FINAL INTERIM REMEDIAL MEASURE WORK PLAN

PAERDEGAT BASIN GAS CONDENSATE RELEASE
SEAVIEW AVE AND PAERDEGAT AVE N
BROOKLYN, NEW YORK 11236

NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

MAY 25, 2021

Prepared for:

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H2M Project No.: NGRD1221

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CERTIFICATION

I, Paul R. Lageraaen, P.E., P.G., certify that I am currently a New York State registered professional engineer and Qualified Environmental Professional, as defined in 6 NYCRR Part 375, and that this Interim Remedial Measure (IRM) Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

(Seal)

PAUL R. LAGERAAEN, P.E., P.G.
Printed Name of Registered Professional Engineer

Signature of Registered Professional Engineer

Date 6/29/2021 Registration No. 079960 State NY

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1.0 INTRODUCTION

1.1 Project Overview

On behalf of National Grid, H2M architects + engineers (H2M) prepared this Interim Remedial Measure Work Plan (IRM WP) to define the scope of work for remediation activities for Operable Unit 2 (OU-2) associated with the Paerdegat Basin Gas Condensate Release (Spill No. 1206391) located on Seaview Avenue in the Canarsie area of Brooklyn, New York (NYSDEC Site No. 224167).

National Grid has entered into an Administrative Order on Consent (Index No. R2-0811-13-08) to investigate and remediate impacts from a September 27, 2012 gas condensate release. To facilitate investigation and remediation, the gas condensate release was segregated into Operable Units 1 and 2 (OU-1 and OU-2). OU-1 focuses on sediment impacts within Paerdegat Basin. OU-2 addresses subsurface soil impacts in the vicinity of the release location.

OU-2 was investigated and a final Site Characterization Report (SCR) was issued on June 26, 2020. On September 30, 2020, the NYSDEC completed its review of the SCR and found it to be in compliance with the Site Characterization Work Plan, DER-10 and other related guidance, and the report was approved. A copy of the NYSDEC approval letter and SCR (text, figures and tables only) are provided as **Appendix A**. The SCR defined the extent of subsurface contamination associated with OU-2. The NYSDEC SCR approval also required the development of a work plan to address the residual contamination.

In a discussion with the NYSDEC on October 16, 2020, National Grid was directed to address remediation of this final operable unit as an IRM in general conformance with DER-10. National Grid herein presents this IRM Work Plan to address this final remedial step.

1.2 Site Location and Description

The OU-2 component of the Paerdegat Basin Gas Condensate Release is located in the County of Kings, Brooklyn, New York. The OU-2 portion of the release is situated on the southeastern side of Seaview

Avenue, between Paerdegat Avenue North and East 80th Street in the Canarsie section of Brooklyn. A site location map is provided as **Figure 1**. The delineated boundary and focus of the IRM on Seaview Avenue is a roughly rectangular area approximately 10-13 feet wide by 115 feet long. The boundaries of this area are further described in Sections 2.4 and 3.4. The work area approximate latitude is 40°37'35.5" N and the longitude is 73°54'01.6" W.

Underground utility equipment situated within the impacted area include a natural gas standpipe, a retired 30-inch natural gas main, an active 30-inch natural gas main and some empty concrete electrical conduits owned by Con Edison. A Con Edison-owned electric vault and other electrical conduits within the impacted area were removed by Con Edison in mid- to late-2020. The standpipe was attached to the retired 30-inch natural gas transmission main located within a formerly excavated pit and was installed as part of the natural gas main abandonment project that preceded the natural gas condensate release. The retired gas main runs beneath Paerdegat Basin towards the northeast along the southeast side of Seaview Avenue and terminates at the former standpipe pit. A new active gas main runs parallel on the northwest side of the retired gas main. At the termination point of the retired gas main (i.e., former standpipe pit location), the active gas main transitions closer to the southeast side of Seaview Avenue in the route of the retired gas main. The former Con Edison underground electric vault and conduits ran parallel to the southeast of both the active and retired gas mains and northwest of the concrete curb line.

The general vicinity of OU-2 is primarily comprised of residential, commercial and recreational properties. Seaview Avenue runs in a general northeast-southwest direction. Residential properties are located across Seaview Avenue to the northwest of the release site. To the southwest are Paerdegat Athletic Club and Midget Squadron Yacht Club. Canarsie Park is located to the east and southeast and is comprised of open recreational areas, multiple athletic fields, playgrounds and a skate park. The area is generally flat with little to no relief and is only several feet above mean sea level (msl). Depth to groundwater at the site ranges from approximately 3.5 feet to 6 feet below grade surface (bgs). A site plan is provided as **Figure 2**.

1.3 Site Background

There is a former standpipe pit associated with the retired 30-inch gas main that is located along the southeast side of Seaview Avenue near the intersection with Paerdegat Avenue North. This location is the point of origin of the gas condensate release. The former standpipe pit was installed as part of a National Grid natural gas transmission main retirement project. During gas line abandonment services in late September 2012, cement grout was pumped into the retired gas main from the opposite (south) side of Paerdegat Basin near the Hudson River Yacht Club. The retired natural gas main runs beneath Paerdegat Basin towards the northeast, along the east side of Seaview Avenue, and terminates at the

former standpipe pit. As a result of the cement grout filling operation, residual gas condensate within the retired gas line was inadvertently forced through a vent at the former standpipe pit location. Natural gas condensate, that was contaminated primarily with polychlorinated biphenyls (PCBs), select volatile organic compounds (VOCs) and select semi-volatile organic compounds (SVOCs), impacted soils within the former standpipe pit and the surrounding area.

Gas condensate was released onto the roadway (i.e., Seaview Avenue) and was subsequently flushed into a nearby stormwater catch basin by the New York City Fire Department (FDNY). The catch basin ultimately directed the gas condensate to a stormwater outfall that discharges into the adjacent surface water body, Paerdegat Basin. Upon identification of the release, National Grid notified the National Response Center (NRC) and the New York State Department of Environmental Conservation (NYSDEC) among other regulatory agencies. Emergency response activities were conducted under the direct supervision of the United States Coast Guard (USCG), NYSDEC and New York City Department of Environmental Protection (NYCDEP) and others.

1.4 Regional and Site Geology

1.4.1 Regional Geology

Long Island, including Brooklyn (Kings County) and Queens, is within the Atlantic Coastal Plain geomorphic province. It sits atop the coastal plain ridge formation that is covered with glacial drift, primarily moraine deposits from several glacial episodes. As the glaciers carved and eroded the landscape, at the margins of the ice sheets massive accumulations of glacial debris were deposited as terminal moraines. The terminal moraines on Long Island are the result of the advance and subsequent retreat of the Wisconsin Ice Sheet, a massive continental glacier present during the last Ice Age during the Pleistocene epoch. With respect to the Jamaica Bay watershed, it is the Harbor Hill moraine and the outwash plain that has had the most influence in shaping the surface of the watershed area. The Harbor Hill moraine is a continuous ridge extending from Brooklyn on the west to Port Jefferson on the east. Before the anthropogenic extensive alteration of the landscape during the 19th and 20th centuries, a gently sloping plain extended south of the moraine to a series of tidal marshes draining into Jamaica Bay by a series of small creeks.

The metamorphic bedrock formations that underlie Long Island are more than 400 million years old, with overlying sands, clays and gravels deposited during the late Cretaceous geologic period about 70 million years ago. The gneissic granitic bedrock, or basement formation, underlying Long Island is present near the surface in northwestern portion of Queens, subsequently sloping south and east to greater than 2,000 feet below the surface along the southern edge of Long Island.

From oldest to youngest, Long Island's Cretaceous unconsolidated deposits include the Raritan formation and the overlying Matawan Group-Magothy formation. During the Cretaceous period, sediments derived from the eroding Appalachian Highlands were transported by streams to low-lying coastal areas. There they formed shallow marine, deltaic, estuarine, lacustrine, and fluvial deposits. The Lloyd Sand member of the Raritan formation and the Matawan Group-Magothy formation incorporate significant sequences of sand and gravel, often interbedded with silty and/or clayey layers and lenses, with lignite and pyrite common in the Magothy deposits. Near the southern Brooklyn area, the Lloyd Sand and the Magothy deposits are each approximately 250 feet thick. The upper clay member of the Raritan formation which separates the two units is approximately 200 feet thick. Near the Paerdegat Site the stratigraphy consists of the Upper Glacial Deposits overlying a thin Gardiner aquifer, confined by the Jameco clay, followed by the Magothy Aquifer, Raritan formations and finally the Lloyd aquifer.

1.4.2 Site Geology

Near the Paerdegat Basin site, Holocene or recent deposits overlie the Upper Glacial materials and reach thicknesses of up to 40 feet. These include artificial fill, organic, shell-bearing mud, silt, clay, peat, and wind and wave-deposited sands, gravels and shell fragments. Most of the immediate area consists of fill material ranging in thickness from zero to several feet. It consists of granular soils with varying amounts of miscellaneous debris. The fill material is underlain by a relatively narrow sequence of unconsolidated sediments of Quaternary age moraine and glacial outwash sediments. Typical soil strata as depth increases will consist of several feet of surficial fill materials, organic silt/peat, glacial outwash or lacustrine deposits and glacial moraine/drift deposits.

Paerdegat Basin came to its present form in the late 1920s. Before then, it was a freshwater-fed tidal creek known at various times as Bestevaar Kill, Bedford Creek, and Paerdegat Creek. It was much longer than the present-day basin and had several branches. The basin adjoined Brooklyn's last patch of natural forest, which was demolished in 1940. One of the small creeks that drained into Jamaica Bay was Paerdegat or Bedford's Creek, which meandered through the project site area from the northwest. The marsh around the Paerdegat creeks and branches were regularly inundated by high tides, rendering the area impassable. During the 19th and 20th centuries, sections of the marsh were filled in, in preparation for the development of Jamaica Bay as a major port, which never occurred. The lower reaches of the creek were widened, regularized and dredged during the early 20th century, to form the present Paerdegat Basin, a polygonal slip for mooring small boats and barges. All of the Site area has been greatly affected by man-made activities being greatly influenced by residential, commercial and industrial development, including landfilling with waste materials and dredging fill material as the shoreline was modified for use and stability.

2.0 SCOPE OF WORK

2.1 Objective and Overview

This site remediation project is being conducted on behalf of National Grid and is designed to address the remaining impacts associated with OU-2. The focus of this site remediation is to remove impacted soils within the limits of a remedial excavation determined from previous investigations conducted at the site (see approved Site Characterization Report dated June 26, 2020). All Areas of Concern (AOCs) are beneath the paved street, and no significant threat to human health and the environment exists since there is no complete contaminant exposure pathway. It is anticipated that all contaminated soils will be excavated to the extent practical and the retired gas main will be fully abandoned. A section of the abandoned Con Edison electrical conduits that currently remains within the excavation area will also be removed in consultation with Con Edison as part of the remediation activities (see Section 3.7 for additional details). This IRM Work Plan is designed as a guide for the soil remediation and pipe abandonment activities which will be bid out to qualified contractors for a performance-based scope of work.

This IRM scope of work for site remediation includes addressing several AOCs:

- Removal of contaminated soils within the defined extent of excavation;
- Cleaning and grouting of the retired natural gas main;
- Closure of all site monitoring wells in and around the work zone; and
- Restoration of roadway.

The selected Contractor will conduct all work under a site-specific Health and Safety Plan. The Contractor will also work in accordance with the site-specific Community Air Monitoring Plan (CAMP) executed by the National Grid Environmental Consultant (see Section 3.2 and **Appendix C**). Additionally, National Grid will require the Contractor to develop and follow a Maintenance and Protection of Traffic (MPT) Plan, an Excavation Plan, a Retired Gas Pipe Abandonment Plan, a Waste Management Plan, and a Contingency Plan. All Plans will be provided to National Grid as deliverables for review and acceptance prior to implementation.

2.2 Contaminants of Concern (COCs)

Based upon analytical results of the gas condensate liquid collected by H2M from the standpipe on October 1, 2012, the gas condensate included elevated concentrations of PCBs, select VOCs and select SVOCs. The contaminant detected at the highest concentration at that time was the PCB Aroclor 1242 at 10,000 mg/kg. The condensate analytical results also indicated that benzene, toluene, ethylbenzene,

xylene (BTEX), naphthalene and 2-methylnaphthalene were also detected at elevated concentrations. A summary of the initial standpipe gas condensate sampling results from 2012 is provided in **Table 1.**

In February of 2019, the retired gas main was uncovered and tapped to enable sampling of the residual pipe liquids. These data are presented in **Table 2**. Subsequently, in November 2019, the residual pipe liquids were pumped out of the retired main and sent for off-site disposal at an approved TSCA licensed facility.

2.3 Standards, Criteria and Guidance (SCGs)

Standards, Criteria and Guidance applicable to this remediation include the following:

- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation
- NYSDEC CP-51: Soil Cleanup Guidance Policy
- NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
- 6 NYCRR Part 375 Environmental Remediation Programs
- National Contingency Plan
- 40 CFR 761.120-135 - PCB Spill Cleanup Policy
- 40 CFR 761.79(h) - Decontamination Standards and Procedures
- NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy.

For the purposes of this IRM WP, PCBs in soil are considered the primary contaminant of concern. However, the proposed remedial strategy to address PCBs in soil will also address all identified VOC and SVOC impacts to soil as well as remove any source areas contributing to groundwater contamination.

The NYSDEC 6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives (SCOs) were selected as the remedial cleanup objectives for this IRM WP, which for PCBs in soil is **1 ppm**, regardless of depth. A table listing the Part 375 Restricted-Residential Use Soil Cleanup Objectives is provided as **Table 7**.

Any environmental samples to be collected as part of this IRM WP will be submitted to an accredited laboratory approved by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

2.4 Summary of Site Investigation Findings

The extent of the original gas condensate contamination spill was delineated during multiple site investigation efforts conducted in May 2014, November-December 2014 and June-July 2015. The site investigations were performed in conformance with a NYSDEC-approved Site Investigation and Pipe Abandonment Work Plan, dated June 28, 2013 and subsequent addendums. A total of sixteen (16) soil borings were advanced in the vicinity of the spill release area. In addition, fifteen (15) groundwater monitoring wells were installed within the locations of the soil borings.

Soil boring investigative sampling was conducted during the May 2014 to June 2015 investigations to delineate the extent of contamination. **Tables 3a through 3c, 4a through 4c and 5a through 5c** present the analytical data for all the soil boring samples. Soil sampling results identified PCB and SVOC exceedances above the NYSDEC Part 375 Restricted-Residential Use SCOs. No VOCs were detected in any of the soil samples at concentrations above the Restricted-Residential Use SCOs. SVOCs included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene. Most SVOCs in soils were in shallow soil samples and may be attributable to the asphalt roadway. The PCB concentrations in the soil samples range from non-detect to 140 parts per million (ppm). **Figure 3** shows the total PCB concentrations for soil boring samples with exceedances above the NYSDEC Part 375 Restricted-Residential Use SCO. These soils are all located beneath the asphalt-paved surface of Seaview Avenue.

Groundwater has been monitored over the years since the initial spill utilizing the network of monitoring wells installed under the approved 2013 Work Plan. The most recent groundwater sampling data was collected in June of 2020. The sampling results identified PCB, VOC and SVOC exceedances above the NYSDEC TOGS 1.1.1 Class GA Standards. **Tables 6A through 6C** present the analytical data from the June 2020 groundwater sampling event. The total PCB concentrations in the June 2020 groundwater samples range from non-detect to 176.9 µg/l. **Figure 4** shows the detected concentrations of PCBs in groundwater samples collected in June 2020 that exceed the NYSDEC TOGS 1.1.1 Class GA Standard for PCBs.

As shown in **Figures 3 and 4**, PCB exceedances in soil samples above the Part 375 Restricted-Residential Use SCO, and those in groundwater which exceed the TOGS 1.1.1 Class GA Standard, are limited to the boundaries of National Grid's 30-inch gas main to the northwest, MW-8 to the northeast, the Seaview Avenue curb line to the southeast and MW-11 to the southwest. These boundaries define the remedial excavation area and is shown as a rectangular box on **Figures 2 and 5**. This remedial boundary enclosed a former Con Edison underground electric vault and associated conduits. The electric vault and most of the empty concrete conduits were removed. However, remaining conduits, located to

the southwest of the former vault location and within the IRM remedial boundary, will be removed as part of this IRM. Any remaining abandoned concrete electrical conduits at the boundary of the remedial excavation will be cut and capped.

3.0 IRM PLAN

3.1 Utility Survey, Street Opening Permit, and Utility Clearance Considerations

New York Code Rule 753 requires that a utility clearance be performed at least 48 hours prior to initiation of any subsurface work. The Contractor will contact New York 811 to request a mark-out of all underground utilities in the proposed work area. As determined by the project schedule, refreshing of the mark-outs may also be performed as needed.

In conformance with the New York City Department of Transportation (NYCDOT) Highway Rules (Rules of the City of New York, Title 34, Section 2-11(a)), all needed permits, such as a Street Opening Permit and Construction Activity Permit, will be obtained by National Grid or the remedial contractor prior to performing any road construction activities.

In development of the soil excavation approach, consideration was given to existing site physical constraints and existing subsurface utilities. Existing subsurface utilities within the boundaries of the proposed excavation area include the new active natural gas transmission main and the retired natural gas main. As required by National Grid Gas Operations, a minimum clearance must be maintained from the active natural gas transmission line.

3.2 Community Air Monitoring Plan (CAMP), Odor and Nuisance Control

During all ground intrusive activities, National Grid's Environmental Consultant will be implementing a Community Air Monitoring Plan (CAMP) in conformance with the New York State Department of Health (NYSDOH) Generic CAMP. Details for the implementation of the monitoring program are included in a site-specific CAMP, provided as **Appendix B**. The CAMP will include continuous monitoring for VOCs and particulates. Two (2) monitoring stations will be set up along the perimeter of the work area, with one (1) placed at an upwind location and one (1) at a downwind location. The locations of the monitoring stations will be chosen based on the daily observed wind direction. Both the upwind and downwind stations will include a dust monitor that will continuously measure particulate (PM-10) concentrations and a photoionization detector (PID) that will continuously monitor VOCs. The Response levels and actions for particulate and VOC exceedances will be followed in accordance with the NYSDOH Generic CAMP.

At the request of the NYSDOH, sampling for the potential presence of PCBs in air will also be conducted. Sampling and analytical methodologies were reviewed. An approach was selected and proposed to the NYSDEC and NYSDOH on April 21, 2021, and subsequently approved on April 30, 2021. The monitoring shall include collection of air samples before, during and after excavation to determine the concentrations of PCBs in vapor phase or on particulates, if detectable by the given methodologies. Sampling will be conducted whenever excavation is performed. Details of this sampling plan are included in the site-specific CAMP, provided as **Appendix B**.

In addition to implementing the CAMP, odor screening will be performed utilizing olfactory observations along with a portable PID to identify sources that may impact the local community. Should offensive odors be detected migrating from the work area, then work activities will be stopped and evaluated to determine the source of the odors. Corrective actions will then be taken by the Contractor to abate the emissions. Work activities can continue provided that odors are no longer detected.

Additionally, National Grid's Environmental Consultant will monitor and observe all Contractor work for potential creation of nuisance conditions. Such conditions will encompass excessive noise, vibrations, dust, traffic or pedestrian congestion, or other situations which could adversely impact the local community and residents. National Grid will reach out in advance of the field work to community organizations and leaders to apprise them of the project. National Grid will have available a Community Affairs Liaison for addressing questions or issues expressed by the local community.

3.3 Health & Safety Plans

National Grid places safety as a top priority for all its projects. For the Paerdegat Basin IRM WP, National Grid will require that all Contractor remedial work shall be addressed and conducted under a site-specific Health & Safety Plan developed by the Contractor. The Contractor's Health & Safety Plan is required as a deliverable to National Grid for review before the onset of any field work. All Contractor employees and subcontractors will be subject to the safety requirements of the Contractor's Plan. The Contractor's Plan shall be signed off by all Contractor and subcontractor employees and shall be kept available on-site at all times while work is being conducted. All employees who will be in contact with any contaminated materials will be required to have current and valid 40-hour HAZWOPER training.

