, trace brick, trace concrete, trace silt, trace f-c gravel [FILL]						0	
		Brownish white to orangish brown f-c SAND, some silt, trace wood, trace slag, trace concrete, trace brick (moist)[FILL]	1					0	
								0	
			2					0	
				1	Macrocore	41		0	
			3					0	LSV-2 offset to 3-feet bgs. 012/LSB-29 collected from 3- to 5-feet bgs at 0930. VOCs from 3- to 3.5-feet bgs
								0	
			4					0	
								0	
		▽ Tannish brown f-m SAND, trace concrete, trace silt, trace coarse sand, trace f-c gravel (wet)[FILL]	5					0	
								0	
			6					0	
		Gray f-m SAND, some coarse sand, trace concrete, trace silt, trace f-c gravel (wet)[FILL]						0	
			7					0	
				2	Macrocore	35		0	
			8					0	
								0	
			9					0	
								0	
		Gray f-m SAND, some coarse sand, trace concrete, trace wood, trace silt, trace f-c gravel (wet)[FILL]	10					0	
								0	
			11	3	Macrocore	20		0	
								0	
			12						Bottom of boring at 5/31/2019 9:35 AM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-30** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.61-ft NAVD88	
Drilling Company Aquifer Drilling & Testing		Date Started 5/31/19	Date Finished 6/4/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3	Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.): First ∇ 8	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer ---, Weight (lbs) ---	Drop (in) ---	Drilling Foreman RJ Singh	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer	
Sampler Hammer ---, Weight (lbs) ---	Drop (in) ---		

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.)
■		Asphalt Brown f-c SAND, some brick, trace concrete, trace silt, trace f-c gravel (dry)[FILL]	0	1	Macrocore	37		0	Started Drilling at 5/31/2019 10:35 AM
▨								0	
▨			1					0	
▨								0	
▨			2					0	
▨								0	
▨			3					0	
▨								0	
▨		Orangish brown f-c SAND, trace concrete, trace brick, trace f-c gravel (moist)[FILL]	4					0	
▨								0	
▨		Brown f-c SAND, trace concrete, trace brick, trace silt, trace f-c gravel (moist)[FILL]	5	2	Macrocore	37		0	
▨								0	
▨			6					0	013/LSB-30 collected from 6 to 8-feet at 1100. VOCs collected from 7- to 7.5-feet
▨								0	
▨			7					0	
▨								0	
▨		∇ Brown f-m SAND, some coarse sand, trace concrete, trace silt, trace coarse gravel (wet)[FILL]	8					0	
▨								0	
▨			9					0	
▨								0	
▨		Brown f-m SAND, some coarse sand, trace concrete, trace brick, trace silt, trace coarse gravel (wet)[FILL]	10	3	Macrocore	22		0	
▨								0	
▨			11					0	
▨								0	
			12						Bottom of boring at 6/4/2019 10:41 AM
			13						
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			17						
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Log of Boring **LSB-31** Sheet 1 of 1

Project: 280 West 155th Street		Project No.: 100765102	
Location: New York, New York		Elevation and Datum: Approx. 16.43-ft NAVD88	
Drilling Company: Aquifer Drilling & Testing		Date Started: 5/31/19	Date Finished: 6/4/19
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 12 ft	Rock Depth: ---
Size and Type of Bit: 2in Stainless Steel Direct Push		Number of Samples: Disturbed 3; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 9; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: --- Weight (lbs): ---	Drop (in): ---	Drilling Foreman: RJ Singh	
Sampler: 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer: Allyson Kritzer	
Sampler Hammer: --- Weight (lbs): ---	Drop (in): ---		

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.)
		Asphalt	0	1	Macrocore	30		0	Started Drilling at 5/31/2019 12:06 PM
		Brown f-c SAND, some brick, trace concrete, trace silt, trace f-c gravel (dry)[FILL]						0	
			1					0	
								0	
			2					0	
		White to gray f-c SAND, some silt, trace slag, trace glass, trace concrete, trace f-c gravel (moist)[FILL]						0	
			3					0	
								0	
			4					0	
		Tannish brown f-m SAND, trace coarse sand, trace coarse gravel (moist)[FILL]						0	
		Tannish brown f-m SAND, trace coarse sand, trace coarse gravel (moist)[FILL]	5	2	Macrocore	15		0	
								0	
			6					0	
								0	
		Orangish brown f-c SAND, trace wood, trace concrete, trace slag, trace silt, trace f-c gravel (moist)[FILL]	7					0	014/LSB-31 from 7 to 9 at 1230. VOCs from 8 to 8.5
								0	
			8					0	
								0	
		▽ Orangish brown f-c SAND, trace wood, trace concrete, trace slag, trace silt, trace f-c gravel (wet)[FILL]	9					0	
								0	
		No Recovery	10	3	Macrocore	0		0	
								0	
			11					0	
								0	
			12						Bottom of boring at 6/4/2019 10:40 AM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LSB-32** Sheet 1 of 1