The National Grid Environmental Consultant will also have their own site-specific Health & Safety Plan that will govern all the Consultant's on-site work. The Environmental Consultant's Plan is provided as **Appendix C.**

3.4 Work Area Security

The work area is located in the Seaview Avenue roadway near the intersection of Seaview Avenue and Paerdegat Avenue North. The site is also located near an entrance to Canarsie Park to the southeast of the site. The main work area security concerns include vehicular traffic and pedestrians. Remedies to vehicular traffic will include traffic controls such as road work signs, flagmen, traffic cones and other barricades. In order to ensure pedestrian safety, the work area will be clearly marked and barricaded. During times when no work is being performed, the excavation pit will be covered with steel road plates and barricaded. In addition, all temporary stockpiles and excavated materials containerized in roll-off containers will be covered with polyethylene sheeting and barricaded when not in active use and removed daily. Traffic controls will be provided by the National Grid Contractor. The Contractor will be required to develop and submit a Maintenance and Protection of Traffic (MPT) Plan in accordance with NYCDOT regulations. The MPT Plan shall also describe the routes for truck traffic to remove site waste materials for disposal. All accommodations for park access will be developed by the Contractor in coordination with the NYC Department of Parks. All security concerns regarding overnight storage of contractor equipment and materials will be at the Contractor's discretion.

3.5 Excavation Approach

On September 30, 2020, the NYSDEC completed its review and approval of the Site Characterization Report. The report defined the extent of subsurface contamination associated with OU-2 and the delineation described therein was approved.

The extent of excavation, shown on **Figure 5**, will be approximately 115 feet long and will vary 10 to 13 feet wide. The limits of excavation may be slightly larger in order to encompass all contaminated soils. However, the width of the excavation in the northeast portion may be limited by the minimum clearance to be maintained adjacent to the active natural gas transmission main. As shown in the Figure 5, the northeast extent will be to monitoring well MW-8. The southwest extent will be to monitoring well MW-11. The southeast boundary will be the curb line, and the northwest boundary will be the retired and active natural gas mains. The excavation will also encompass the former standpipe pit. Based on detected PCB exceedances of the Restricted-Residential Use SCO in soil samples collected at 6 feet bgs, the vertical extent of excavation will extend to approximately 7 feet bgs, which is below the groundwater interface and where any contamination was detected. The majority of contamination was detected in soils around the 3- to 6-foot depth.

The means and methods for excavation to be employed by the selected Contractor will be at their discretion. It is anticipated that the soil excavation shall start at the northeast end of the proposed

excavation area and progress towards the southwest. It is also anticipated that the excavation will be completed in sections or cells in order to minimize impact to the neighboring community. The Contractor will be required to develop an Excavation Work Plan as a deliverable to National Grid prior to the on-set of any field work. The Plan will be reviewed and approved by National Grid before any work can be implemented.

The asphalt road surface, measuring approximately 6- to 12-inch thickness, will be removed, segregated and disposed off-site as construction debris. Following removal of the asphalt road surface, the subsurface soils will either be vacuum excavated utilizing a guzzler truck, or excavated utilizing a backhoe or similar equipment when not near the active transmission main as required by National Grid. Due to safety concerns, the soils in close proximity to the active natural gas main in the northeast portion of the excavation shall be vacuum excavated. This portion is approximately 50 to 60 feet in length running southwest from the northeast excavation boundary. As required by National Grid, a minimum safety clearance distance from the active gas main shall be maintained. For planning purposes, the Contractor shall plan to maintain a 4-foot distance from the active gas main unless otherwise directed by National Grid. The final tolerance zone will be determined upon completion of a National Grid-required Process Hazard Analysis and also after input and consultation with Damage Prevention and Transmission Engineering prior to the start of field activities. Based on the depth of the excavation to 7 feet bgs, shoring must be erected along the entire excavation in order to both preserve the clearance distance and maintain safety. Details and provisions for shoring within the excavation shall be provided by the Contractor. Since no active subsurface utilities will be located in the southwest portion of the excavation at the time of remediation, the soils in the southeast portion may be excavated with a backhoe or other similar piece of heavy equipment.

Due to the shallow depth to groundwater at the site, ranging from 3.5 to 6 feet, groundwater may be encountered in the excavation. Dry, unsaturated soil can be directly loaded into plastic-lined transport equipment selected by the Contractor for off-site disposal. Groundwater-saturated soil, on the other hand, can be stockpiled onto the dry soils further southwest along the excavation area to allow for the excess water to drain back into the excavation. Once the water has drained, the soils can then continue to be loaded into the plastic-lined transport equipment selected by the Contractor for off-site disposal. All excavated soils will be transported to a licensed disposal facility approved by National Grid. The excavated soils will be characterized as PCB Remediation Waste, as discussed in Section 6.0.

All soils within the approved limits of excavation will be removed to an approximate depth of 7 feet bgs. Following the completion of each section along the excavation, the excavation will be backfilled as soon

as practical with clean fill material. Details regarding backfilling is discussed further in Section 3.10 below.

3.6 Dewatering During IRM Activities

As stated, depth to groundwater at the site is approximately 3.5 feet to 6 feet bgs. Since the remedial excavation will be performed to approximately 7 feet bgs, groundwater may be encountered. Tight sheeting and other means will be required to minimize groundwater infiltration. The Contractor will be required to manage saturated soils and groundwater in a manner that will not require a well-point system for active dewatering. Should free product or an oily sheen be observed on the water surface, a vacuum pump truck or other means selected by the Contractor shall be available on-site to remove the product or sheen which will be transported for off-site disposal as appropriate. However, outside the contaminated excavation area, some dewatering may be necessary as part of the retired gas pipe abandonment process in order to facilitate pipe cleaning and grouting. Water encountered within the excavated pits will be sampled as required to ensure proper management of this liquid. The Contractor shall identify the means and methods to manage any water removed from the site in their Waste Management Plan.

3.7 Abandonment of Con Edison UGE Vault and Conduits

A former Con Edison underground electric (UGE) vault was located within the remedial boundary just southeast of the former standpipe pit. Associated conduits ran parallel to the active natural gas main and retired gas line. According to Con Edison, the former vault was a concrete structure with dimensions of 11.5 feet long by 4.5 feet wide by 6 feet deep. The primary electric feeder cables were housed in four (4) square-shaped 4-inch diameter concrete conduits. The conduits extended both to the northeast and to the southwest of the former UGE vault. Approximately 105 feet length of conduits were situated within the remedial boundaries. The UGE vault and conduits to the northeast of the vault have been removed by Con Edison in mid- to late-2020. The conduits to the southwest of the vault that remain in place within the excavation area will be removed, then cut and capped at the end of the remedial boundary by National Grid's Contractor in consultation with Con Edison.

3.8 Groundwater Monitoring Wells

As part of the site investigation and delineation activities, a total of fifteen (15) groundwater monitoring wells were installed in the vicinity of the spill release area. **Figure 4** shows the monitoring well locations. The monitoring wells are identified as MW-NE, MW-NW, MW-SE, MW-SW, MW-1 through MW-8 and MW-10 through MW-12. The wells were installed to depths of 7 to 10 feet bgs utilizing 2-inch PVC piping. Based on the proposed extent of excavation, approximately 10 monitoring wells will be removed to

facilitate the soil excavation. The remaining 5 wells will be properly abandoned in conformance with the NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy.

3.9 Endpoint Soil Sampling

The extent of contamination was delineated during the site investigations performed in May 2014, November-December 2014 and June-July 2015, and documented in the final Site Characterization Report (June 26, 2020). This report was accepted by NYSDEC in a letter dated September 30, 2020 (**Appendix A**). During the implementation of this IRM WP, only limited confirmatory endpoint soil sampling is proposed and as discussed in the October 16, 2020 scoping conference call with the NYSDEC. Endpoint soil sampling is proposed to be limited to bottom sampling of the excavation since shoring will be utilized for sidewall stabilization and will preclude sidewall accessibility. Should the remedial excavation be completed in sections, one bottom soil sample will be collected from each section. For example, if the total length of the excavation will be 115 feet and the Contractor will be completing the excavation in 15- to 20-foot length sections, a total of approximately four (4) to eight (8) bottom samples would be collected. The actual length of each section will be based on the Contractor's discretion. Alternatively, should the Contractor complete the remedial excavation in a different method, rather than sampling every 900 square feet (as per DER-10), bottom sampling is proposed on an approximate 300-400 square foot basis which equates to one sample approximately every 30 linear feet along the length of the excavation area. This would result in a total of four (4) bottom samples. All soils within the proposed extent of excavation will be removed and disposed of off-site. No soils will be re-used.

All samples will be collected by the National Grid Environmental Consultant and submitted to a NYSDOH ELAP-accredited laboratory for analysis in accordance with NYSDEC ASP Category B protocols. The endpoint soil samples will be analyzed for the full suite of 6 NYCRR Part 375 parameters (i.e., metals, including hexavalent chromium and mercury, total cyanide, PCBs, pesticides, VOCs and SVOCs) and emerging contaminants (i.e., 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS)). All sampling and laboratory analysis will be conducted in accordance with the Quality Assurance Project Plan (QAPP) attached as **Appendix D**.

3.10 Backfill and Restoration

Upon completion of remediation of each section along the excavation, the excavation area will be backfilled with clean fill material and stone and restored in accordance with the NYCDOT Highway Rules (Rules of the City of New York, Title 34, Section 2-11, April 5, 2019) and Standard Highway Specifications Volume I, February 1, 2009. It is anticipated that approximately 500 tons of clean fill material will be utilized to backfill the excavation. Clean fill material, as defined in NYSDEC 6 NYCRR Part 360, will

consist of uncontaminated inert material imported from a virgin or recycled source obtained from a permitted facility. NYCDOT specifications identify select granular fill as consisting of natural sand, well graded crushed stone or approved clean earth of low silt and clay content. The select granular fill shall have a sieve size no greater than 1/4 inch and shall be free from bricks, blocks, excavated pavement materials and/or organic material or other debris. The area below the groundwater interface shall be backfilled with clean sand or self-compacting backfill material.

All backfill material will be tested in compliance with NYSDEC DER-10 5.4(e) to demonstrate conformance with 6 NYCRR Part 375 Restricted-Residential Use Standards and will include testing for 1,4-dioxane and PFAS-related compounds. A Request to Import/Reuse Fill or Soil form will also be prepared and submitted to the NYSDEC.

4.0 RETIRED GAS PIPE ABANDONMENT PLAN

4.1 Overview

In addition to the site remediation activities, abandonment of the 30-inch retired gas main will be completed. The abandonment activities will be performed on a length of the retired gas main measuring approximately 250 feet southwest from the former standpipe pit running parallel with the Seaview Avenue curb line. There are two points where the retired gas main has welded ports that can be utilized for abandonment work. One is located in an access pit and is approximately 140 feet southwest from the former standpipe pit. A 16-inch flange fitting (i.e., the access port) with an effective diameter of 13 inches was welded onto the retired gas main within the access pit. The second point is an inspection pit located directly adjacent on the southwest side of the former standpipe pit where the retired gas main is equipped with a 6-inch Shortstopp® port. To accomplish abandonment, both ports will be needed and utilized.

4.2 Abandonment Activities

The pipe abandonment work will be performed by executing two different abandoning efforts. One section of pipe will only be grouted; the second section will be cleaned and then grouted.

The first section of the abandonment work begins where the retired gas main was originally filled with cement grout as part of the previous pipe abandonment work performed in 2012. Previous video inspection results, as described in the June 26, 2020 Site Characterization Report, showed that the unfilled portion of the pipeline spans approximately 110 feet southwest from the 16-inch access port. At approximately 10 feet southwest from this access port, the retired gas main has an offset and slopes downward. The top of the offset downslope will be the terminus of the grouting activities. This lower

portion of the main will be fully grouted to completely plug the 30-inch pipe from the end of the grout filled in 2012 to the top of the pipe offset, which is an approximate distance of 100 feet.

The second section of the retired gas main abandonment extends approximately 150 feet from the top of the pipe offset to the terminus of the retired main in the vicinity of the former standpipe pit. The Contractor will be required to work with Miller Environmental Group (MEG) who will employ the US EPA-permitted Envirojet™ process on the retired main during the cleaning and decontamination. The performance-based process requires two access points to be effective and utilizes a proprietary cleaning solution called Enviro Clean which is a performance-based organic decontamination solvent. The Contractor shall allow sufficient time for the grout from the first section abandonment to cure before implementation of the pipe decontamination process. Subsequent to conducting the Envirojet™ process, the Contractor will grout the jetted pipe from the location of the pipeline offset to the terminus of the pipe at the former standpipe pit. This combined approach will completely and safely abandon the retired gas main.

4.3 Final Disposition of Gas Main Liquids

Despite efforts in November 2019 to pump out all residual pipeline liquids, some residual liquids may still be present and the Contractor will be required to remove any remaining liquids. The Contractor will be required to develop a Contingency Plan as a deliverable for National Grid to review and approve prior to the onset of field work. The Contractor will have contingencies in place in case pipe liquids are encountered before or during the grouting activities. This is particularly important for the first section of pipeline below the offset that will be fully grouted. If any additional residual gas condensate or liquids are determined to be present inside the pipe, the Contractor will be required to be pumped out utilizing a vacuum truck or other similar means. Any and all recovered liquids will be containerized and transported for off-site disposal at a National Grid-approved TSCA permitted facility.

Any liquids remaining in the second section of pipeline resulting from the Envirojet™ process will be removed as part of that process. All recovered Enviro Clean solution will be managed per MEG's federal permit requirements.

5.0 DECONTAMINATION OF EQUIPMENT

All excavation equipment, guzzlers, vactors, vacuum trucks and non-disposable equipment used during the implementation of this IRM WP shall be thoroughly decontaminated in accordance with 40 CFR 761.79(c). The Contractor shall decontaminate any storage or other vessels impacted by PCBs in accordance with the methods described in Subpart S as referenced in section 761.79(c)(2)(ii). All

reusable sampling equipment will be decontaminated in accordance with the methods described in Subpart S. All wash and decontamination water shall be collected, containerized, characterized and properly disposed of off-site at a licensed facility. All non-reusable equipment, materials and PPE will also be collected and containerized for proper off-site disposal.

6.0 WASTE MANAGEMENT

The proposed IRM will generate soils and possibly groundwater potentially contaminated with PCBs along with C&D and other non-hazardous wastes. During implementation of this Work Plan, remediation wastes and all other wastes will be collected and containerized for off-site disposal. The Contractor will be required to develop a Waste Management Plan as a deliverable to National Grid for review and approval. The Plan will be required to detail how each anticipated waste stream will be handled and disposed of, and will be in accordance with the general guidance described herein.

As discussed in Section 3.5, the primary waste will be soils removed from the delineated excavation area. Since the spill source was natural gas condensate with high levels of PCBs, the soils will be treated as a remediation waste subject to both NYS hazardous regulations and TSCA requirements. Soils will be handled accordingly and disposed of at a TSCA-approved facility. It is anticipated that all excavated soils will be live-loaded and containerized in plastic-lined or dedicated transport equipment arranged by the Contractor for off-site disposal. Truck routes will be identified in the Contractor's MPT Plan (see Section 3.4). It is anticipated that disposal of approximately 500 tons of soil along with the asphalt road surface will be excavated. Remediation waste will be disposed of at National Grid-approved permitted disposal facilities in accordance with applicable hazardous waste and TSCA regulations and with EPA Spill Policy 40 CFR 761.120-135, as appropriate. The sections of Con Edison concrete conduits that remain within the excavation area will also be removed for disposal as TSCA-regulated waste (NYS hazardous waste).

Any residual liquids found in the retired gas main will be pumped out, containerized, sampled and transported for off-site disposal at a National Grid-approved disposal facility. All decontamination liquids shall be collected into drums. The Contractor will be required to manage saturated soils and groundwater in a manner that will not require active dewatering. However, any groundwater removed from the excavation area or as part of the retired gas pipe abandonment process will be pumped directly into a vacuum truck, frac tank or otherwise containerized and sampled prior to transport for off-site disposal. The National Grid Environmental Consultant will sign off and track all regulated waste related manifests and shipping papers. All C&D wastes from pavement or other removal will be sent to appropriate facilities for disposal by the Contractor. All incidental trash and garbage will also be removed and disposed of by the Contractor.

7.0 PROJECT MANAGEMENT

H2M architects + engineers (H2M), as a professional New York engineering corporation, has been retained by National Grid to monitor the implementation of the IRM WP in conjunction with National Grid's Environmental and Gas Departments. H2M will work in coordination with the NYSDEC, National Grid, and all contractor(s) and/or subconsultant(s) conducting the work outlined in this Work Plan. The primary responsibility of H2M will be environmental oversight of all project work and execution of the CAMP. H2M will also be monitoring Contractor compliance with all site-approved Plans that are required as deliverables. H2M will be directly responsible for sampling, data collection, documenting field activities, overseeing waste management as well as reporting. Qualified representatives from H2M will be on-site during all field activities and will also conduct the CAMP and other monitoring.

8.0 PROJECT REPORTING AND NOTIFICATION

8.1 Daily Reporting

Daily reports will be prepared by H2M for the National Grid Project Manager for the project file. The H2M Daily Field Report (DFR) will address all site activities and work progress, Contractor compliance with the various site Plans, and all other pertinent project field information.

The National Grid Project Manager will submit a daily summary report for review by the NYSDEC Project Manager. The daily reports will include:

- An update of progress made during the reporting day
- Locations of work and quantities of material imported to and exported from the site
- References to a site plan
- A summary of any and all complaints with relevant details (names, phone numbers, etc.)
- A summary of CAMP findings, including exceedances
- An explanation of notable site conditions

Daily reports will not be the mode of communication for notifying the NYSDEC of emergencies (e.g., accidents, spills, etc.), requests for changes to this IRM WP, and/or other sensitive or time critical information; however, such conditions will also be included in the daily reports. Emergency conditions, changes, and/or any deviations to this IRM WP will be addressed directly to the NYSDEC Project Manager via telephone or email. If there is a CAMP exceedance or a nuisance detection, the Environmental Consultant conducting the monitoring will promptly notify the National Grid Project Manager. The NYSDEC and NYSDOH will also be notified by the National Grid Project Manager within

24 hours. If site conditions warrant, the National Grid Project Manager may request to change from daily to weekly reports that include the above information.

8.2 Monthly Reporting

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers within one week following the end of the month of the reporting period and will include:

- Activities relative to the site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e., quantities of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

8.3 Construction Completion Report

Following the completion of the project, a Construction Completion Report documenting the soil excavation and pipe abandonment activities will be prepared. All laboratory data and waste manifests will be included. The report will provide a thorough description of the soil excavation program, pipe abandonment work, figures showing the final extents of excavation, endpoint sampling locations and disposition of the gas main, any deviations from this IRM WP and conclusions regarding the success of remediation. The Construction Completion Report will be signed and stamped by a Professional Engineer licensed in the State of New York and issued for NYSDEC approval. National Grid will seek a liability release per the Administrative Order on Consent.

The Construction Completion Report will certify that:

1. Data generated was useable and met the remedial requirements;
2. The remedial work conformed to the IRM WP;
3. Dust, odor, and vapor control measures were implemented during invasive work and conformed with the IRM WP;
4. Remediation waste was transported and disposed in accordance with the IRM WP; and
5. Source approval and sampling of imported acceptable fill was completed in a manner consistent with the methodology of the IRM WP.

The Construction Completion Report will also include:

1. Description of problems encountered and their resolutions;
2. Description of changes in the interim remedial measures from the elements provided in the IRM WP and associated design documents and the reasons for them;
3. Description of the deviations from the approved IRM WP;
4. Listing of waste streams, quantity of materials disposed, and where they were disposed;
5. List of the remediation standards applied to the remedial actions;
6. Description of source and quality of fill;
7. A summary of all residual impacted material left on the site, if any;
8. A tabular summary of all sampling results and all material characterization results and other sampling and chemical analysis performed under the IRM WP;
9. Written and photographic documentation of all remedial work performed under this remedy;
10. Copies of all the submitted progress reports;
11. Certifications, manifests, and bills of lading for excavated materials transported off-site;
12. An accounting of the destination of all material removed from the site, including excavated soil, historic fill material, solid waste, hazardous waste, non-regulated material, and liquids; and
13. Documentation associated with disposal of all regulated material will also include records and approvals for receipt of the material.

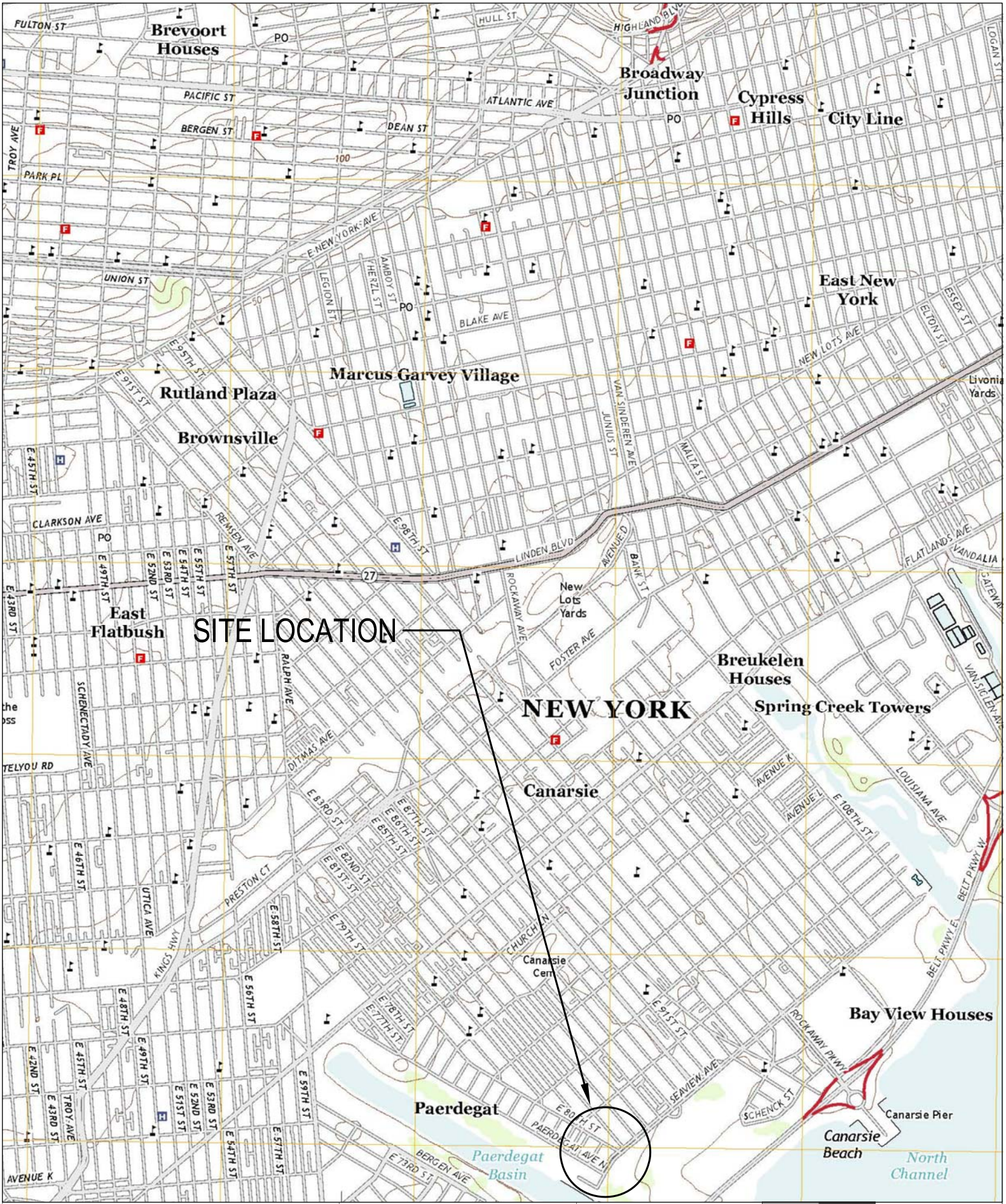
It is anticipated by National Grid that once the Construction Completion Report is accepted by the NYSDEC that the IRM will serve as the final remedy for the spill remediation and that the spill will be closed.

9.0 PROJECT SCHEDULE

This site investigation and pipe abandonment plan is expected to require approximately thirty-four to thirty-eight weeks to complete following the plan submittal. Below is a table depicting approximate time frames for individual tasks. The final schedule will be determined by the selected Contactor in coordination with National Grid. Furthermore, restoration activities could be affected by colder weather and might require additional schedule revisions. A project schedule gantt chart is provided in **Appendix E**.

Task	Time Frame
Plan Submittal and Regulatory Approval	6 weeks
Project Out to Bid and Contractor Bid Submittal	6 weeks
Bid Award and Contract	7 weeks
Contractor Deliverables	3 weeks
Mobilization and Soil Excavation	4 weeks
Gas Main Cleaning and Grouting	2 weeks
Restoration	1 weeks
Laboratory Analysis	3 weeks
Data Validation	3 weeks
Construction Completion Report	4 weeks
Total Estimated	**39 weeks**

FIGURES



CLIENT	FIGURE 1	PROJECT #: NGRD1221	H2M architects + engineers
SITE LOCATION MAP		DATE: NOVEMBER 2020	Melville, NY / New City, NY — Albany, NY / Parsippany, NJ
PAERDEGAT BASIN GAS CONDENSATE RELEASE BROOKLYN, NY	SCALE: 1" = 2750' (N)		

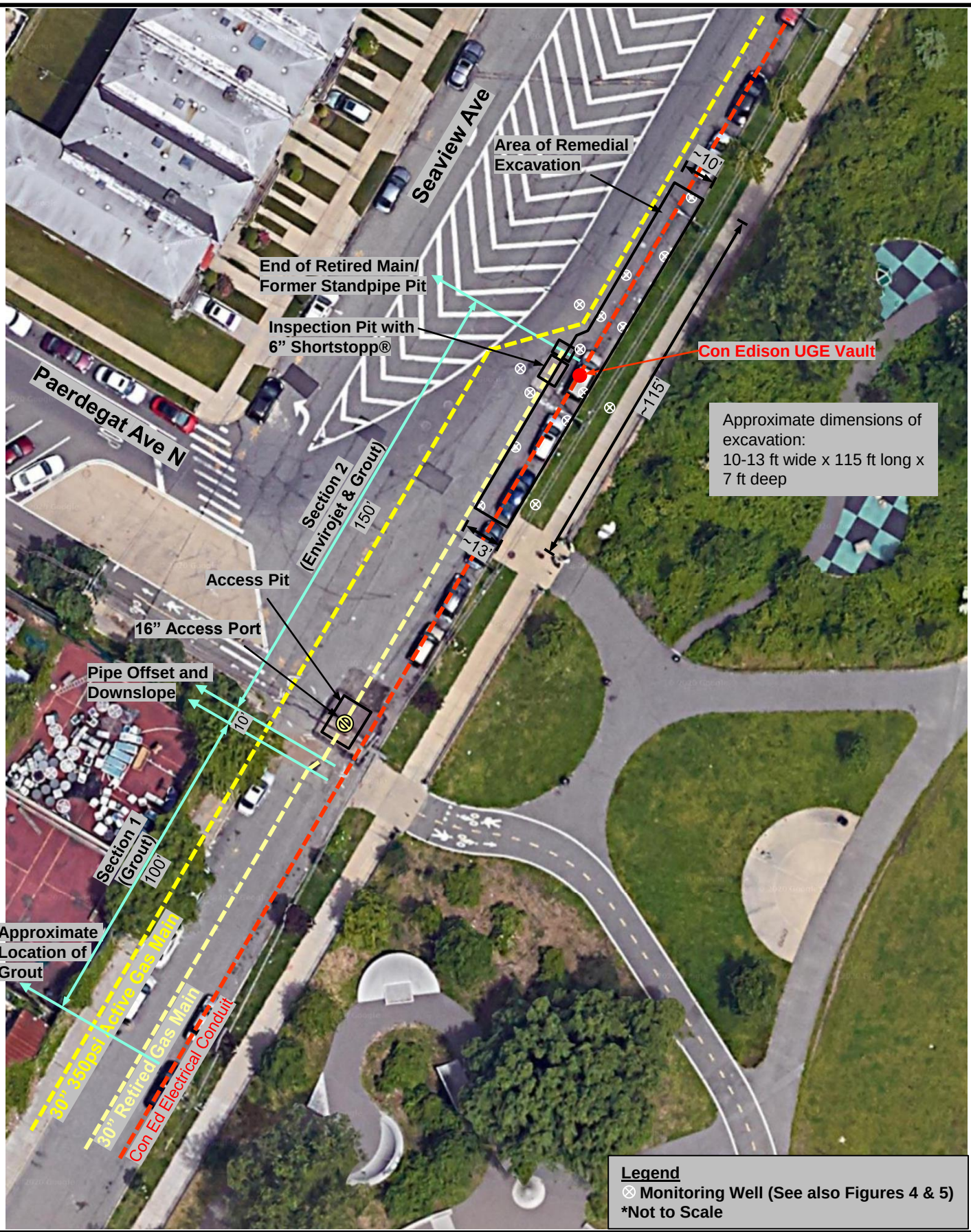


Figure 2. Site Plan
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

N

H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

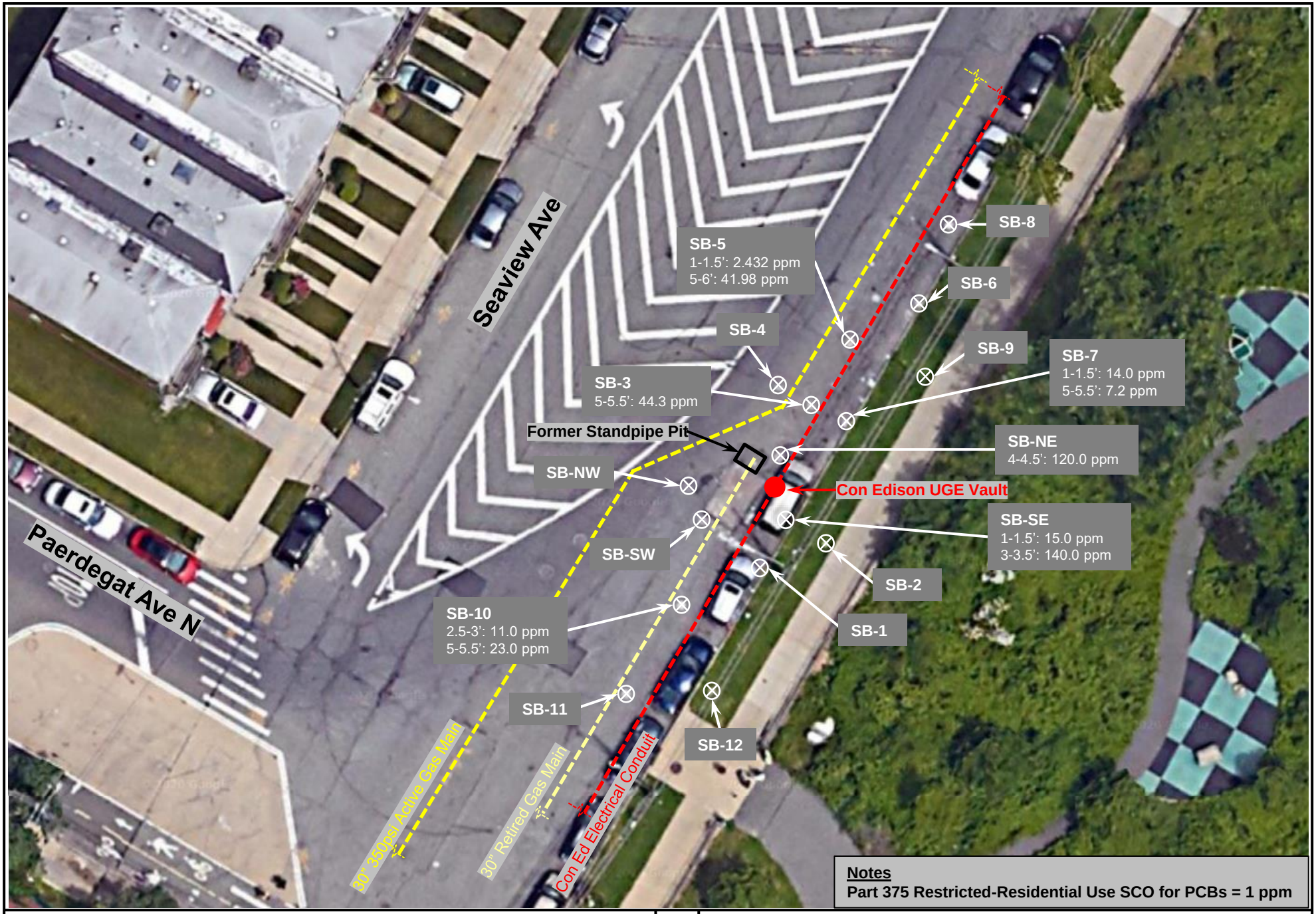


Figure 3. **Total PCB Results in Soil Borings (Exceedances Only)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

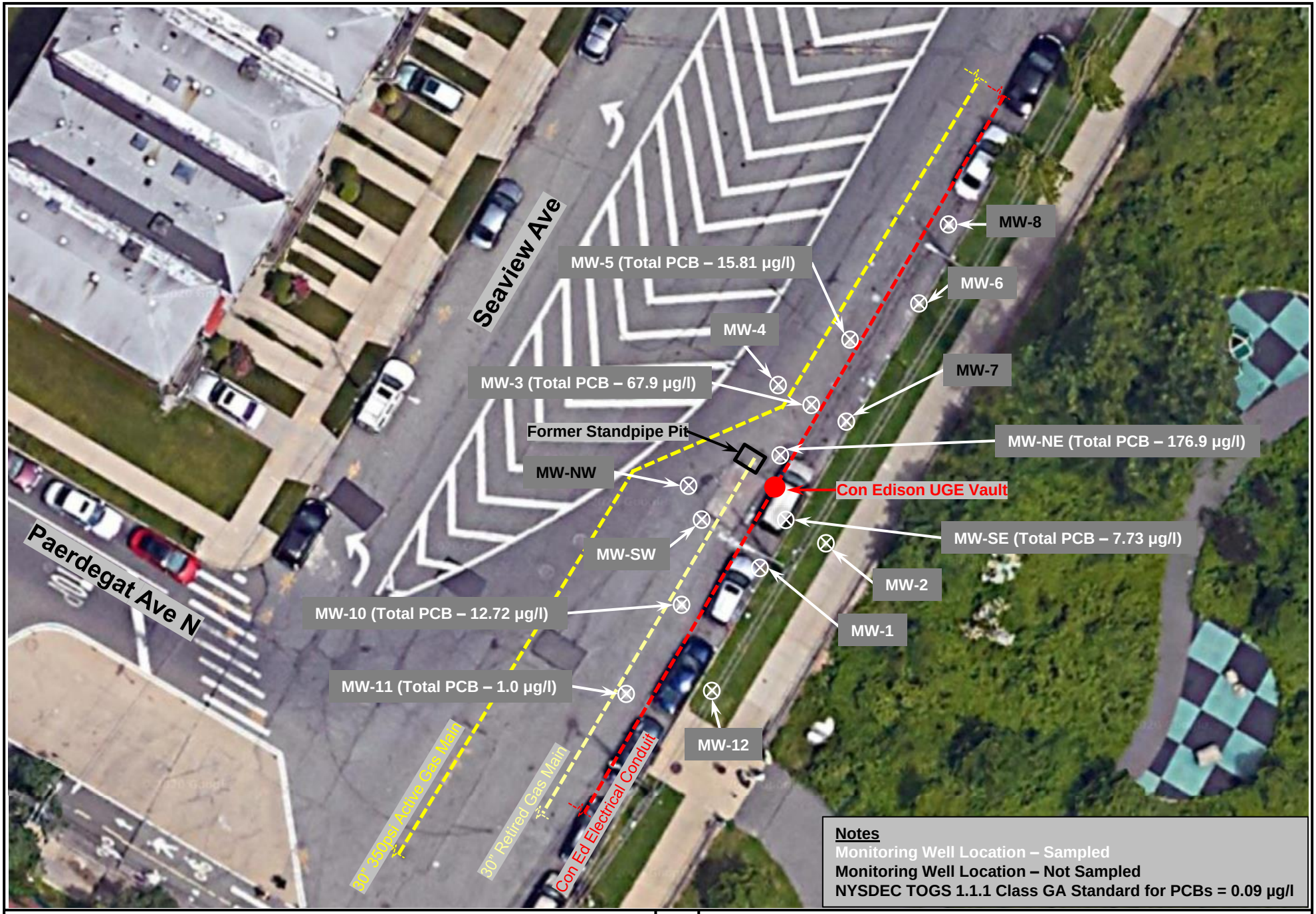

Figure 4. **Monitoring Well Locations and PCB Results (June 2020)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

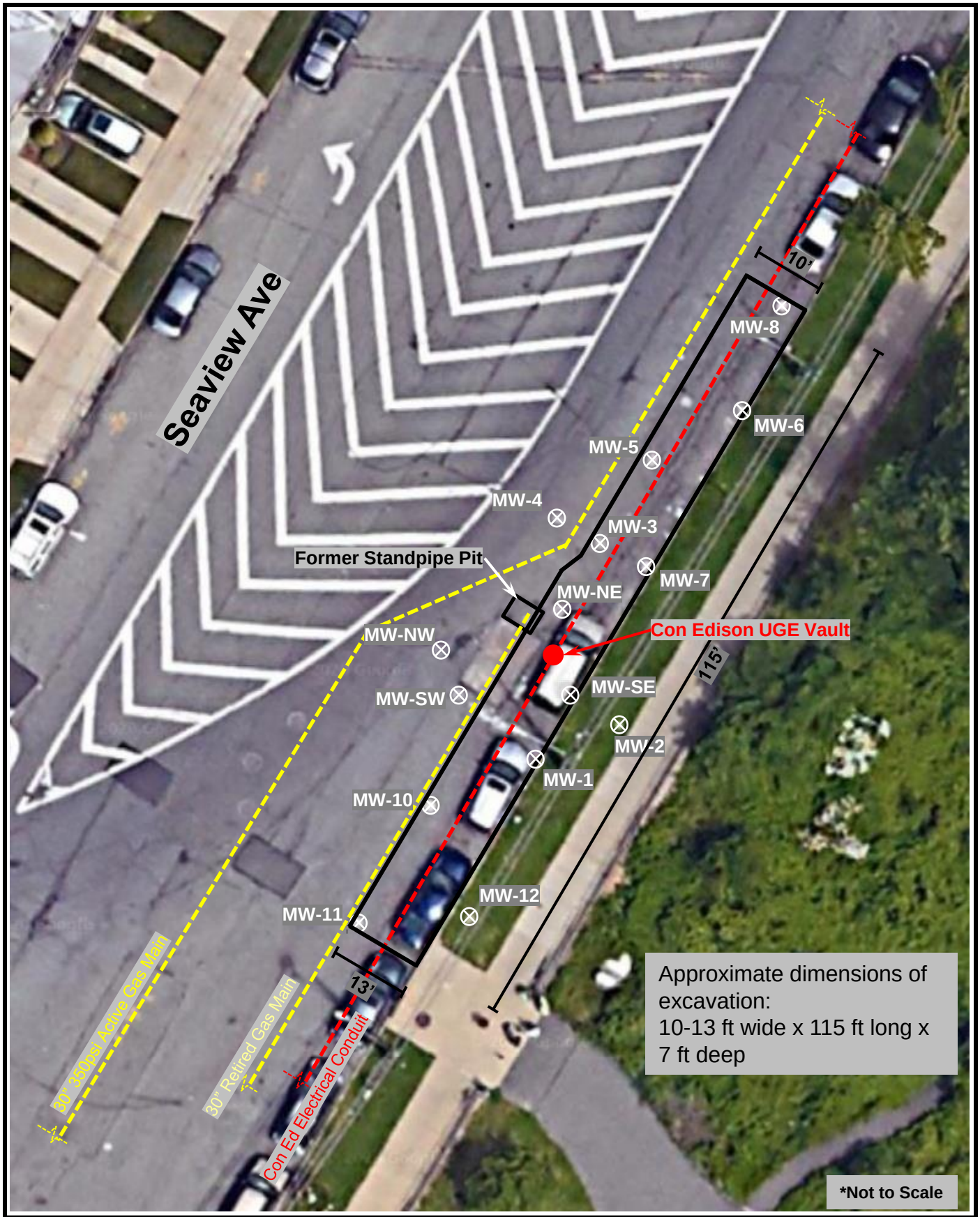

Figure 5. Extent of Excavation
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