Project 280 West 155th Street			Project No. 100765102		
Location New York, New York			Elevation and Datum Approx. 14.5-ft NAVD88		
Drilling Company Aquifer Drilling & Testing			Date Started 5/31/19	Date Finished 5/31/19	
Drilling Equipment Geoprobe 7822 DT			Completion Depth 12 ft	Rock Depth ---	
Size and Type of Bit 2in Stainless Steel Direct Push			Number of Samples	Disturbed 3	Undisturbed --- / Core ---
Casing Diameter (in) ---		Casing Depth (ft) ---	Water Level (ft.)	First ∇ 10	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) ---	Drop (in) ---	Drilling Foreman RJ Singh		
Sampler 1.75 in x 5 ft Acetate Lined Macrocore			Field Engineer Allyson Kritzer		
Sampler Hammer ---	Weight (lbs) ---	Drop (in) ---			

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.)
■		Asphalt	0	1	MACROCORE	36		0.0	Started Drilling at 5/31/2019 1:30 PM
▨		Brown f-c SAND some brick, concrete, trace silt, f-c gravel, wood, styrofoam (dry) [FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
▒		Concrete						0.0	
▨		Brown f-m SAND some c sand, trace silt, asphalt, concrete (moist) [FILL]	4					0.0	Refusal at 4-feet bgs x 6.
								0.0	
		Brown f-m SAND some c sand, trace silt, asphalt, concrete (moist) [FILL]	5	2	MACROCORE	20		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	
								0.0	
			8					0.0	
		Brown f-m SAND some c sand, trace silt, asphalt, concrete (moist) [FILL]						0.0	
		Brown f SAND (moist) [FILL]	9					0.0	
								0.0	
		∇ Black to brown f-c SAND trace silt, concrete, f-c gravel, brick, concrete (wet) [FILL]	10	3	MACROCORE	10		0.2	Slight odors, product, sheen from 10 to 12-feet bgs
								0.7	
			11					0.9	015/LSB-32 from 10- to 12-feet bgs at 1410. VOCs from 11- to 11.5-feet bgs
								0.3	
			12						Bottom of boring at 5/31/2019 1:50 PM
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			14						
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			20						

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LANGAN Log of Boring **LSB-33** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102		
Location New York, New York		Elevation and Datum Approx. 12.78-ft NAVD88		
Drilling Company Aquifer Drilling & Testing		Date Started 5/31/19	Date Finished 5/31/19	
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---	
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3	Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 7	Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer --- / Weight (lbs) --- / Drop (in) ---		Drilling Foreman RJ Singh		
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer		
Sampler Hammer --- / Weight (lbs) --- / Drop (in) ---				

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.)
■		Asphalt	0	1	MACROCORE	41		0.0	Started Drilling at 5/31/2019 3:45 PM
▨		Brown f-m SAND, some coarse sand, some concrete, trace f-c gravel, trace brick, trace wood (dry) [FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
		Orangish brown f-c SAND trace silt, trace concrete, trace asphalt, trace f-c gravel (moist) [FILL]	4					0.0	
								0.0	
		White to gray f-c SAND, some silt, trace concrete, trace brick, trace f-c gravel (moist) [FILL]	5	2	MACROCORE	15		0.0	016/LSB-33 from 5 to 7-feet bgs at 1605. VOCs from 6.5- to 7-feet bgs
								0.0	
			6					0.0	
								0.0	
		Brown f SAND, trace m-c sand (wet) [FILL]	▽ 7					0.0	
								0.0	
			8					0.0	
								0.0	
			9					0.0	
		Gray f-m SAND, trace coarse sand, trace brick, trace f gravel (wet) [FILL]						0.0	
		Gray f-m SAND, trace coarse sand, trace brick, trace f gravel (wet) [FILL]	10	3	MACROCORE	16		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 5/31/2019 4:05 PM
			13						
			14						
			15						
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Log of Boring **LSB-34** Sheet 1 of 1