N

H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

TABLES

Table 1. Summary of Gas Condensate Characterization Results

Sample ID:	**Standpipe Oil**
Sample Date:	10/2/2012
Lab Sample ID:	1210020-001
Analyte	**mg/kg**
Polychlorinated Biphenyls (PCBs)	
Aroclor 1242	10,000
Volatile Organic Compounds (VOCs)	
Benzene	1,700
Ethylbenzene	770
Toluene	4,100
Xylenes, Total	6,900
Semi-Volatile Organic Compounds (SVOCs)	
2-methylnaphthalene	3,900
Naphthalene	3,800

Table 2. Pipe Liquid Characterization Results (February 2019)

Sample ID:		Pipe Liquid	
Sample Date:		2/19/2019	
Lab Sample ID:		1902114-001	
Analyte	**Units**	**Result**	**Q**
Alkalinity			
Alkalinity, Total (as CaCO3)	mg/l CaCO3	165	
Chloride			
Chloride	mg/l	460	
Ignitability/Flashpoint			
Ignitability	°F	65	U
Polychlorinated Biphenyls (PCBs)			
Aroclor 1242	µg/l	11,000	D
Aroclor 1260	µg/l	320	D
Salinity			
Salinity	mg/l	830	
Total Suspended Solids			
Suspended Solids (Residue, Non-Filterable)	mg/l	257	
Volatile Organic Compounds (VOCs)			
1,2,4,5-Tetramethylbenzene	µg/l	140	D
1,2,4-Trimethylbenzene	µg/l	280	D
1,3,5-Trimethylbenzene	µg/l	130	D
4-Isopropyltoluene	µg/l	13	DJ
Benzene	µg/l	2,400	D
Cyclohexane	µg/l	580	D
Ethylbenzene	µg/l	56	D
Isopropylbenzene	µg/l	15	DJ
m,p-Xylene	µg/l	870	D
Methylcyclohexane	µg/l	830	D
n-Butylbenzene	µg/l	11	DJ
n-Propylbenzene	µg/l	13	DJ
Naphthalene	µg/l	230	D
o-Xylene	µg/l	410	D
p-Diethylbenzene	µg/l	87	D
p-Ethyltoluene	µg/l	170	D
sec-Butylbenzene	µg/l	8.5	DJ
Toluene	µg/l	1,600	D
Xylenes, Total	µg/l	1,300	D

mg/l = milligram per liter
µg/l = microgram per liter

Qualifiers:
J - Estimated value. Analyte was detected below the limit of quantitation but greater than the established Limit of Detection.
D - Analyte concentration was obtained from diluted analysis or from analysis using reduced sample volume.

Table 3a. Soil Boring Sampling Results for VOCs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5'		SB-SE 3-3.5' [3]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [2]		SB-NW 1-1.5'		SB-NW 4-4.5'	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001A		1405K02-002ARE		1405K02-003A		1405K02-004A		1405K02-005A		1405K02-006ADL		1405K02-007A		1405K02-008A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																		
1,1,1-Trichloroethane	680	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1,2,2-Tetrachloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1,2-Trichloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1-Dichloroethane	270	26,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1-Dichloroethene	330	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloroethane	20	3,100	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloroethene (total)	190	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloropropane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
2-Butanone	120	100,000	15	U	14	U	14	U	5	J	13	U	62	U	17		9	J
2-Hexanone	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
4-Methyl-2-pentanone	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Acetone	50	100,000	15	U	**170**		14	U	24		13	U	**75**	**DB**	**85**		47	
Benzene	60	4,800	15	U	14	U	14	U	10	J	13	U	62	U	15	U	3	J
Bromodichloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Bromoform	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Bromomethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Carbon disulfide	---	---	15	U	1	J	14	U	11	U	13	U	62	U	5	J	19	U
Carbon tetrachloride	760	2,400	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chlorobenzene	1,100	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloroform	370	49,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
cis-1,3-Dichloropropene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Dibromochloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Ethylbenzene	1,000	41,000	15	U	14	U	14	U	10	J	13	U	16	DJ	15	U	19	U
Methylene chloride	50	100,000	2	BJ	14	U	2	BJ	11	U	13	U	62	U	15	U	19	U
Styrene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Tetrachloroethene	1,300	19,000	15	U	16		14	U	11	U	13	U	62	U	15	U	19	U
Toluene	700	100,000	15	U	5	J	14	U	11	U	13	U	62	U	15	U	19	U
trans-1,3-Dichloropropene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Trichloroethene	470	21,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Vinyl chloride	20	900	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Xylene (total)	260	100,000	6	J	57		14	U	30		4	J	**290**	**D**	15	U	19	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

(3) Sample was re-extracted and reanalyzed.

µg/kg = microgram per kilogram

Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

Table 3b. Soil Boring Sampling Results for SVOCs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5'		SB-SE 3-3.5' [2]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [3]		SB-NW 1-1.5' [3]		SB-NW 4-4.5' [2]	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001B		1405K02-002BDL		1405K02-003B		1405K02-004B		1405K02-005B		1405K02-006BRE		1405K02-007BRE		1405K02-008BDL	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semivolatile Organic Compounds (SVOCs)																		
1,2,4-Trichlorobenzene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,2-Dichlorobenzene	1,100	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,3-Dichlorobenzene	2,400	49,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,4-Dichlorobenzene	1,800	13,000	420	U	1,700	U	350	U	380	U	370	U	410	U	94	J	2,000	U
2,2´-oxybis(1-chloropropane)	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4,5-Trichlorophenol	---	---	1,100	U	1,700	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
2,4,6-Trichlorophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4-Dichlorophenol	---	---	420	U	1,700	U	350	U	960	U	370	U	410	U	360	U	2,000	U
2,4-Dimethylphenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4-Dinitrophenol	---	---	1,100	U	1,700	U	890	U	380	U	940	U	1,000	U	910	U	5,100	U
2,4-Dinitrotoluene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,6-Dinitrotoluene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Chloronaphthalene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Chlorophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Methylnaphthalene	---	---	420	U	8,800	D	350	U	380	U	370	U	860		360	U	2,000	U
2-Methylphenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
2-Nitrophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
3,3´-Dichlorobenzidine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
3-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4,6-Dinitro-2-methylphenol	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4-Bromophenyl-phenylether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chloro-3-methylphenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chloroaniline	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chlorophenyl-phenylether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Methylphenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4-Nitrophenol	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
Acenaphthene	20,000	100,000	420	U	220	J	350	U	380	U	370	U	250	J	1,400		3,100	D
Acenaphthylene	100,000	100,000	420	U	430	DJ	350	U	380	U	370	U	410	U	110	J	2,000	U
Anthracene	100,000	100,000	110	J	1,700	U	350	U	380	U	94	J	410	U	410		2,500	D
Benzo(a)anthracene	1,000	1,000	430		180	J	350	U	380	U	250	J	160	J	780		**5,600**	D
Benzo(a)pyrene	1,000	1,000	440		200	J	350	U	380	U	230	J	200	J	720		**4,600**	D
Benzo(b)fluoranthene	1,000	1,000	530		380	DJ	350	U	380	U	260	J	230	J	910		**5,600**	D
Benzo(g,h,i)perylene	100,000	100,000	200	J	200	J	350	U	380	U	100	J	110	J	300	J	1,500	DJ
Benzo(k)fluoranthene	800	3,900	330	J	210	J	350	U	380	U	93	J	120	J	490		**3,100**	D
Bis(2-chloroethoxy)methane	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Bis(2-chloroethyl)ether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Bis(2-ethylhexyl)phthalate	---	---	150	J	3,000	D	350	U	380	U	370	U	590		190	J	2,000	U
Butyl benzyl phthalate	---	---	420	U	450	DJ	350	U	380	U	370	U	410	U	360	U	2,000	U
Carbazole	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	1,100	DJ
Chrysene	1,000	3,900	450		210	J	350	U	380	U	270	J	140	J	710		**5,000**	D
Dibenzo(a,h)anthracene	330	330	420	U	1,700	U	350	U	380	U	370	U	410	U	74	J	**420**	**DJ**
Dibenzofuran	---	---	420	U	430	DJ	350	U	380	U	370	U	410	U	510		860	DJ
Diethylphthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Dimethylphthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Di-n-butyl phthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Di-n-octyl phthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Fluoranthene	100,000	100,000	760		140	J	350	U	380	U	440		100	J	1,900		14,000	D
Fluorene	30,000	100,000	420	U	600	DJ	350	U	380	U	370	U	90	J	230	J	1,700	DJ
Hexachlorobenzene	330	1,200	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachlorobutadiene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachlorocyclopentadiene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachloroethane	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Indeno(1,2,3-cd)pyrene	500	500	180	J	150	J	350	U	380	U	95	J	86	J	250	J	**1,700**	DJ
Isophorone	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Naphthalene	12,000	100,000	100	J	2,000	D	350	U	380	U	370	U	650		120	J	1,000	DJ
Nitrobenzene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
N-Nitroso-di-n-propylamine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
N-Nitrosodiphenylamine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Pentachlorophenol	800	6,700	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
Phenanthrene	100,000	100,000	470		480	DJ	350	U	380	U	450		410	U	610		12,000	D
Phenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Pyrene	100,000	100,000	900		830	DJ	350	U	380	U	560		440		2,000		14,000	D

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.

Table 3c. Soil Boring Sampling Results for PCBs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5' [2]		SB-SE 3-3.5' [2]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [2]		SB-NW 1-1.5'		SB-NW 4-4.5'	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001bDL		1405K02-002bDL		1405K02-003b		1405K02-004b		1405K02-005b		1405K02-006bDL		1405K02-007b		1405K02-008b	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1016	100	1,000	2,500	UX	25,000	UX	35	UX	38	U	38	U	8,100	UX	36	UX	51	U
Aroclor 1221	100	1,000	5,100	U	51,000	U	72	U	78	U	76	U	17,000	U	73	U	100	U
Aroclor 1232	100	1,000	2,500	UX	25,000	UX	35	UX	38	U	38	U	8,100	UX	36	UX	51	U
Aroclor 1242	100	1,000	**15,000**	**D**	**140,000**	**D**	**110**		38	U	**45**	**P**	**120,000**	**D**	**290**		51	U
Aroclor 1248	100	1,000	2,500	U	25,000	U	35	UX	38	U	38	U	8,100	U	36	UX	51	U
Aroclor 1254	100	1,000	2,500	U	25,000	U	35	U	38	U	38	U	8,100	U	36	UX	51	U
Aroclor 1260	100	1,000	2,500	U	25,000	U	35	U	38	U	38	U	8,100	U	**130**	**P**	51	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

(3) Sample was re-extracted and reanalyzed.

µg/kg = microgram per kilogram

Bolded values indicate detected PCB concentrations.

Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

D - Compound reanalyzed at a secondary dilution factor.

X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 4a. Soil Boring Sampling Results for VOCs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5'		SB-1 5-5.5'		SB-2 1.5-2'		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]		SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5'		SB-5 5-6' [2]		SB-6 1-1.5'		SB-6 5-5.5'	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014		11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05		BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411F86-002A		1411F86-003A		1411F23-002A		1411F23-003A		1411E60-002A		1411E60-003ADL		1411E60-004A		1411E60-005A		1411F23-005A		1411F23-006ADL		1411F86-004A		1411F86-005A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																										
1,1,1-Trichloroethane	680	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1,2,2-Tetrachloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1,2-Trichloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1-Dichloroethane	270	26,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1-Dichloroethene	330	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloroethane	20	3,100	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloroethene (total)	190	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloropropane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
2-Butanone	120	100,000	10	U	10	U	22		10	U	10	U	11	U	3	J	3	J	12	U	990	U	12	U	9	U
2-Hexanone	---	---	10	U	10	U	14	U	10	U	10	U	11	U	2	J	13	U	12	U	990	U	12	U	9	U
4-Methyl-2-pentanone	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Acetone	50	100,000	4	BJ	7	BJ	**120**	**B**	8	BJ	11	B	**86**	**B**	17	B	18	B	12	U	990	U	7	BJ	9	B
Benzene	60	4,800	10	U	10	U	14	U	10	U	10	U	22		11	U	13	U	12	U	990	U	12	U	9	U
Bromodichloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Bromoform	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Bromomethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Carbon disulfide	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Carbon tetrachloride	760	2,400	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chlorobenzene	1,100	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chloroform	370	49,000	1	BJZ	1	BJZ	2	J	1	J	10	U	11	U	11	U	13	U	2	J	990	U	12	U	9	U
Chloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	530	DJ	12	U	9	U
cis-1,3-Dichloropropene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Dibromochloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Ethylbenzene	1,000	41,000	10	U	10	U	14	U	10	U	10	U	480	D	11	U	13	U	12	U	**7,700**	**D**	12	U	9	U
Methylene chloride	50	100,000	2	BJ	2	BJ	1	BJ	1	BJ	10	U	1	BJ	11	U	3	BJ	12	U	990	U	2	BJ	2	BJ
Styrene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Tetrachloroethene	1,300	19,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Toluene	700	100,000	10	U	10	U	14	U	10	U	10	U	4	J	11	U	13	U	12	U	990	U	12	U	9	U
trans-1,3-Dichloropropene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Trichloroethene	470	21,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Vinyl chloride	20	900	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Xylene (total)	260	100,000	10	U	10	U	14	U	10	U	10	U	**1,800**	**D**	5	J	13	U	12	U	**46,000**	**D**	12	U	9	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Shaded values indicate soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

Z - Compound has positive results, and a %D greater than 20% in the CCV on the day of analysis or a %RSD greater than 20% in the initial calibration.

Table 4b. Soil Boring Sampling Results for SVOCs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5' [3]		SB-1 5-5.5'		SB-2 1.5-2' [3]		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]		SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5' [3]		SB-5 5-6'		SB-6 1-1.5' [3]		SB-6 5-5.5'	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014		11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05		BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411F86-002BRE		1411F86-003B		1411F23-002BRE		1411F23-003B		1411E60-002B		1411E60-003BDL		1411E60-004B		1411E60-005B		1411F23-005BRE		1411F23-006B		1411F86-004BRE		1411F86-005B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semivolatile Organic Compounds (SVOCs)																										
1,2,4-Trichlorobenzene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,2-Dichlorobenzene	1,100	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,3-Dichlorobenzene	2,400	49,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,4-Dichlorobenzene	1,800	13,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,2`-oxybis(1-chloropropane)	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4,5-Trichlorophenol	---	---	950	U	980	U	940	U	1000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2,4,6-Trichlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dichlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dimethylphenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dinitrophenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2,4-Dinitrotoluene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,6-Dinitrotoluene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Chloronaphthalene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Chlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Methylnaphthalene	---	---	380	U	390	U	370	U	400	U	360	U	8,800	D	350	U	410	U	380	U	5,400		390	U	360	U
2-Methylphenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Nitroaniline	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2-Nitrophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
3,3`-Dichlorobenzidine	---	---	380	U	390	U	370	U	400	U	360	U	99	J	350	U	410	U	380	U	390	U	390	U	360	U
3-Nitroaniline	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4,6-Dinitro-2-methylphenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4-Bromophenyl-phenylether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chloro-3-methylphenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chloroaniline	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chlorophenyl-phenylether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Methylphenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Nitroaniline	---	---	950	U	980	U	940	U	1000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4-Nitrophenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
Acenaphthene	20,000	100,000	380	U	390	U	370	U	400	U	360	U	330	J	350	U	410	U	380	U	390	U	390	U	360	U
Acenaphthylene	100,000	100,000	380	U	390	U	370	U	400	U	360	U	110	J	350	U	410	U	380	U	390	U	390	U	360	U
Anthracene	100,000	100,000	110	J	390	U	370	U	400	U	87	J	170	J	350	U	410	U	380	U	390	U	390	U	360	U
Benzo(a)anthracene	1,000	1,000	410		390	U	130	J	400	U	180	J	210	J	180	J	410	U	86	J	390	U	390	U	360	U
Benzo(a)pyrene	1,000	1,000	440		390	U	140	J	400	U	180	J	110	J	190	J	410	U	110	J	390	U	390	U	360	U
Benzo(b)fluoranthene	1,000	1,000	550		390	U	190	J	400	U	200	J	170	J	230	J	410	U	150	J	390	U	88	J	360	U
Benzo(g,h,i)perylene	100,000	100,000	250	J	390	U	99	J	400	U	80	J	360	U	93	J	410	U	77	J	390	U	390	U	360	U
Benzo(k)fluoranthene	800	3,900	340	J	390	U	140	J	400	U	150	J	110	J	140	J	410	U	380	U	390	U	390	U	360	U
Bis(2-chloroethoxy)methane	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Bis(2-chloroethyl)ether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Bis(2-ethylhexyl)phthalate	---	---	92	J	390	U	99	J	400	U	94	J	180	J	350	U	410	U	380	U	390	U	390	U	360	U
Butyl benzyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Carbazole	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Chrysene	1,000	3,900	450		390	U	190	J	400	U	200	J	210	J	200	J	410	U	110	J	390	U	390	U	360	U
Dibenzo(a,h)anthracene	330	330	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Dibenzofuran	---	---	380	U	390	U	370	U	400	U	360	U	350	J	350	U	410	U	380	U	91	J	390	U	360	U
Diethylphthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Dimethylphthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Di-n-butyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Di-n-octyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Fluoranthene	100,000	100,000	620		390	U	220	J	400	U	360		730		280	J	410	U	160	J	390	U	390	U	360	U
Fluorene	30,000	100,000	380	U	390	U	370	U	400	U	360	U	400		350	U	410	U	380	U	110	J	390	U	360	U
Hexachlorobenzene	330	1,200	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachlorobutadiene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachlorocyclopentadiene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachloroethane	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Indeno(1,2,3-cd)pyrene	500	500	250	J	390	U	90	J	400	U	79	J	360	U	94	J	410	U	380	U	390	U	390	U	360	U
Isophorone	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Naphthalene	12,000	100,000	380	U	390	U	370	U	400	U	73	J	5,700		350	U	410	U	380	U	6,100		390	U	360	U
Nitrobenzene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
N-Nitroso-di-n-propylamine	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
N-Nitrosodiphenylamine	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Pentachlorophenol	800	6,700	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
Phenanthrene	100,000	100,000	320	J	390	U	150	J	400	U	200	J	810		150	J	410	U	86	J	79	J	390	U	360	U
Phenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Pyrene	100,000	100,000	940		390	U	390		400	U	360		870		290	J	88	J	220	J	390	U	120	J	360	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate background soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.