Project 280 West 155th Street		Project No. 100765102	
Location New York, New York		Elevation and Datum Approx. 15.82-ft NAVD88	
Drilling Company Aquifer Drilling & Testing		Date Started 5/31/19	Date Finished 5/31/19
Drilling Equipment Geoprobe 7822 DT		Completion Depth 12 ft	Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push		Number of Samples	Disturbed 3 / Undisturbed --- / Core ---
Casing Diameter (in) ---	Casing Depth (ft) ---	Water Level (ft.)	First ▽ 8.3 / Completion ▼ --- / 24 HR. ▼ ---
Casing Hammer ---	Weight (lbs) --- / Drop (in) ---	Drilling Foreman RJ Singh	
Sampler 1.75 in x 5 ft Acetate Lined Macrocore		Field Engineer Allyson Kritzer	
Sampler Hammer ---	Weight (lbs) --- / Drop (in) ---		

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.)
■		Asphalt	0	1	MACROCORE	40		0.0	Started Drilling at 5/31/2019 4:15 PM
▨		Brown f-c SAND some brick, trace wood, trace silt, trace concrete, trace f-c gravel (dry) [FILL]						0.0	
			1					0.0	
								0.0	
			2					0.0	
		White to gray f-c SAND trace silt, trace concrete, trace asphalt, trace slag, trace f-c gravel (dry) [FILL]						0.0	
		Orangish brown f-c SAND trace silt, trace concrete, trace asphalt, trace slag, trace f-c gravel (moist) [FILL]	3					0.0	
								0.0	
			4					0.0	
								0.0	
		Orangish brown f SAND trace m-c sand, trace silt (moist) [FILL]	5	2	MACROCORE	20		0.0	
								0.0	
			6					0.0	017/LSB-34 from 6- to 8-feet bgs at 1630. VOCs from 7- to 7.5-feet bgs
								0.0	
		Gray to brown f-c SAND trace silt, trace concrete, trace porcelain, trace brick (moist) [FILL]	7					0.0	
								0.0	
			▽ 8					0.0	
		Gray to brown f-c SAND trace silt, trace concrete, trace porcelain, trace brick (wet) [FILL]						0.0	
			9					0.0	
								0.0	
		Gray to white f-c SAND trace wood, trace fine gravel, trace silt (wet) [FILL]	10	3	MACROCORE	8		0.0	
								0.0	
			11					0.0	
								0.0	
			12						Bottom of boring at 5/31/2019 4:30 PM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

Log of Boring **LSB-35** Sheet 1 of 1

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation and Datum Approx. 15.18-ft NAVD88
Drilling Company Aquifer Drilling & Testing	Date Started 5/31/19 · Date Finished 5/31/19
Drilling Equipment Geoprobe 7822 DT	Completion Depth 12 ft · Rock Depth ---
Size and Type of Bit 2in Stainless Steel Direct Push	Number of Samples: Disturbed 3 · Undisturbed --- · Core ---
Casing Diameter (in) --- · Casing Depth (ft) ---	Water Level (ft.): First ▽ 7.5 · Completion ▼ --- · 24 HR. ▼ ---
Casing Hammer --- · Weight (lbs) --- · Drop (in) ---	Drilling Foreman RJ Singh
Sampler 1.75 in x 5 ft Acetate Lined Macrocore	Field Engineer Allyson Kritzer
Sampler Hammer --- · Weight (lbs) --- · Drop (in) ---	