Table 4c. Soil Boring Sampling Results for PCBs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5'		SB-1 5-5.5'		SB-2 1.5-2'		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05	
Lab Sample ID:			1411F86-002B		1411F86-003B		1411F23-002B		1411F23-003B		1411E60-002B		1411E60-003BDL	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	38	UX	39	U	37	UX	40	U	36	U	36	UX
Aroclor 1221	100	1,000	76	U	79	U	76	U	82	U	72	U	73	U
Aroclor 1232	100	1,000	38	UX	39	U	37	UX	40	U	36	U	36	UX
Aroclor 1242	100	1,000	**140**		39	U	**490**		40	U	36	U	**39,000**	**D**
Aroclor 1248	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U
Aroclor 1254	100	1,000	**100**		39	U	**55**	**P**	40	U	**20**	**PJ**	**4,400**	**D**
Aroclor 1260	100	1,000	**32**	**PJ**	39	U	37	U	40	U	36	U	**900**	**D**
Aroclor 1262	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U
Aroclor 1268	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5' [2]		SB-5 5-6' [2]		SB-6 1-1.5'		SB-6 5-5.5'	
Sample Date:			11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411E60-004B		1411E60-005B		1411F23-005BDL		1411F23-006BDL		1411F86-004B		1411F86-005B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	35	U	41	U	38	UX	39	UX	39	U	36	U
Aroclor 1221	100	1,000	72	U	84	U	77	U	78	U	79	U	73	U
Aroclor 1232	100	1,000	35	U	41	U	38	UX	39	UX	39	U	36	U
Aroclor 1242	100	1,000	35	U	41	U	**2,200**	**D**	**38,000**	**D**	39	U	36	U
Aroclor 1248	100	1,000	35	U	41	U	38	U	39	U	39	U	36	U
Aroclor 1254	100	1,000	35	U	41	U	**180**	**P**	**3,100**	**D**	39	U	36	U
Aroclor 1260	100	1,000	35	U	41	U	**52**	**P**	**880**	**D**	39	U	36	U
Aroclor 1262	100	1,000	35	U	41	U	38	U	39	U	39	U	36	U
Aroclor 1268	100	1,000	35	U	41	U	38	U	39	U	39	U	36	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Bolded values indicate detected PCB concentrations.

Shaded values indicate background soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 5a. Soil Boring Sampling Results for VOCs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5'	SB-7 5-5.5'	SB-8 1-1.5'	SB-8 5-5.5'	SB-9 1.5-2'	SB-9 5-5.5'	SB-10 2.5-3'	SB-10 5-5.5' [2]	SB-11 1-1.5'	SB-11 5-5.5'	SB-12 1.5-2'	SB-12 5-5.5'
Sample Date:			6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/17/2015	6/18/2015	6/18/2015	6/18/2015	6/18/2015	6/18/2015	6/18/2015
Client Sample ID:			BL1506125-02	BL1506125-03	BL1506125-04	BL1506125-05	BL1506125-06	BL1506125-07	BL1507033-03	BL1507033-04	BL1507033-05	BL1507033-06	BL1507033-07	BL1507033-08
Lab Sample ID:			1506F54-002A	1506F54-003A	1506F54-004A	1506F54-005A	1506F54-006A	1506F54-007A	1506F70-002A	1506F70-003ADL	1506F70-004A	1506F70-005A	1506F70-006A	1506F70-007A
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	680	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,1,2,2-Tetrachloroethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,1,2-Trichloroethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,1-Dichloroethane	270	26,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,1-Dichloroethene	330	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,2-Dichloroethane	20	3,100	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,2-Dichloroethene (total)	190	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
1,2-Dichloropropane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
2-Butanone	120	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
2-Hexanone	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
4-Methyl-2-pentanone	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Acetone	50	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Benzene	60	4,800	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Bromodichloromethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Bromoform	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Bromomethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Carbon disulfide	---	---	12 U	2 J	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Carbon tetrachloride	760	2,400	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Chlorobenzene	1,100	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Chloroethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Chloroform	370	49,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Chloromethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
cis-1,3-Dichloropropene	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Dibromochloromethane	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Ethylbenzene	1,000	41,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	62	9 U	8 U	13 U	10 U
Methylene chloride	50	100,000	2 BJ	4 BJ	2 BJ	5 BJ	4 BJ	2 BJ	2 BJ	9 U	1 BJ	2 BJ	2 BJ	2 BJ
Styrene	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Tetrachloroethene	1,300	19,000	12 U	11 U	5 J	10 U	12 U	9 U	2 J	9 U	9 U	8 U	13 U	10 U
Toluene	700	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
trans-1,3-Dichloropropene	---	---	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Trichloroethene	470	21,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Vinyl chloride	20	900	12 U	11 U	12 U	10 U	12 U	9 U	12 U	9 U	9 U	8 U	13 U	10 U
Xylene (total)	260	100,000	12 U	11 U	12 U	10 U	12 U	9 U	12 U	**3,700 D**	9 U	2 J	13 U	10 U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

Table 5b. Soil Boring Sampling Results for SVOCs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5'[3]		SB-7 5-5.5'		SB-8 1-1.5'[3]		SB-8 5-5.5'		SB-9 1.5-2'[3]		SB-9 5-5.5'		SB-10 2.5-3'		SB-10 5-5.5'[2]		SB-11 1-1.5'[3]		SB-11 5-5.5'		SB-12 1.5-2'[3]		SB-12 5-5.5'	
Sample Date:			6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015	
Client Sample ID:			BL1506125-02		BL1506125-03		BL1506125-04		BL1506125-05		BL1506125-06		BL1506125-07		BL1507033-03		BL1507033-04		BL1507033-05		BL1507033-06		BL1507033-07		BL1507033-08	
Lab Sample ID:			1506F54-002BRE		1506F54-003B		1506F54-004BRE		1506F54-005B		1506F54-006BRE		1506F54-007B		1506F70-002B		1506F70-003BDL		1506F70-004BRE		1506F70-005B		1506F70-006BRE		1506F70-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semi-volatile Organic Compounds (SVOCs)																										
1,2,4-Trichlorobenzene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,2-Dichlorobenzene	1,100	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,3-Dichlorobenzene	2,400	49,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,4-Dichlorobenzene	1,800	13,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,2´-oxybis(1-chloropropane)	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4,5-Trichlorophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2,4,6-Trichlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dichlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dimethylphenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dinitrophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2,4-Dinitrotoluene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,6-Dinitrotoluene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Chloronaphthalene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Chlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Methylnaphthalene	---	---	190	J	390	U	390	U	390	U	380	U	400	U	390	J	10,000	D	360	U	380	U	110	J	400	U
2-Methylphenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2-Nitrophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
3,3´-Dichlorobenzidine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
3-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4,6-Dinitro-2-methylphenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4-Bromophenyl-phenylether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chloro-3-methylphenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chloroaniline	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chlorophenyl-phenylether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Methylphenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4-Nitrophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
Acenaphthene	20,000	100,000	75	J	390	U	390	U	390	U	380	U	400	U	170	J	200	J	360	U	380	U	230	J	400	U
Acenaphthylene	100,000	100,000	370	U	390	U	89	J	390	U	380	U	400	U	400	U	87	J	150	J	380	U	210	J	400	U
Anthracene	100,000	100,000	350	J	390	U	260	J	390	U	380	U	400	U	400	U	380	U	110	J	380	U	110	J	400	U
Benzo(a)anthracene	1,000	1,000	170	J	390	U	**1,600**		390	U	210	J	400	U	120	J	380	U	410		160	J	760		400	U
Benzo(a)pyrene	1,000	1,000	150	J	390	U	**2,100**		390	U	230	J	400	U	170	J	380	U	460		460		620		400	U
Benzo(b)fluoranthene	1,000	1,000	480		390	U	**3,600**		390	U	440		400	U	200	J	380	U	660		480		**1,700**		400	U
Benzo(g,h,i)perylene	100,000	100,000	370	U	390	U	650		390	U	120	J	400	U	400	U	380	U	180	J	300	J	370	J	400	U
Benzo(k)fluoranthene	800	3,900	120	J	390	U	**1,100**		390	U	120	J	400	U	90	J	380	U	290	J	210	J	500		400	U
Bis(2-chloroethoxy)methane	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Bis(2-chloroethyl)ether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Bis(2-ethylhexyl)phthalate	---	---	150	JZ	390	U	1,600	Z	390	U	470	Z	400	U	290	JZ	110	JZ	130	JZ	380	U	240	JZ	400	U
Butyl benzyl phthalate	---	---	370	U	390	U	990		390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Carbazole	---	---	370	U	390	U	86	J	390	U	380	U	400	U	400	U	380	U	360	U	88	J	190	J	400	U
Chrysene	1,000	3,900	310	J	390	U	**1,600**		390	U	270	J	400	U	140	J	380	U	430		260	J	970		400	U
Dibenzo(a,h)anthracene	330	330	370	U	390	U	220	J	390	U	380	U	400	U	400	U	380	U	360	U	95	J	98	J	400	U
Dibenzofuran	---	---	360	J	390	U	390	U	390	U	380	U	400	U	400	U	280	J	360	U	380	U	210	J	400	U
Diethylphthalate	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Dimethylphthalate	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Di-n-butyl phthalate	---	---	370	U	390	U	110	J	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Di-n-octyl phthalate	---	---	370	U	390	U	280	JZ	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Fluoranthene	100,000	100,000	800		390	U	2,000		390	U	290	J	400	U	140	J	130	J	550		260	J	1,300		400	U
Fluorene	30,000	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	240	J	360	U	380	U	110	J	400	U
Hexachlorobenzene	330	1,200	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachlorobutadiene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachlorocyclopentadiene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachloroethane	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Indeno(1,2,3-cd)pyrene	500	500	79	J	390	U	**710**		390	U	110	J	400	U	94	J	380	U	180	J	270	J	380		400	U
Isophorone	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Naphthalene	12,000	100,000	350	J	390	U	87	J	390	U	380	U	400	U	190	J	7,300	D	360	U	380	U	300	J	400	U
Nitrobenzene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
N-Nitroso-di-n-propylamine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
N-Nitrosodiphenylamine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Pentachlorophenol	800	6,700	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
Phenanthrene	100,000	100,000	950		390	U	550		390	U	150	J	400	U	160	J	400		300	J	280	J	770		400	U
Phenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Pyrene	100,000	100,000	690		390	U	3,600		390	U	560		400	U	330	J	120	J	1,200		220	J	2,300		400	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.
Z - Analyte had a %D greater than 20% in the daily CCV.

Table 5c. Soil Boring Sampling Results for PCBs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5' [2]		SB-7 5-5.5' [2]		SB-8 1-1.5'		SB-8 5-5.5'		SB-9 1.5-2'		SB-9 5-5.5'	
Sample Date:			6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015	
Client Sample ID:			BL1506125-02		BL1506125-03		BL1506125-04		BL1506125-05		BL1506125-06		BL1506125-07	
Lab Sample ID:			1506F54-002BDL		1506F54-003BDL		1506F54-004B		1506F54-005B		1506F54-006B		1506F54-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	37	UX	39	UX	40	U	39	U	39	UX	40	U
Aroclor 1221	100	1,000	75	UX	80	UX	80	U	79	U	78	U	80	U
Aroclor 1232	100	1,000	37	UX	39	UX	40	U	39	U	39	UX	40	U
Aroclor 1242	100	1,000	**14,000**	**D**	**7,200**	**D**	40	U	39	U	**79**	**P**	40	U
Aroclor 1248	100	1,000	37	UX	39	UX	40	U	39	U	39	U	40	U
Aroclor 1254	100	1,000	37	UX	39	UX	40	U	39	U	39	U	40	U
Aroclor 1260	100	1,000	37	UX	39	UX	**120**		39	U	**40**		40	U
Aroclor 1262	100	1,000	37	U	39	U	37	U	39	U	39	U	40	U
Aroclor 1268	100	1,000	37	U	39	U	37	U	39	U	39	U	40	U

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-10 2.5-3' [2]		SB-10 5-5.5'		SB-11 1-1.5'		SB-11 5-5.5'		SB-12 1.5-2'		SB-12 5-5.5'	
Sample Date:			6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015	
Client Sample ID:			BL1507033-03		BL1507033-04		BL1507033-05		BL1507033-06		BL1507033-07		BL1507033-08	
Lab Sample ID:			1506F70-002BDL		1506F70-003B		1506F70-004B		1506F70-005B		1506F70-006B		1506F70-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1221	100	1,000	82	UX	77	UX	74	U	78	U	76	U	82	U
Aroclor 1232	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1242	100	1,000	**11,000**	**D**	**23,000**	**D**	36	U	**37**	**PJ**	37	U	40	U
Aroclor 1248	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1254	100	1,000	40	UX	38	UX	**28**	**J**	38	U	**21**	**J**	40	U
Aroclor 1260	100	1,000	40	UX	38	UX	**63**		38	U	**53**	**P**	40	U
Aroclor 1262	100	1,000	40	U	38	U	36	U	38	U	37	U	40	U
Aroclor 1268	100	1,000	40	U	38	U	36	U	38	U	37	U	40	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Bolded values indicate detected PCB concentrations.

Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 6a. Groundwater Sampling Results for VOCs (June 2020)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW	MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	MW-8	MW-10		MW-11		MW-12	
Sample Date:		6/30/2020		--	6/30/2020		6/24/2020		6/25/2020		6/25/2020		6/30/2020		6/24/2020		6/30/2020		6/24/2020		--	--	6/30/2020		6/30/2020		6/25/2020	
Lab Sample ID:		2006148-005		--	2006148-004		2006126-001		2006126-005		2006126-006		2006148-006		2006126-002		2006148-003		2006126-003		--	--	2006148-002		2006148-001		2006126-004	
Units:	(µg/l)	(µg/l)		--	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		--	--	(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)																												
1,1,1,2-Tetrachloroethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	5	0.25	U	--	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	--	--	0.25	U	0.25	U	0.25	U
1,1,2,2-Tetrachloroethane	5	0.25	U	--	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	--	--	0.25	U	0.25	U	0.25	U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0.25	U	--	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	--	--	0.25	U	0.25	U	0.25	U
1,1,2-Trichloroethane	1	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	1	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2,4,5-Tetramethylbenzene	5	6.3		--	0.5	U	0.5	U	0.5	U	0.5	U	28		0.5	U	1.3	J	0.5	U	--	--	3.3		0.5	U	0.5	U
1,2,4-Trichlorobenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	5	1.9	J	--	0.6	J	0.5	U	0.5	U	0.5	U	250	D	0.5	U	13		0.5	U	--	--	4.2		0.5	U	0.5	U
1,2-Dibromo-3-chloropropane	0.04	1	U	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	--	1	U	1	U	1	U
1,2-Dibromoethane	0.0006	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	3	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.6	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	1	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	51		0.5	U	1.1	J	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	3	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,3-dichloropropane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	3	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
1,4-Dioxane	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
2-Butanone	50	1	U	--	1	U	9.8	B	1	U	1	U	1	U	12	B	1	U	12	B	--	--	1	U	1	U	9.3	B
2-Chloroethyl vinyl ether	--	10	U	--	10	U	10	U	10	U	10	U	10	U	10	U	13	J	10	U	--	--	10	U	10	U	10	U
2-Chlorotoluene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
2-Hexanone	50	1	U	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	--	1	U	1	U	1	U
2-Propanol	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
4-Chlorotoluene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
4-Isopropyltoluene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	7.4		0.5	U	0.89	J	0.5	U	--	--	0.5	U	0.5	U	0.5	U
4-Methyl-2-pentanone	--	1	U	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	--	1	U	1	U	1	U
Acetone	50	11		--	5	U	10		5	U	5	U	11		9.6	J	8.7	J	9.3	J	--	--	5	U	5	U	5.1	J
Acrolein	5	5	U	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	--	--	5	U	5	U	5	U
Acrylonitrile	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Benzene	1	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Bromobenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Bromochloromethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Bromodichloromethane	50	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Bromoform	50	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Bromomethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.1	BJ	0.5	U	1.1	BJ	--	--	0.5	U	0.5	U	1	BJ
Carbon disulfide	60	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Chlorodifluoromethane	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Chloroethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Chloroform	7	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.83	J	0.5	U
Chloromethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Cyclohexane	--	2.6		--	0.5	U	0.5	U	0.5	U	0.5	U	190		0.5	U	9.1		0.5	U	--	--	5.6		0.5	U	0.5	U
Dibromochloromethane	50	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Dibromomethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Diisopropyl ether	--	1	U	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	--	1	U	1	U	1	U
Ethanol	--	20	U	--	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U	--	--	20	U	20	U	20	U
Ethylbenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	12		0.5	U	0.97	J	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Freon-114	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Isopropylbenzene	5	2.4		--	0.5	U	0.5	U	0.5	U	0.5	U	32		0.5	U	1.5	J	0.5	U	--	--	3.8		0.5	U	0.5	U
m,p-Xylene	5	1	U	--	1	U	1	U	1	U	1	U	66		1	U	3.6	J	1	U	--	--	1.4	J	1	U	1	U
Methyl Acetate	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Methyl tert-butyl ether	10	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Methylcyclohexane	--	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	110		0.5	U	5		0.5	U	--	--	3.4		0.5	U	0.5	U
Methylene chloride	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Naphthalene	10	5.6		--	0.5	U	0.5	U	0.5	U	0.5	U	280	D	0.5	U	7.9		0.5	U	--	--	31		0.5	U	0.5	U
n-Butylbenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
n-Propylbenzene	5	1.7	J	--	0.5	U	0.5	U	0.5	U	0.5	U	39		0.5	U	1.5	J	0.5	U	--	--	1.6	J	0.5	U	0.5	U
o-Xylene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	15		0.5	U	1	J	0.5	U	--	--	0.5	U	0.5	U	0.5	U
p-Diethylbenzene	--	0.52	J	--	0.5	U	0.5	U	0.5	U	0.5	U	19		0.5	U	0.5	U	0.5	U	--	--	1.2	J	0.5	U	0.5	U
p-Ethyltoluene	--	0.54	J	--	0.5	U	0.5	U	0.5	U	0.5	U	33		0.5	U	2.6		0.5	U	--	--	0.8	J	0.5	U	0.5	U
sec-Butylbenzene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	7.8		0.5	U	0.5	U	0.5	U	--	--	2.3		0.5	U	0.5	U
Styrene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
t-Butyl alcohol	--	5	U	--	5	U	5	U	5	U	5	U	23		5	U	5	U	5	U	--	--	5	U	5	U	5	U
tert-Butylbenzene	5	1	J	--	0.5	U	1.2	J	0.5	U	0.5	U	5.7		0.5	J	0.5	U	0.5	U	--	--	2.4		0.5	U	0.5	U
Tetrachloroethene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Toluene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Trichloroethene	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Vinyl acetate	--	1	U	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	--	1	U	1	U	1	U
Vinyl chloride	2	0.5	U	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	--	--	0.5	U	0.5	U	0.5	U
Xylenes, Total	5	1.5	U	--	1.5	U	1.5	U	1.5	U	1.5	U	81		1.5	U	4.6	J	1.5	U	--	--	1.5	U	1.5	U	1.5	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.
MW-NW, MW-7 and MW-8 were not sampled due to inaccessibility or dry well.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.

Table 6b. Groundwater Sampling Results for SVOCs (June 2020)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE	MW-NW	MW-SE	MW-SW	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12
Sample Date:		6/30/2020	--	6/30/2020	6/24/2020	6/25/2020	6/25/2020	6/30/2020	6/24/2020	6/30/2020	6/24/2020	--	--	6/30/2020	6/30/2020	6/25/2020
Lab Sample ID:		2006148-005	--	2006148-004	2006126-001	2006126-005	2006126-006	2006148-006	2006126-002	2006148-003	2006126-003	--	--	2006148-002	2006148-001	2006126-004
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Semi-volatile Organic Compounds (SVOCs)																
1,2,4-Trichlorobenzene	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
1,2-Dichlorobenzene	3	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
1,3-Dichlorobenzene	3	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
1,4-Dichlorobenzene	3	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2,4,5-Trichlorophenol	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2,4,6-Trichlorophenol	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2,4-Dichlorophenol	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2,4-Dimethylphenol	50	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
2,4-Dinitrophenol	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
2,4-Dinitrotoluene	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2,6-Dinitrotoluene	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2-Chloronaphthalene	10	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2-Chlorophenol	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2-Methylnaphthalene	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	44	0.52 U	0.5 U	0.51 U	--	--	2.7 J	0.5 U	0.55 U
2-Methylphenol	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2-Nitroaniline	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
2-Nitrophenol	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
3,3'-Dichlorobenzidine	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
3+4-Methylphenol	1	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
3-Nitroaniline	5	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
4,6-Dinitro-2-methylphenol	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
4-Bromophenyl phenyl ether	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
4-Chloro-3-methylphenol	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
4-Chloroaniline	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
4-Chlorophenyl phenyl ether	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
4-Nitroaniline	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
4-Nitrophenol	'--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Acenaphthene	20	0.5 U	--	0.5 U	3 J	0.52 U	0.5 U	0.73 J	3 J	0.5 U	0.51 U	--	--	0.76 J	0.5 U	0.55 U
Acenaphthylene	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Acetophenone	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Aniline	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Anthracene	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Atrazine	7.5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Azobenzene	0.05	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzaldehyde	'--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Benzidine	'--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Benzo(a)anthracene	0.002	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzo(a)pyrene	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzo(b)fluoranthene	0.002	**0.81** J	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzo(g,h,i)perylene	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzo(k)fluoranthene	0.002	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Benzoic acid	'--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Benzyl alcohol	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Biphenyl	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.94 J	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Bis(2-chloroethoxy)methane	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Bis(2-chloroethyl)ether	1	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Bis(2-chloroisopropyl)ether	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Bis(2-ethylhexyl)phthalate	5	3.2 J	--	1 U	1 U	1.3 J	1.3 J	1.7 J	1 U	1 U	1.2 J	--	--	1 U	1 U	1.2 J
Butyl benzyl phthalate	50	1 U	--	1 U	1 U	1 U	3.1 J	1 U	1 U	1.1 J	1 U	--	--	1 J	1.2 J	1.1 U
Caprolactam	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Carbazole	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Chrysene	0.002	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Dibenzo(a,h)anthracene	'--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Dibenzofuran	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	1.3 J	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Diethyl phthalate	--	0.5 U	--	0.5 U	0.52 U	1.3 J	1.4 J	0.5 U	0.52 U	0.74 J	0.82 J	--	--	0.5 U	0.5 U	2.3 J
Dimethyl phthalate	--	0.5 U	--	0.59 BJ	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.6 BJ	0.51 U	--	--	0.69 BJ	0.91 BJ	0.55 U
Di-n-butyl phthalate	50	0.5 U	--	2.1 BJ	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.78 BJ	0.51 U	--	--	0.97 BJ	1.1 BJ	0.55 U
Di-n-octyl phthalate	50	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Fluoranthene	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Fluorene	50	0.5 U	--	0.5 U	0.9 J	0.52 U	0.5 U	1 J	0.52 U	0.5 U	0.51 U	--	--	0.54 J	0.5 U	0.55 U
Hexachlorobenzene	0.04	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Hexachlorobutadiene	0.5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Hexachlorocyclopentadiene	5	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Hexachloroethane	5	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Indeno(1,2,3-c,d)pyrene	0.002	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Isophorone	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Naphthalene	10	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	**160 D**	0.52 U	2.6 J	0.51 U	--	--	**15**	0.5 U	0.55 U
Nitrobenzene	0.4	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
N-Nitrosodimethylamine	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
N-Nitrosodi-n-propylamine	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
N-Nitrosodiphenylamine	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Parathion	1.5	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Pentachlorophenol	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1.1 U
Phenanthrene	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.83 J	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Phenol	--	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Pyrene	50	0.8 J	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U
Pyridine	50	0.5 U	--	0.5 U	0.52 U	0.52 U	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	--	--	0.5 U	0.5 U	0.55 U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.
MW-NW, MW-7 and MW-8 were not sampled due to inaccessibility or dry well.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.

Table 6c. Groundwater Sampling Results for PCBs (June 2020)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4	
Sample Date:		6/30/2020		--		6/30/2020		6/24/2020		6/25/2020		6/25/2020		6/30/2020		6/24/2020	
Lab Sample ID:		2006148-005		--		2006148-004		2006126-001		2006126-005		2006126-006		2006148-006		2006126-002	
Units:	(µg/l)	(µg/l)		--		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)																	
Aroclor 1016	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1221	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1232	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1242	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1248	0.09	**170**	**D**	--		**7.3**		0.052	U	0.052	U	0.05	U	**65**	**D**	0.052	U
Aroclor 1254	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1260	0.09	**6.9**		--		**0.43**		0.052	U	0.052	U	0.05	U	**2.9**		0.052	U
Aroclor 1262	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U
Aroclor 1268	0.09	0.05	U	--		0.05	U	0.052	U	0.052	U	0.05	U	0.05	U	0.052	U

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-5		MW-6		MW-7	MW-8	MW-10		MW-11		MW-12	
Sample Date:		6/30/2020		6/24/2020		--	--	6/30/2020		6/30/2020		6/25/2020	
Lab Sample ID:		2006148-003		2006126-003		--	--	2006148-002		2006148-001		2006126-004	
Units:	(µg/l)	(µg/l)		(µg/l)		--	--	(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)													
Aroclor 1016	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1221	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1232	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1242	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1248	0.09	**15**	**D**	0.051	U	--	--	**12**	**D**	**1**		0.055	U
Aroclor 1254	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1260	0.09	**0.81**		0.051	U	--	--	**0.72**		0.05	U	0.055	U
Aroclor 1262	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U
Aroclor 1268	0.09	0.05	U	0.051	U	--	--	0.05	U	0.05	U	0.055	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.

µg/l = microgram per liter

Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

MW-NW, MW-7 and MW-8 were not sampled due to inaccessibility or dry well.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 7. Part 375 Restricted-Residential Use Soil Cleanup Objectives

	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]
	(mg/kg)
Metals	
Arsenic	16
Barium	400
Beryllium	72
Cadmium	4.3
Chromium, hexavalent	110
Chromium, trivalent	180
Copper	270
Total Cyanide	27
Lead	400
Manganese	2,000
Total Mercury	0.81
Nickel	310
Selenium	180
Silver	180
Zinc	10,000

	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]
	(mg/kg)
PCBs/Pesticides	
2,4,5-TP Acid (Silvex)	100
4,4'-DDE	8.9
4,4'-DDT	7.9
4,4'-DDD	13
Aldrin	0.097
alpha-BHC	0.48
beta-BHC	0.36
Chlordane (alpha)	4.2
delta-BHC	100
Dibenzofuran	59
Dieldrin	0.2
Endosulfan I	24
Endosulfan II	24
Endosulfan sulfate	24
Endrin	11
Heptachlor	2.1
Lindane	1.3
Polychlorinated biphenyls	1

	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]
	(mg/kg)
Semi-Volatile Organic Compounds (SVOCs)	
Acenaphthene	100
Acenaphthylene	100
Anthracene	100
Benz(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	3.9
Chrysene	3.9
Dibenz(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	100
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol	100
Naphthalene	100
o-Cresol	100
p-Cresol	100
Pentachlorophenol	6.7
Phenanthrene	100
Phenol	100
Pyrene	100

	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]
	(mg/kg)
Volatile Organic Compounds (VOCs)	
1,1,1-Trichloroethane	100
1,1-Dichloroethane	26
1,1-Dichloroethene	100
1,2-Dichlorobenzene	100
1,2-Dichloroethane	3.1
cis-1,2-Dichloroethene	100
trans-1,2-Dichloroethene	100
1,3-Dichlorobenzene	49
1,4-Dichlorobenzene	13
1,4-Dioxane	13
Acetone	100
Benzene	4.8
Butylbenzene	100
Carbon tetrachloride	2.4
Chlorobenzene	100
Chloroform	49
Ethylbenzene	41
Hexachlorobenzene	1.2
Methyl ethyl ketone (2-Butanone)	100
Methyl tert-butyl ether	100
Methylene chloride	100
n-Propylbenzene	100
sec-Butylbenzene	100
tert-Butylbenzene	100
Tetrachloroethene	19
Toluene	100
Trichloroethene	21
1,2,4-Trimethylbenzene	52
1,3,5-Trimethylbenzene	52
Vinyl chloride	0.9
Xylene (mixed)	100

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Restricted-Residential Use Soil Cleanup Objectives (SCOs).

µg/kg = microgram per kilogram

APPENDIX A

NYSDEC SITE CHARACTERIZATION REPORT APPROVAL LETTER AND
SITE CHARACTERIZATION REPORT (TEXT, FIGURES AND TABLES ONLY)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

September 30, 2020

William J. Ryan
Manager - Downstate New York MGP Program
National Grid
175 E. Old Country Road
Hicksville, NY 11801

Re: Paerdegat Basin
NYSDEC Site No. 224167
Site Characterization Report – Operable Unit 2

Dear Mr. Ryan:

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health, has completed its review of the above referenced document dated June 26, 2020 which was prepared by H2M Architects + Engineers on behalf of National Grid (the Remedial Party). The latest submission of the document adequately addresses the comments provided by the Department. The document is now in compliance with the Site Characterization Work Plan, DER-10 and other related guidance, and is hereby approved.

The Department has determined that remedial actions are necessary to address contamination related to the Upland Soil and Gas Main (Operable Unit 2) of this site. A work plan to address the contaminants is required. In accordance with paragraph III.B.1(b) of the Order on Consent (Index no. R2-0811-13-08) please advise in writing within 30 days whether the Remedial Party will submit and implement a remedial action plan for the site. If there are any questions regarding this letter, please contact me at (718) 482-4096 or shaun.bollers@dec.ny.gov.

Sincerely,

Nicholas S. Bollers

Nicholas S. Bollers
Project Manager

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SITE CHARACTERIZATION REPORT

PAERDEGAT BASIN GAS CONDENSATE RELEASE
SEAVIEW AVE AND PAERDEGAT AVE N
BROOKLYN, NEW YORK 11236

NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

JUNE 26, 2020, REV 1

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SITE CHARACTERIZATION REPORT

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1.0 INTRODUCTION

On behalf of National Grid, H2M architects + engineers (H2M) has prepared this Site Characterization Report (SCR) to summarize the site investigation activities and findings associated with NYSDEC Spill No. 1206391. The spill consisted of a gas condensate release in the vicinity of a retired natural gas main standpipe near the intersection of Seaview Avenue and Paerdegat Avenue North in the Canarsie area of Brooklyn, New York. A site location map is provided as **Figure 1**. This SCR summarizes investigative activities performed at the site from May 2014 to November 2019, and has been prepared pursuant to the Order on Consent and Administrative Settlement, Index #R2-0811-13-08.

1.1 Site Description

The gas condensate release occurred in the asphalt-paved roadway along the southeast side of Seaview Avenue near the intersection of Seaview Avenue and Paerdegat Avenue North in the Canarsie area of Brooklyn, New York. The general vicinity of the project site is primarily comprised of residential, commercial and recreational properties. Residential properties are located across Seaview Avenue to the northwest of the project site. Paerdegat Athletic Club is located to the southwest. Canarsie Park is located to the east. Depth to groundwater at the site ranges from approximately 3.5 feet to 6 feet below grade surface (bgs). Groundwater at the site generally flows towards the south-southeast. A site plan is provided as **Figure 2**.

The project site is comprised of the subsurface soil and groundwater beneath the asphalt-roadway that was impacted by the gas condensate release. Underground utility equipment situated within the impacted area include a natural gas standpipe, a retired 30-inch natural gas main, an active 30-inch natural gas main, and a Con Edison-owned electric vault and its associated conduits. The standpipe was attached to the retired 30-inch natural gas transmission main located within a formerly excavated pit and was installed as part of a natural gas main abandonment project. The retired gas main runs beneath Paerdegat Basin towards the northeast along the southeast side of Seaview Avenue and terminates at the former standpipe pit. A new active gas main runs parallel on the northwest side of the retired gas main. At the termination point of the retired gas main (i.e., former standpipe pit location), the active gas

main transitions closer to the southeast side of Seaview Avenue in the route of the retired gas main. Underground electric vaults and conduits, owned and operated by Con Edison, also run parallel to the southeast of both the active and retired gas mains and northwest of the concrete curb line.

1.2 Site Background

During abandonment work of the retired gas main on September 27, 2012, cement grout was pumped by a National Grid contractor into the retired gas main from the south (opposite) side of Paerdegat Basin near the Hudson River Yacht Club. As a result of the grout pumping operation, residual gas condensate within the retired gas main was inadvertently forced out of the retired gas main at the former standpipe pit location on the north side of the Basin. The gas condensate impacted soils within the formerly excavated standpipe pit. A sample collected from the residual gas condensate detected polychlorinated biphenyls (PCBs), select volatile organic compounds (VOCs) and select semi-volatile organic compounds (SVOCs), as described in Section 3.1.

Gas condensate also impacted the roadway (i.e., Seaview Ave) and subsequently entered into a nearby stormwater catch basin when it was flushed with water from the street by the Fire Department of New York (FDNY). The catch basin ultimately directed the gas condensate to a stormwater outfall which discharges into the adjacent surface water body, Paerdegat Basin. Upon identification of the release, National Grid notified the National Response Center (NRC) and the New York State Department of Environmental Conservation (NYSDEC). Emergency response activities were conducted under the direct supervision of the United States Coast Guard (USCG), NYSDEC and New York City Department of Environmental Protection (NYCDEP).

2.0 SCOPE OF WORK

The objective of the site investigation scope of work was to identify release related impacts to soil and groundwater in the area of the former standpipe pit and to compare any release related impacts to applicable cleanup criteria. Site characterization activities were performed in accordance with a NYSDEC-approved Site Investigation and Pipe Abandonment Work Plan. The Work Plan, dated June 28, 2013, was approved by the NYSDEC on July 22, 2013. Supplemental to the Work Plan, an additional sampling plan was proposed in a Soil Boring Investigation and Groundwater Sampling (Nov-Dec 2014) summary letter report, dated March 13, 2015. This subsequent sampling plan was approved by the NYSDEC on April 27, 2015. Copies of the NYSDEC approval letters are provided as **Appendix A**.

Standards, Criteria and Guidance applicable to this site characterization included the following:

- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation

- NYSDEC CP-51: Soil Cleanup Guidance Policy
- NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
- 6 NYCRR Part 375 Environmental Remediation Programs
- National Contingency Plan
- 40 CFR 761.120-135 - PCB Spill Cleanup Policy
- 40 CFR 761.79(h) - Decontamination Standards and Procedures

Site characterization activities at the site included collecting surface soil samples, advancing soil borings, subsurface soil sampling, installing groundwater monitoring wells, and collecting groundwater samples. The activities took place on the following dates:

- May to June 2014 – Four (4) surface soil samples collected, four (4) soil borings advanced, and four (4) groundwater monitoring wells installed and sampled.
- November to December 2014 – Five (5) surface soil samples, six (6) soil borings advanced, and six (6) groundwater monitoring wells installed and sampled.
- June to July 2015 – Six (6) soil borings advanced, and five (5) groundwater monitoring wells installed and sampled.
- October 2017 – Fifteen (15) groundwater samples collected.
- March 2019 – Fifteen (15) groundwater samples collected.

In addition, camera inspections were performed within the retired gas main in order to determine the extent of grouting. The camera inspections took place on the following dates:

- December 2016 – utilizing a snake camera.
- January 2017 – utilizing a robotic camera.
- April 2017 – utilizing a snake camera.
- October 2017 – utilizing a snake camera.
- January 2018 – utilizing a camera attached to a steel snake.
- June 2019 – utilizing a robotic camera.
- November 2019 – utilizing a robotic camera.

All soil and groundwater samples collected as part of this site investigation were submitted to National Grid contract laboratories that are accredited by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program. The laboratories include Pace Analytical Services, Inc. of Melville, New York (ELAP#11478), American Analytical Laboratories, LLC of Farmingdale, New York (ELAP#11418) and Long Island Analytical Laboratories Inc. of Holbrook, New York (ELAP#11693).

3.0 SITE CHARACTERIZATION ACTIVITIES

3.1 Contaminants of Concern (COCs)

Based upon analytical results of the gas condensate liquid collected by H2M from the standpipe on October 1, 2012, the gas condensate included elevated concentrations of PCBs, select volatile organic compounds (VOCs) and select semi-volatile organic compounds (SVOCs). The contaminant detected at the highest concentration was the PCB Aroclor 1242 at 10,000 mg/kg. The condensate analytical results also indicated that benzene, toluene, ethylbenzene, xylene (BTEX), naphthalene and 2-methylnaphthalene were also detected at elevated concentrations. A summary of the standpipe gas condensate sampling results is provided in **Table 3.1** below.

Table 3.1. Summary of Gas Condensate Characterization Results

Parameter	Standpipe Oil (mg/kg)
PCBs	
Aroclor 1242	10,000
Volatile Organic Compounds (VOCs)	
Benzene	1,700
Ethylbenzene	770
Toluene	4,100
Xylene (total)	6,900
Semi-Volatile Organic Compounds (SVOCs)	
2-methylnaphthalene	3,900
Naphthalene	3,800

***Sample collected on October 1, 2012.**

Subsequent to the gas condensate release, sampling by Con Edison of liquid observed within four electric vaults along Seaview Avenue reportedly detected PCBs including Aroclors 1242, 1254 and 1260. Aroclors 1254 and 1260 are commonly associated with electric operations. The four vaults, identified as M-63303, M-63607, M-63304 and M-66541, are situated on Seaview Avenue between Paerdegat Avenue North and East 85th Street. The locations of the vaults are depicted on **Figure 3**. The sampling data, provided by Con Edison in a January 10, 2013 email correspondence to National Grid, is summarized in **Table 3.2** below. The NYSDEC transferred three existing spill numbers associated with the Con Edison electric vaults to National Grid. The three spill numbers include 1209094, 1214155 and 1214171.

Table 3.2. Con Edison Electric Vault PCB Sampling Data

Manhole #	Incident Date	PCB Concentrations
M-63303	September 28, 2012	Total – 20,046 ppm Aroclor 1242 – 18,125 ppm Aroclor 1254 – 1,520 ppm Aroclor 1260 – 401 ppm
M-63607	November 4, 2012	Total – 11,120 ppm Aroclor 1242 – 9,716 ppm Aroclor 1254 – 1,083 ppm Aroclor 1260 – 321 ppm
M-63304	December 28, 2012	Total – 23,677 ppm Aroclor 1242 – 20,512 ppm Aroclor 1254 – 2,304 ppm Aroclor 1260 – 862 ppm
M-63541	December 28, 2012	Total – 826 ppm Aroclor 1242 – 603 ppm Aroclor 1254 – 144 ppm Aroclor 1260 – 79 ppm

3.2 Utility Markout

Prior to performing any ground intrusive work at the site, New York 811 was contacted in accordance with New York Code Rule 753. Utilities, including natural gas, electric, telephone, and cable television, were located and/or marked out in the proposed work area. In addition to contacting New York 811, National Grid Gas Operations personnel also performed clearance markouts for the proposed investigation locations. Notifications were also made to local authorities and regulatory agencies prior to each field work event.