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.)
		Asphalt	0	1	MACROCORE	40		0.0	Started Drilling at 5/31/2019 4:40 PM
		Brown f-c SAND, some brick, trace silt, trace f-c gravel, trace concrete, trace asphalt (dry) [FILL]	0.5					0.0	
			1					0.0	
			1.5					0.0	
			2					0.0	
			2.5					0.0	
			3					0.0	
			3.5					0.0	
		Brown f SAND, trace m-c sand (moist) [FILL]	4					0.0	
			4.5					0.0	
		Gray to brown f-c SAND, trace silt, trace asphalt, trace concrete, trace f-c gravel (moist) [FILL]	5	2	MACROCORE	30		0.0	
			5.5					0.0	018/LSB-35 from 5.5- to 7.5-feet bgs at 1655. VOCs from 5.5- to 6-feet bgs
			6					0.0	
			6.5					0.0	
			7					0.0	
		▽ Gray to brown f-m SAND, some c sand, trace f-c gravel, trace silt, trace concrete (wet) [FILL]	7.5					0.0	
			8					0.0	
			8.5					0.0	
			9					0.0	
			9.5					0.0	
		No Recovery	10	3	MACROCORE	0		0.0	
			10.5					0.0	
			11					0.0	
			11.5					0.0	
			12						Bottom of boring at 5/31/2019 5:00 PM
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-1

Project	280 West 155th Street	Project No.	100765102
Location	New York, New York	Elevation And Datum	14.24 ft NAVD88
Drilling Agency	Aquifer Drilling & Testing	Date Started: 5/30/2019	Date Finished: 5/30/2019
Drilling Equipment	Geoprobe 7822 DT	Driller	RJ Singh
Size And Type of Bit	2-inch	Inspector	Allyson Kritzer

Method of Installation

Soil boring drilled to 15' bgs with a 2" stainless steel macrocore. Bottom of drilled soil boring backfilled with non-impacted drill cuttings to 12' bgs. 10-feet of Schedule-40, 0.020-inch slotted 1-inch diameter PVC screen was installed from 2-12' bgs. No filter was installed due to cave in. A 0.5-foot bentonite seal was installed from 0.5-1' bgs. Manhole installed and secured with concrete.

Method of Well Development

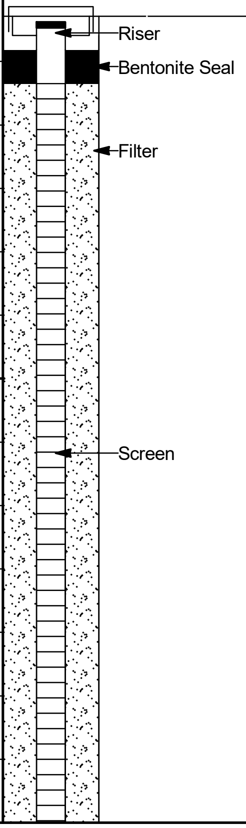
LMW-1 was not developed during the 2019 Phase II EI. LMW-1 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments during the 2020 RI. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing: --	Diameter: --	Type of Backfill Material	Non-Impacted Drill Cuttings
Type of Screen: Schedule-40 PVC	Diameter: 1-inch	Type of Seal Material	Bentonite
Borehole Diameter	2-inch	Type of Filter Material	None

	Elevation	Depth
Top of Casing	14.24'	0' bgs
Top of Seal	13.74'	0.5' bgs
Top of Filter		
Top of Screen	13.24'	1' bgs
Bottom of Filter	2.24'	12' bgs
Bottom of Well	2.24'	12' bgs
Screen Length	11.0'	Slot Size: 0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
7.04'	7.20'	6/3/2019
6.20'	8.04'	9/2/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.5 1 12

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-2

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 15.15 ft NAVD88
Drilling Agency Aquifer Drilling & Testing	Date Started 5/30/2019
	Date Finished 5/30/2019
Drilling Equipment Geoprobe 7822 DT	Driller RJ Singh
Size And Type of Bit 2-inch	Inspector Allyson Kritzer

Method of Installation

Soil boring drilled to 15' bgs with a 2" stainless steel macrocore. Bottom of drilled soil boring backfilled with non-impacted drill cuttings to 13' bgs. 10-feet of Schedule-40, 0.020-inch slotted 1-inch diameter PVC screen was installed from 3-13' bgs. No filter was installed due to cave in. A 0.5-foot bentonite seal was installed from 0.5-1' bgs. Manhole installed and secured with concrete.

Method of Well Development

LMW-2 was not developed during the 2019 Phase II EI. LMW-2 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments during the 2020 RI. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

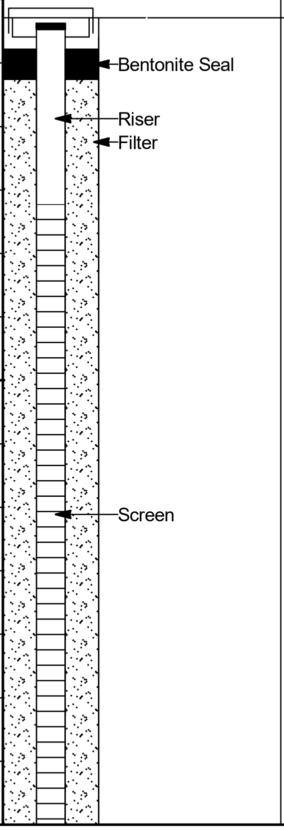
Type of Casing --	Diameter --	Type of Backfill Material Non-Impacted Drill Cuttings
Type of Screen Schedule-40 PVC	Diameter 1-inch	Type of Seal Material Bentonite
Borehole Diameter 2-inch		Type of Filter Material None

	Elevation	Depth
Top of Casing	14.90'	0.25' bgs
Top of Seal	14.65'	0.5' bgs
Top of Filter	14.15'	1' bgs
Top of Screen	12.15'	3' bgs
Bottom of Filter	2.15'	13' bgs
Bottom of Well	2.15'	13' bgs

Screen Length	Slot Size
10.0'	0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
7.35'	7.55'	6/3/2019
6.88'	8.02'	9/2/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25 1 3 13

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-3

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 15.91 ft NAVD88
Drilling Agency Aquifer Drilling & Testing	Date Started 5/30/2019 Date Finished 5/30/2019
Drilling Equipment Geoprobe 7822 DT	Driller RJ Singh
Size And Type of Bit 2-inch	Inspector Allyson Kritzer

Method of Installation

Soil boring drilled to 15' bgs with a 2" stainless steel macrocore. 10-feet of Schedule-40, 0.020-inch slotted 1-inch diameter PVC screen was installed from 5-15' bgs. No filter was installed due to cave in. A 0.5-foot bentonite seal was installed from 0.5-1' bgs. Manhole installed and secured with concrete.

Method of Well Development

LMW-3 was not developed during the 2019 Phase II EI. LMW-3 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments during the 2020 RI. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing --	Diameter --	Type of Backfill Material None
Type of Screen Schedule-40 PVC	Diameter 1-inch	Type of Seal Material Bentonite
Borehole Diameter 2-inch		Type of Filter Material None

	Elevation	Depth
Top of Casing	15.66'	0.25' bgs
Top of Seal	15.41'	0.5' bgs
Top of Filter	14.91'	1' bgs
Top of Screen	10.91'	5' bgs
Bottom of Filter	0.91'	15' bgs
Bottom of Well	0.91'	15' bgs

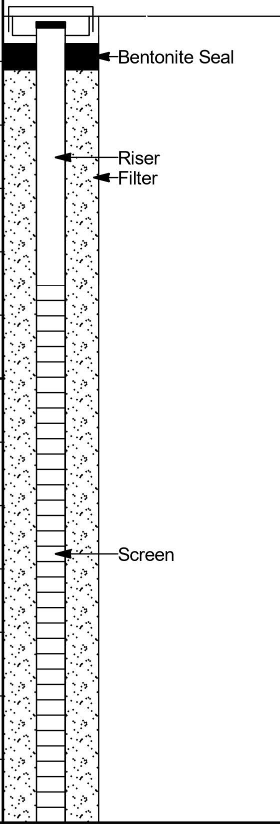
Screen Length	Slot Size
10.0'	0.020

GROUNDWATER ELEVATIONS (ft)

(Measured from the Top of Casing)

Elevation	DTW	Date
7.71'	7.95'	6/3/2019
6.35'	9.31'	9/2/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25
		1
		5
		15



LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-4

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 15.92 ft NAVD88
Drilling Agency Aquifer Drilling & Testing	Date Started 5/30/2019 — Date Finished 5/30/2019
Drilling Equipment Geoprobe 7822 DT	Driller RJ Singh
Size And Type of Bit 2-inch	Inspector Allyson Kritzer

Method of Installation

Soil boring drilled to 15' bgs with a 2" stainless steel macrocore. 10-feet of Schedule-40, 0.020-inch slotted 1-inch diameter PVC screen was installed from 5-15' bgs. No filter was installed due to cave in. A 0.5-foot bentonite seal was installed from 0.5-1' bgs. Manhole installed and secured with concrete.