3.3 Surface Soil Sampling

In order to determine if there was an exposure pathway created between surface soils impacted by the gas condensate release and the public, surface soil samples were collected in the grass areas along the east and west sides of Seaview Avenue. On May 28, 2014, H2M collected one (1) delineation surface soil sample, identified as SS-1, and three (3) background surface soil samples, identified as BS-1, BS-2 and BS-4. The delineation sample SS-1 was collected on the east side of Seaview Avenue adjacent to the former standpipe pit. The background surface soil samples were collected for general characterization and comparison purposes. The approximate locations of the surface soil samples are shown on **Figure 4**. The samples were collected utilizing a shovel from approximately 0-2 inches below the grass cover. The shovel was decontaminated prior to and in between sample collection with Alconox

and deionized water. As discussed in Section 3.6, throughout all investigative phases, all investigative derived wastes (IDW) were properly containerized, characterized and disposed of.

The 2013 Site Investigation and Pipe Abandonment Work Plan proposed that a background sample be collected within Canarsie Park. This sample, identified as BS-3, was not collected since a New York City Parks Construction Permit was not obtained to perform work on the Parks property prior to the scheduled site work. However, based on the sampling results of all the surface soil samples collected, it is not likely that a surface soil sample collected within Canarsie Park would exhibit a PCB concentration above the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objective of 100 micrograms per kilograms (µg/kg).

Based on the May 2014 sampling results and NYSDEC directive, additional surface soil samples were collected on November 21 and 24, 2014. Five (5) surface soil samples, identified as SS-2 through SS-6, were collected in the grass areas along the east and west sides of Seaview Avenue. The sampling locations are also shown on **Figure 4**. These samples were collected in the same manner as the previous surface soil samples utilizing a decontaminated shovel from approximately the top 0-2 inches below the grass cover.

All surface soil samples, including QA/QC samples, were containerized in new laboratory-supplied sampling jars and submitted to Pace Analytical Services, Inc. The samples were analyzed for polychlorinated biphenyls (PCBs), Target Compound List (TCL) volatile organic compounds (VOCs) and TCL semi-volatile organic compounds (SVOCs). All samples were submitted for analysis in accordance with NYSDEC ASP Category B protocols.

3.4 Subsurface Soil Sampling

Subsurface soil borings were advanced during multiple field investigations to delineate subsurface soil impacts in and around the former standpipe pit. Approximate soil boring locations are shown on **Figures 5 through 9**.

All soil boring samples, including QA/QC samples, were containerized in new laboratory-supplied sampling jars and submitted to Pace Analytical Services, Inc. The samples were analyzed for PCBs, TCL VOCs and TCL SVOCs. All samples were submitted for analysis in accordance with NYSDEC ASP Category B protocols.

3.4.1 Subsurface Soil Borings – May 2014

On May 28, 2014, in accordance with the 2013 Site Investigation and Pipe Abandonment Work Plan, four (4) soil borings were advanced around the former standpipe pit. The four soil borings, identified as SB-NE, SB-NW, SB-SE and SB-SW, were advanced at distances of approximately 5 feet away in each direction from the boundary/sidewall of the proposed excavation pit. **Figure 5** illustrates the approximate boring locations.

National Grid core-drilled an 18-inch diameter opening through the asphalt surface of the street at each of the four boring locations. Due to the proximity of the active gas main, the soil borings were advanced through vacuum excavation utilizing a guzzler truck. Miller Environmental Group Inc. (MEG), a National Grid environmental contractor, advanced the soil borings to the groundwater interface. H2M, using a decontaminated hand auger, collected and screened the soils with a photoionization detector (PID) initiating from beneath the asphalt roadbed. Starting with the 1 foot or 1.5 feet below grade surface (bgs) sample, the soils were collected in sealed plastic bags and screened every 2 feet to the groundwater interface. Groundwater was encountered at approximately 4.5 to 5 feet bgs. The soils were observed to be gray to light brown, medium to coarse-grain sand with some gravel. PID readings for the soils ranged from 0.0 to 474.6 parts per million (ppm). Soil boring logs are provided as **Appendix B**.

Two (2) soil samples were collected into laboratory-supplied glassware for laboratory analysis from each boring: one just below the asphalt layer at 1 to 1.5 feet and one from either the interval with the highest PID reading or from above the groundwater interface.

3.4.2 Subsurface Soil Borings – November 2014

Based on the soil boring results from the May 2014 sampling event, additional borings were subsequently conducted to further delineate the extent of contamination. On November 20, 21 and 24, 2014, H2M and MEG mobilized to the site to perform a total of six (6) soil borings, identified as SB-1 through SB-6. **Figure 6** illustrates the approximate boring locations. These borings were performed as step-outs, and were installed approximately 10 to 15 feet to the north and east of the original boring locations. The proposed boring locations were cleared and/or adjusted by National Grid Gas Operations personnel based on proximity and clearance from the active gas main.

The soil borings were advanced in a manner similar to the May 2014 sampling event. MEG utilized a jackhammer to break through the asphalt surface. The borings were then vacuum excavated utilizing a guzzler truck. H2M, using a decontaminated hand auger, collected and screened the soils with a PID initiating from beneath the asphalt roadbed. Starting with the 1 foot or 1.5 feet bgs sample, the soils were

collected in sealed plastic bags and screened every 2 feet to the groundwater interface. Groundwater was encountered at approximately 4 to 6 feet bgs. The soils were observed to be light brown to brown, fine to medium-grain sand with some gravel. PID readings for the soils ranged from 0.0 to 962 ppm. Soil boring logs are provided as **Appendix B**.

Two (2) soil samples were collected into laboratory-supplied glassware for laboratory analysis from each boring: one just below the asphalt layer at 1 to 1.5 feet and one from either the interval with the highest PID reading or from above the groundwater interface.

3.4.3 Subsurface Soil Borings – June 2015

Additional sampling was subsequently proposed and performed to further delineate the extent of contamination based on the soil boring results from the May and November 2014 sampling events. An additional six (6) soil borings were subsequently conducted on June 17 and 18, 2015. The borings were identified as SB-7 through SB-12. The approximate boring locations are shown on **Figure 7**. The soil borings were originally proposed to be advanced further towards the northeast and southwest in the area between National Grid's 30-inch active gas main and Con Edison's electrical conduit. However, due to the narrow spacing between the two utility lines and safety concerns associated with working adjacent to the high-pressure gas main, two of the borings to the northeast could not be installed in the original proposed locations. One soil boring (SB-8) was subsequently placed in close proximity to the southeast of Con Ed's electrical conduit. Field screening at soil boring location SB-8 did not identify any significant contamination, so no additional borings to the northeast were conducted. Soil boring SB-9 was advanced to delineate the downgradient extent southeast from SB-5. SB-11 and SB-12 were advanced to delineate the downgradient extent south from SB-10, which was observed to be contaminated during field screening.

Similar to the May and November 2014 sampling events, MEG utilized a concrete saw and jackhammer to break through the asphalt road surface. The borings were then vacuum excavated utilizing a guzzler truck. H2M, using a decontaminated hand auger, collected and screened the soils with a PID initiating from beneath the asphalt roadbed. Starting with the 1 foot or 1.5 feet below grade surface (bgs) sample, the soils were collected in sealed plastic bags and screened every 2 feet to the groundwater interface. Groundwater was encountered at approximately 5.5 feet bgs. The soils were observed to generally be brown, fine to coarse-grain sand with some gravel. PID readings for the soils ranged from 0.0 to 1,193 ppm. Soil borings logs are provided as **Appendix B**.

Two (2) soil samples were collected into laboratory-supplied glassware for laboratory analysis from each boring: one just below the asphalt layer at 1 to 1.5 feet and one from either the interval with the highest PID reading or from above the groundwater interface.

3.5 Groundwater Monitoring Well Installation and Sampling

Groundwater monitoring wells were installed and sampled in order to determine if there were impacts to groundwater at the release site. Following the screening of the soils at each soil boring location during the three field investigation events, groundwater monitoring wells were installed in the same boreholes. Groundwater monitoring well locations are shown on **Figures 10 through 14**.

All groundwater samples collected as part of the site characterization were containerized in new laboratory-supplied sampling jars and submitted to Pace Analytical Services, Inc. Samples collected during subsequent groundwater sampling events were submitted to American Analytical Laboratories, LLC. Unless otherwise stated, the groundwater samples were analyzed for PCBs, TCL VOCs and TCL SVOCs.

3.5.1 Well Installation and Groundwater Sampling – May to June 2014

On May 28, 2014, four (4) groundwater monitoring wells, identified as MW-NE, MW-NW, MW-SE and MW-SW, were installed to approximately 7 feet bgs utilizing 2-inch Schedule 40 PVC piping, with 5 feet of 0.020" slotted screen and 2 feet of solid riser. The annular space around the piping was filled with FilPro® #2 filtration sand and a bentonite seal. Monitoring well manhole covers were set in concrete, flush with the asphalt surface. The locations of the monitoring wells are shown on **Figure 10**.

The monitoring wells were developed until visually clear on May 29, 2014 utilizing a whale pump. Approximately 5 to 10 gallons of groundwater were purged from each well and containerized in a 55-gallon drum. No sheen was observed in the purged groundwater. The wells were then allowed to recharge and stabilize for seven days prior to sampling.

On June 5, 2014, H2M conducted groundwater sampling in accordance with the USEPA Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells Standard Operating Procedure (SOP) (EQASOP-GW4) utilizing a bladder pump. The bladder pump was properly decontaminated, prior to use and in between monitoring wells, with Alconox and deionized water. Dedicated tubing and bladders were utilized for each well. While purging, the groundwater was monitored for indicator field parameters, including pH, oxidation/reduction potential (ORP), dissolved

oxygen (DO), specific conductance, temperature and turbidity. Following stabilization of these parameters, groundwater samples were subsequently collected directly from the bladder pump tubing.

3.5.2 Well Installation and Groundwater Sampling – November to December 2014

On November 20, 21 and 24, 2014, six (6) groundwater monitoring wells, identified as MW-1 through MW 6, were installed to approximately 10 feet bgs utilizing 2-inch Schedule 40, 0.020" slotted PVC piping. The annular space around the piping was filled with FilPro® #2 filtration sand and a bentonite seal. Monitoring well manhole covers were set in concrete, flush with the asphalt road surface. The locations of the monitoring wells are shown on **Figure 11**.

Based on initial soil field screening results, groundwater samples were collected from MW-1, MW-2, MW-4 and MW-6 with dedicated polyethylene bailers since these wells were not suspected to be contaminated. These wells were purged utilizing a decontaminated whale pump and/or bailers prior to sample collection. The remaining monitoring wells MW-3 and MW-5, which exhibited signs of potential contamination, were developed with a whale pump on November 25, 2014 and were sampled the following week.

On December 3, 2014, groundwater samples were collected from MW-3, MW-5 and the four previously installed monitoring wells MW-NE, MW-NW, MW-SE and MW-SW. Similar to the June 2014 sampling event, the wells were sampled in accordance with the USEPA Low Flow SOP utilizing a bladder pump. The bladder pump was properly decontaminated, prior to use and in between monitoring wells, with Alconox and deionized water. Dedicated polyethylene bladders and tubing were utilized for each well. While purging, the groundwater was monitored for indicator field parameters, including pH, ORP, DO, specific conductance, temperature and turbidity. Following stabilization of these parameters, groundwater samples were subsequently collected directly from the bladder pump tubing.

3.5.3 Well Installation and Groundwater Sampling – June to July 2015

On June 17 and 18, 2015, five (5) groundwater monitoring wells, identified as MW-7, MW-8, MW-10, MW-11 and MW-12, were installed. The locations of the monitoring wells are shown on **Figure 12**. Wells were installed in soil boring locations advanced during the June 2015 sampling event except for SB-9. Based on PID readings and visual observations of the soil, a monitoring well was not deemed necessary at SB-9. The wells were installed to approximately 10 feet bgs utilizing 2-inch PVC piping. The wells were constructed with 8 feet of Schedule 40 0.020" slotted screen and 2 feet of solid riser. The annular space around the PVC piping was filled with FilPro® #2 filtration sand and a bentonite seal. Monitoring well manhole covers were set in concrete, flush with the asphalt road surface or grass surface. On June

22, 2015, the monitoring wells were developed until the water cleared utilizing a decontaminated whale pump.

From June 30 to July 2, 2015, groundwater samples were collected from all newly and previously installed monitoring wells (i.e., MW-NE, MW-NW, MW-SE, MW-SW, MW-1 through MW-8, and MW-10 through MW-12). The wells were purged and sampled in accordance with the USEPA Low Flow SOP utilizing a bladder pump. The bladder pump was properly decontaminated, prior to use and in between monitoring wells, with Alconox and deionized water. Dedicated polyethylene bladders and tubing were utilized for each well. While purging, the groundwater was monitored for indicator field parameters, including pH, ORP, DO, specific conductance, temperature and turbidity. Following stabilization of these parameters, groundwater samples were subsequently collected directly from the bladder pump tubing.

3.5.4 Groundwater Sampling – October 2017

On October 12 and 13, 2017, all groundwater monitoring wells at the site were sampled, including MW-NE, MW-NW, MW-SE, MW-SW, MW-1 through MW-8 and MW-10 through MW-12. The locations of the monitoring wells are shown on **Figure 13**. The wells were purged and sampled in accordance with the USEPA Low Flow SOP utilizing a bladder pump. The bladder pump was properly decontaminated, prior to use and in between monitoring wells, with Alconox and deionized water. Dedicated polyethylene bladders and tubing were utilized for each well. While purging, the groundwater was monitored for indicator field parameters, including pH, ORP, DO, specific conductance, temperature and turbidity. Following stabilization of these parameters, groundwater samples were subsequently collected directly from the bladder pump tubing.

For this sampling event, all groundwater samples were containerized in new laboratory-supplied sampling jars and submitted to American Analytical Laboratories, LLC. The samples were analyzed for PCBs, TCL VOCs and TCL SVOCs. All samples were submitted for report only deliverables.

3.5.5 Groundwater Sampling – March 2019

On March 20, 22 and 25, 2019, all groundwater monitoring wells at the site were sampled, including MW-NE, MW-NW, MW-SE, MW-SW, MW-1 through MW-8 and MW-10 through MW-12. The locations of the monitoring wells are shown on **Figure 14**. All wells, except for MW-NW, were purged and sampled in accordance with the USEPA Low Flow SOP utilizing a bladder pump. The bladder pump was properly decontaminated in between uses with Alconox and deionized water. Dedicated polyethylene bladders and tubing were utilized for each well. While purging, the groundwater was monitored for indicator field parameters, including pH, ORP, DO, specific conductance, temperature and turbidity. Following

stabilization of these parameters, groundwater samples were subsequently collected directly from the bladder pump tubing. Due to the silty nature of the groundwater within MW-NW and after multiple attempts to purge the well with the bladder pump, MW-NW was sampled utilizing a dedicated polyethylene bailer.

For this sampling event, all groundwater samples were containerized in new laboratory-supplied sampling jars and submitted to American Analytical Laboratories, LLC. The samples were analyzed for PCBs and TCL VOCs. Salinity and chloride were included in the analysis on select groundwater samples (i.e., NW-NE, MW-NW, MW-2 and MW-8) for comparison with the liquid within the retired gas main. This comparison is further described in Section 3.7. All samples were submitted for report only deliverables.

3.6 Investigative Derived Wastes

Investigative derived wastes that were generated during the soil boring and groundwater sampling activities included soil that was vacuum excavated into a guzzler truck, decontamination wash water, well development water, groundwater sampling purge water, and miscellaneous debris (i.e., personal protective equipment, hose, tubing, gloves and plastic sheeting). All wastes were containerized into 55-gallon drums, sampled for waste characterization, properly labeled and transported off-site to a permitted disposal facility.

Following the completion of the soil borings and monitoring well installation during each sampling event, MEG decontaminated their guzzler truck. Polyethylene sheeting was laid out underneath the guzzler truck prior to the start of the decontamination process. All vacuumed soils were manually shoveled and containerized into 55-gallon drums. MEG then power washed the inside of the guzzler truck using Citra Clean, a non-solvent-based cleaning agent. Confirmatory liquid rinsate samples were collected from the guzzler truck following the cleaning process.

Copies of disposal manifests for wastes generated from all soil boring and groundwater sampling events are provided as **Appendix R**.

3.7 Retired Gas Main Investigation

As previously stated, cement grouting activities were performed on the retired gas main as required by the New York City Department of Transportation (NYCDOT) for the portion of the retired gas main that crossed under the Paerdegat Bain waterway. Cement grout was pumped by a National Grid contractor, Hallen Construction, into the retired gas main from the opposite (south) side of Paerdegat Basin near the

Hudson River Yacht Club. Due to the gas condensate release, cement grouting operations ceased and efforts to address the release began.

Following the completion of the contamination delineation sampling, efforts were made to determine the disposition and location of the cement grout plug (i.e., extent of grouting that was completed prior to the release) so that abandonment of the retired gas main could be completed. The following is a timeline summary of the investigative activities conducted to locate the concrete plug or at least the end point to which cement grout penetrated the retired gas main. A progress map of the retired gas main investigation is shown on **Figure 15**.

- **November to December 2016**

  Between November 16 and December 7, 2016, National Grid excavated an inspection pit located on the southwest side of the former standpipe pit in order to access the retired gas main. The inspection pit was excavated utilizing a backhoe to a depth of approximately five (5) feet below grade surface (bgs), exposing the top of the retired main. Timber shoring was installed to allow workers to enter the inspection pit. A 6-inch Shortstopp® fitting was subsequently welded onto the top of the retired gas main and the main was tapped. A small indeterminate amount of stagnant liquid was observed inside the bottom of the main at this location and was removed by a skid-mounted vacuum unit.

  On December 7, 2016, a snake camera was inserted by National Grid into the retired gas main and directed towards the southwest approximately 56 feet until the camera line fouled and could not be advanced any further.

  A Community Air Monitoring Plan (CAMP) was implemented during ground intrusion and soil disturbance activities to monitor particulate levels and total organic vapors. The CAMP included one (1) downwind and one (1) upwind monitoring station, each with a particulate monitor and a PID. No particulate or VOC concentrations were observed to exceed the NYSDOH Generic CAMP action criteria.

  Due to the nature of the soil characterization results, the excavated asphalt and soils were placed into polyethylene-lined roll-off containers for off-site disposal. Groundwater that infiltrated the excavation was recovered into a vacuum truck. All liquids, including the groundwater, liquid within the retired gas main and liquid generated from decontamination, were containerized into 55-gallon drums. Waste characterization samples of the asphalt, soil and liquid were collected for

disposal purposes. The wastes were subsequently transported off-site to a permitted disposal facility.

- **January 2017**

  On January 20, 2017, a second camera inspection was performed by ULC Robotics. A robotic camera was inserted into the retired gas main from the same access port as the December 7, 2016 inspection. At approximately 71 feet towards the southwest, a rectangular opening was observed within the pipe. This opening was believed to be a valve, as evident through a manhole cover at road surface. At approximately 130 to 131 feet, the robotic camera encountered liquid and was unable to continue further since it was not submersible.

  Particulate monitors were not utilized as no soil disturbance activities were performed. A PID was utilized to monitor total organic vapors in the work zone. No VOC concentrations were detected above the NYSDOH CAMP action criteria.

- **April 2017**

  On April 24 and 25, 2017, a second inspection pit was excavated approximately 125 to 130 feet southwest of the first inspection pit. Similar to the first pit, this second inspection pit was excavated to approximately 4.5 feet bgs to expose the top of the retired gas main, and timber shoring was installed. Groundwater was observed in the excavation at approximately 4 feet bgs, 6 inches above the top of the retired main. Since the location of the pit was outside the limits of the previously characterized site extent of contamination and no petroleum-like sheen or odor was observed, the groundwater in the pit was pumped into the nearest storm drain. A new 6-inch Shortstopp® fitting was then welded onto the retired gas main and the main was tapped. A snake camera was inserted by National Grid at this new fitting and extended towards the southwest approximately 34 feet until the cable coiled and could not be inserted any further. As was observed during the January 2017 camera inspection, liquid was encountered within the retired main.