Method of Well Development

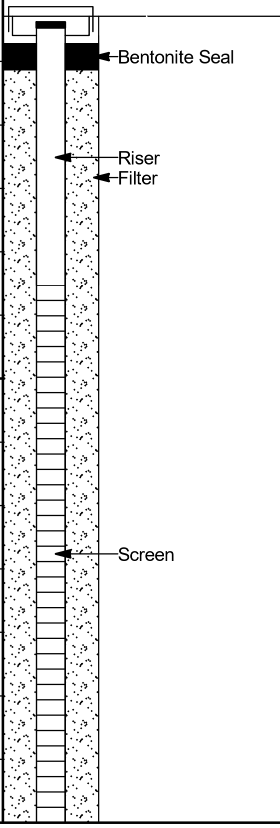
LMW-4 was not developed during the 2019 Phase II EI. LMW-4 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments during the 2020 RI. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing	Diameter	Type of Backfill Material
--	--	None
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule-40 PVC	1-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
	2-inch	None

	Elevation	Depth
Top of Casing	15.67'	0.25' bgs
Top of Seal	15.42'	0.5' bgs
Top of Filter	14.92'	1' bgs
Top of Screen	10.92'	5' bgs
Bottom of Filter	0.92'	15' bgs
Bottom of Well	0.92'	15' bgs
Screen Length	10.0'	Slot Size 0.020

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
6.47'	9.2'	6/3/2019
5.59'	10.08'	9/2/2020

Well Details	Soil / Rock Classification	Depth (ft)
	Fill	0.25 1 5 15

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-5

Project 280 West 155th Street	Project No. 100765102
Location New York, New York	Elevation And Datum 14.05 ft NAVD88
Drilling Agency Aquifer Drilling & Testing	Date Started 5/30/2019
	Date Finished 5/30/2019
Drilling Equipment Geoprobe 7822 DT	Driller RJ Singh
Size And Type of Bit 2-inch	Inspector Allyson Kritzer

Method of Installation

Soil boring drilled to 13' bgs with a 2" stainless steel macrocore. 10-feet of Schedule-40, 0.020-inch slotted 1-inch diameter PVC screen was installed from 3-13' bgs. No filter was installed due to cave in. A 0.5-foot bentonite seal was installed from 0.5-1' bgs. Manhole installed and secured with concrete.

Method of Well Development

LMW-5 was not developed during the 2019 Phase II EI. LMW-5 was developed using surge pumping techniques across the well screen in 2- to 3-foot increments during the 2020 RI. After surging, the well was purged via pumping until the water became clear. Purge water was collected in 55-gallon drums for future offsite disposal.

Type of Casing --	Diameter --	Type of Backfill Material None
Type of Screen Schedule-40 PVC	Diameter 1-inch	Type of Seal Material Bentonite
Borehole Diameter 2-inch		Type of Filter Material None

	Elevation	Depth
Top of Casing	13.80'	0.25' bgs
Top of Seal	13.55'	0.5' bgs
Top of Filter	13.05'	1' bgs
Top of Screen	11.05'	3' bgs
Bottom of Filter	1.05'	13' bgs
Bottom of Well	1.05'	13' bgs

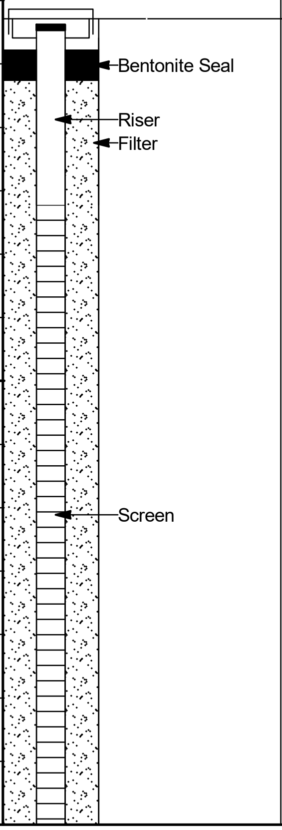
Screen Length	Slot Size
10.0'	0.020

GROUNDWATER ELEVATIONS (ft)

(Measured from the Top of Casing)

Elevation	DTW	Date
6.25'	7.55'	9/2/2020

Well Details



Soil / Rock Classification	Depth (ft)
Fill	0.25
	1
	3
	13