  On April 26, 2017, National Grid attempted to excavate a third inspection pit approximately 25 feet southwest of the second inspection pit. At this location, groundwater was encountered at approximately 3.5 to 4 feet bgs. Due to an offset in the retired gas main, the top of the pipe was encountered at a deeper depth; approximately 10 feet bgs. This inspection pit was subsequently abandoned and backfilled due to the depth of the gas main relative to the depth of groundwater at this location.

During soil disturbance activities on April 24th, CAMP monitoring stations were set up upwind and downwind of the work zone. No particulate or VOC concentrations were observed to exceed the NYSDOH Generic CAMP action levels. CAMP was not implemented on April 25th or 26th due to rain.

Since the locations of the excavations performed in April 2017 were outside the limits of the contaminated zone as determined by the site characterization sampling, the excavated soils were managed by National Grid as typical urban spoils.

- **October 2017**

  On October 10 and 11, 2017, a fourth inspection pit was excavated on the southwest side of the second inspection pit. Timber shoring was installed to allow workers to enter the pit. A new 6-inch Shortstopp® fitting was welded onto the retired gas main near the southwest end of the inspection pit. This new fitting is located approximately 140 feet southwest from the former standpipe pit. After the retired main was tapped, liquid was observed inside the main at the location of the new access port.

  On October 12, 2017, National Grid inserted a snake camera at the new access port approximately 50 to 75 feet towards the southwest. The camera cable again coiled, thus preventing further advancement. Concurrently, the liquid inside the retired gas main was pumped out utilizing a skid-mounted vacuum unit into 55-gallon drums. A total of 44 drums were filled and composite sampled for waste characterization. The drums were transported off-site to a permitted disposal facility. Despite the pump out efforts, the liquid level observed inside the retired main did not appear to significantly decrease.

- **January 2018**

  On January 31, 2018, a camera inspection was performed by X-Ray Locating Service, Inc utilizing a camera with its cable attached to a steel snake. The camera was inserted from the access port installed in October 2017 and extended an estimated 165 feet southwest from the edge of the inspection pit. Although the camera feed was not clear, no obstacles believed to be consistent with the concrete plug were encountered along the 165-foot distance. Due to the nature of a snake camera, the camera line may have coiled. Therefore, the inspected distance is estimated. No other details about the pipe interior could be discerned due to the murky/silty water inside the pipe.

- **December 2018**

  Between January and December 2018, National Grid requested bids from its approved environmental waste management contractors to develop an effective action plan to pump out the liquid inside the retired gas main. Based on the truckloads of cement grout that had reportedly been pumped into the retired main, it was determined that, at maximum capacity, approximately 12,000 gallons of liquid could remain inside the pipe. The selected action plan required a larger access port on the retired main in order to facilitate the insertion of piping for the pump out. On December 5, 2018, National Grid mobilized to the site to weld on a new larger fitting. However, upon opening the Shortstopp® installed in October 2017, the liquid level inside the retired main was observed to be higher than expected, which in addition to odor off-gassing, precluded welding the new fitting in the fourth inspection pit.

  On December 12, 2018, National Grid and H2M returned to the site to collect a sample of the liquid inside the retired main for waste profiling purposes. However, approximately 18 inches of groundwater was observed in the fourth inspection pit, covering the top of the retired main. Due to the observed groundwater and in order to determine the appropriate method to dewater the inspection pit, a sample was collected of the groundwater in the inspection pit instead of the liquid inside the main. An additional groundwater sample was collected from monitoring well MW-11 located closest to the northeast of the inspection pit for comparison purposes. The two samples were submitted to American Analytical Laboratories, LLC, and analyzed for PCBs and BTEX. The inspection pit groundwater sample was non-detect for PCBs and BTEX. The groundwater collected from MW-11 detected PCB Aroclor 1248 at a concentration of 0.23 µg/l; all other analyzed parameters were non-detect. A copy of the analytical laboratory report for the "Pit" and "MW-11" groundwater samples is provided as **Appendix N**.

- **February to March 2019**

  On February 19, 2019, upon arrival, the groundwater in the fourth inspection pit was observed to be approximately 4 inches above the Shortstopp® fitting. Based on the December 2018 sampling results, the groundwater in the inspection pit was dewatered into a nearby storm drain on Seaview Avenue. After dewatering, soil was observed to be entering the pit through the timber shoring. Due to concerns from National Grid, a soil sample was collected for PCB and BTEX analysis. The Shortstopp® access port was then opened and a sample was collected from the liquid inside the retired gas main. To evaluate whether saltwater from Paerdegat Basin infiltrated the retired main, the liquid sample was analyzed for alkalinity, chloride, salinity, flashpoint, PCBs, VOCs, and total suspended solids. Salinity and chloride were detected at concentrations of 830 mg/l and 460 mg/l, respectively, indicating that saltwater influence was not

likely. A copy of the analytical laboratory reports for the "Pit Soil Composite" and "Pipe Liquid" samples is provided as **Appendix O**.

Following the February 2019 site visit, National Grid discovered that the timber shoring had collapsed into the fourth inspection pit. Therefore, on March 11, 2019, National Grid mobilized to rebuild the shoring pit. Due to the soil disturbance activities, one downwind CAMP monitoring station was set up to monitor particulate and total organic vapor levels. No particulate or VOC concentrations were observed to exceed the NYSDOH Generic CAMP action criteria.

As described in Section 3.5.5, a groundwater monitoring well sampling event was conducted on March 20, 22 and 25, 2019. A copy of the analytical laboratory reports for the March 2019 groundwater samples is provided as **Appendix P**. Select groundwater samples (i.e., NW-NE, MW-NW, MW-2 and MW-8) were also analyzed for salinity and chloride. Salinity concentrations ranged from 160 mg/l in MW-2 to 450 mg/l in MW-NW. Chloride concentrations ranged from 88 mg/l in MW-2 to 250 mg/l in MW-NW. Similar to the liquid within the retired gas main, these salinity and chloride concentrations do not strongly indicate salt water intrusion.

- **May to June 2019**

  On May 20 and 21, 2019, National Grid welded a larger 16-inch fitting onto the retired gas main. The new fitting is situated approximately 2 feet northeast from the Shortstopp® installed in October 2017 in the fourth inspection pit. After the retired main was tapped, the effective diameter of the opening was 13 to 13.5 inches.

  On June 6, 2019, a camera inspection was performed by Hydromax USA utilizing a robotic camera via the new 16-inch fitting. At the point of camera entry, the retired main was measured to have approximately 15 inches of standing liquid inside the pipe. The camera inspection showed that a probable residual concrete slurry was observed along the bottom (invert) of the pipe, beginning at approximately 60 feet southwest of the camera entrance point. Advancement of the camera was stopped at approximately 126 feet to the southwest due to a blockage in the pipe which was believed to be a small singular mass of hardened concrete slurry. From the camera entrance point, the camera was also directed to the northeast towards the eastern welded end cap of the retired main. The camera was stopped at approximately 45 feet northeast from the entrance point due to an obstacle or a gas line appurtenance.

  H2M also collected and compared measurements of groundwater elevations from nearby monitoring wells, the groundwater elevation in the excavated inspection pit, and the liquid

elevation inside the retired gas main. The groundwater elevations from the monitoring wells were approximately equal to the groundwater elevation in the excavated inspection pit. The elevation of the liquid inside the retired gas main was notably lower than the groundwater elevations in both the monitoring wells and the excavated inspection pit.

- **November 2019**

  On November 4 and 5, 2019, an additional camera investigation was conducted under dry conditions to better confirm grout extent and retired gas main status. In coordination with National Grid, Clean Harbors and Hydromax USA, efforts were designed to vacuum out all liquids from the retired gas main and re-survey with a robotic camera. In anticipation of dewatering the inspection pit, H2M mobilized to collect a groundwater sample from the pit on October 30, 2019 for PCB analysis. The sample was submitted to Long Island Analytical Laboratories Inc. The sampling results exhibited a detection of PCB Aroclor 1016 at a concentration of 1.17 µg/l. A copy of the analytical laboratory report for the "Access Pit" sample is provided as **Appendix Q**.

  On November 4, 2019, the groundwater within the inspection pit was first dewatered utilizing a vacuum truck by Clean Harbors. The level of liquid inside the retired gas main at the 16-inch fitting was measured to be approximately 15 inches. The liquid was vacuumed directly into a dedicated 5,500-gallon tanker truck to minimize the potential for accidental discharge. Approximately 4,600 gallons were removed from the retired gas main. At the end of the liquid removal operations, only minimal liquid remained in the retired main.

  On November 5, 2019, the level of the liquid in the retired main remained negligible at approximately 0.5 inches. Clean Harbors advanced a hose into the retired gas main towards the southwest while simultaneously vacuuming liquid out. Liquid removal operations ceased when the hose was obstructed at approximately 110 feet. Hydromax USA subsequently inserted a robotic camera into the retired gas main. Video feed from the camera showed a solidified concrete slurry at approximately 108.5 feet angling upwards toward the top of the main.

  The camera was then retrieved and inserted into the retired main in the opposite northeast direction in order to observe the interior of the main from the upgradient perspective. After traveling approximately 40 feet, the camera inspection was halted by the presence of a gas valve in the main. A small quantity of standing liquid was observed. An additional 1,000 gallons of liquid was vacuumed from the retired gas main into a second tanker truck on the second day.

A CAMP was implemented during site activities to monitor particulate levels and total organic vapors. The CAMP included one (1) downwind and one (1) upwind monitoring station, each with a particulate monitor and a PID. An additional PID was utilized to monitor organic vapor levels within the work zone. No particulate or VOC concentrations were observed to exceed the NYSDOH Generic CAMP action criteria.

All equipment was decontaminated each time it was removed from the interior of the retired gas main. All disposable equipment and personal protective equipment were containerized to be properly disposed of off-site at a permitted facility. All liquids pumped from the main were manifested and transported for disposal by Clean Harbors to their incineration facility in La Porte, Texas. A total of 49,328 pounds of PCB-contaminated liquids were disposed of by high temperature incineration at Clean Harbors Deer Park, LP, La Porte Texas which holds both a USEPA 40CFR §761 Permit for PCB Commercial Storage and Disposal, and a State of Texas Permit for Industrial Solid Waste Management Site, Hazardous Waste Permit No. 50089, issued by the Texas Commission on Environmental Quality. Copies of the disposal manifests are provided as **Appendix R**.

4.0 SITE CHARACTERIZATION FINDINGS

4.1 Surface Soil Sampling Results

A total of nine (9) surface soil samples, identified as SS-1, BS-1, BS-2, BS-4 and SS-2 through SS-6, were collected during the May and November 2014 sampling events. Surface soil sampling results, summarized in **Tables 1a through 1c**, were compared to the NYSDEC 6 NYCRR Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs). Copies of the ASP Category B Data Packages for the May and November 2014 soil samples are provided as **Appendices C and D**, respectively.

No VOCs or SVOCs were detected above the Unrestricted Use SCOs in any of the surface soil samples.

PCBs, including Aroclors 1242, 1254 and 1260, were detected in samples SS-1, BS-1, BS-2, BS-4, SS-2, SS-3 and SS-5. In samples SS-1 and BS-2, total PCBs were 167 µg/kg and 124 µg/kg, respectively, exceeding the Unrestricted Use SCO of 100 µg/kg, but below the Restricted-Residential Use SCO of 1,000 µg/kg. All remaining total PCB detections were below the Unrestricted Use SCO of 100 µg/kg. Total PCB and individual Aroclor concentrations detected in the surface soil samples are shown on **Figure 3**.

4.2 Subsurface Soil Boring Results

4.2.1 Subsurface Soil Results – May 2014

During the May 2014 sampling event, a total of eight (8) soil boring samples were collected from SB-NE, SB-NW, SB-SE and SB-SW, and analyzed for PCBs, TCL VOCs and TCL SVOCs. Soil boring sampling results, summarized in **Tables 2a through 2c**, were compared to the NYSDEC 6 NYCRR Part 375 Unrestricted Use and Restricted-Residential Use SCOs. A copy of the ASP Category B Data Package for the May 2014 soil samples is provided as **Appendix C**.

No VOCs were detected above the Unrestricted Use SCOs in any of the soil boring samples, except for SB-SE 1-1.5', SB-NE 4-4.5' and SB-NW 1-1.5'. Acetone, a common laboratory artifact, was detected in all three samples at concentrations ranging from 75 to 170 µg/kg, exceeding the Unrestricted Use SCO of 50 µg/kg. Xylene only exceeded in sample SB-NE 4-4.5' at a concentration of 290 µg/kg, above the Unrestricted Use SCO of 260 µg/kg. All detected concentrations, however, were below the Restricted-Residential Use SCOs of 100,000 µg/kg.

No SVOCs were detected above the Unrestricted Use SCOs in any of the soil boring samples, except for SB-NW 4-4.5'. In SB-NW 4-4.5', seven SVOCs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene, were detected at concentrations ranging from 420 to 5,600 µg/kg above their respective Unrestricted Use and Restricted-Residential Use SCOs. These detected SVOC compounds are more commonly identified as polycyclic aromatic hydrocarbons (PAHs), which are typically found in asphalt paved areas. The detected PAHs may be attributed to pieces of asphalt that were observed in the SB-NW 4-4.5' sample during field screening.

PCBs, including Aroclors 1242 and 1260, were detected in six of the eight samples above the laboratory detection limit. Five of the samples, including SB-SE 1-1.5', SB-SE 3-3.5', SB-SW 1-1.5', SB-NE 4-4.5' and SB-NW 1-1.5', had total PCB concentrations ranging from 110 to 140,000 µg/kg, exceeding the Unrestricted Use SCO of 100 µg/kg. The Restricted-Residential Use SCO of 1,000 µg/kg was also exceeded in samples SB-SE 1-1.5', SB-SE 3-3.5' and SB-NE 4-4.5'. Sample SB-NE 1-1.5' exhibited a detection in Aroclor 1242 at a concentration of 45 µg/kg, but was below the Unrestricted Use SCO of 100 µg/kg. Total PCB and individual Aroclor concentrations detected in the soil boring samples for the May 2014 sampling event are shown on **Figure 4**.

4.2.2 Subsurface Soil Results – November 2014

During the November 2014 sampling event, a total of twelve (12) soil boring samples were collected from SB-1 through SB-6, and analyzed for PCBs, TCL VOCs and TCL SVOCs. Soil boring sampling results, summarized in **Tables 3a through 3c**, were compared to the NYSDEC 6 NYCRR Part 375 Unrestricted Use and Restricted-Residential Use SCOs. A copy of the ASP Category B Data Package for the November 2014 soil samples is provided as **Appendix D**.

No VOCs were detected above the Unrestricted Use SCOs in any of the soil boring samples, except for SB-2 1.5-2', SB-3 5-5.5' and SB-5 5-6'. The VOC compounds that exceeded include acetone, ethylbenzene and xylene. Acetone, a common laboratory artifact that was also detected in the associated laboratory blank sample, was detected in SB-2 1.5-2' and SB-3 5-5.5' at concentrations of 120 µg/kg and 86 µg/kg, respectively, above the Unrestricted Use SCO of 50 µg/kg. Ethylbenzene was only detected in sample SB-5 5-6' at a concentration of 7,700 µg/kg, exceeding the Unrestricted Use SCO of 1,000 µg/kg. Xylene was identified in samples SB-3 5-5.5' and SB-5 5-6' at concentrations of 1,800 µg/kg and 46,000 µg/kg, respectively, above the Unrestricted Use SCO of 260 µg/kg. All detected concentrations, however, were below the Restricted-Residential Use SCOs.

No SVOCs were detected above the Unrestricted Use SCOs in any of the soil boring samples.

PCBs, including Aroclors 1242, 1254 and 1260, were detected in six of the twelve samples above the laboratory detection limit. Five of the samples, including SB-1 1-1.5', SB-2 1.5-2', SB-3 5-5.5', SB-5 1-1.5' and SB-5 5-6', had total PCB concentrations ranging from 272 to 44,300 µg/kg, exceeding the Unrestricted Use SCO of 100 µg/kg. The Restricted-Residential Use SCO of 1,000 µg/kg was also exceeded in samples SB-3 5-5.5', SB-5 1-1.5' and SB-5 5-6'. Sample SB-3 1-1.5' exhibited a concentration of 20 µg/kg in Aroclor 1254, below the Unrestricted Use SCO of 100 µg/kg. Total PCB and individual Aroclor concentrations detected in the soil boring samples for the November 2014 sampling event are shown on **Figure 5**.

4.2.3 Subsurface Soil Results – June 2015

During the June 2015 sampling event, a total of twelve (12) soil boring samples were collected from SB-7 through SB-12, and analyzed for PCBs, TCL VOCs and TCL SVOCs. Soil boring sampling results, summarized in **Tables 4a through 4c**, were compared to the NYSDEC 6 NYCRR Part 375 Unrestricted Use and Restricted-Residential Use SCOs. Copies of the ASP Category B Data Packages for the June 2015 soil samples are provided as **Appendices E and F**.

No VOCs were detected above the Unrestricted Use SCOs in any of the soil boring samples, except for SB-10 5-5.5'. In sample SB-10 5-5.5', xylene was detected at a concentration of 3,700 µg/kg, above the Unrestricted Use SCO of 260 µg/kg. However, this detection was below the Restricted-Residential Use SCO of 100,000 µg/kg.

No SVOCs were detected above the Unrestricted Use SCOs in any of the soil samples, except for SB-8 1-1.5' and SB-12 1.5-2'. In SB-8 1-1.5', six SVOCs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene, were detected at concentrations ranging from 710 to 3,600 µg/kg above their respective Unrestricted Use and Restricted-Residential Use SCOs. In SB-12 1.5-2', benzo(b)fluoranthene was detected at a concentration of 1,700 µg/kg, above the Unrestricted Use and Restricted-Residential Use SCO of 1,000 µg/kg. These detected SVOC compounds are more commonly identified as polycyclic aromatic hydrocarbons (PAHs), which are typically found in asphalt paved areas. Since these samples were collected just beneath the asphalt roadbed, the detected SVOCs may be from the asphalt paving although no asphalt or soil discoloration was noted during the field screening.

PCBs, including Aroclors 1242, 1254 and 1260, were detected in nine of the twelve soil samples above the laboratory method detection limit. Six of the samples, including SB-7 1-1.5', SB-7 5-5.5', SB-8 1-1.5', SB-9 1.5-2', SB-10 2.5-3' and SB-10 5-5.5', had total PCB concentrations ranging from 119 to 23,000 µg/kg, above the Unrestricted Use SCO of 100 µg/kg. Of the six samples, SB-7 1-1.5', SB-7 5-5.5', SB-10 2.5-3' and SB-10 5-5.5' also exceeded the Restricted-Residential Use SCO of 1,000 µg/kg. The remaining three soil samples (SB-11 1-1.5', SB-11 5-5.5' and SB-12 1.5-2') had total PCB concentrations ranging from 37 to 91 µg/kg, below the Unrestricted Use SCO of 100 µg/kg. Total PCB and individual Aroclor concentrations detected in the soil boring samples for the June 2015 sampling event are included in **Figure 6**.

4.3 Groundwater Sampling Results

4.3.1 Groundwater Results – June 2014

During the June 2014 sampling event, a total of four (4) groundwater samples were collected from monitoring wells MW-NE, MW-NW, MW-SE and MW-SW. The samples were analyzed for PCBs, TCL VOCs and TCL SVOCs. Groundwater sampling results, summarized in **Tables 5a through 5c**, were compared to the NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA). A copy of the ASP Category B Data Package for the June 2014 groundwater samples is provided as **Appendix G**.

VOCs were detected above the Class GA limitations in all four groundwater samples. The detected VOC compounds include benzene, ethylbenzene and xylene. Benzene concentrations ranged from 240 to 420 µg/l, exceeding the Class GA standard of 1 µg/l. Ethylbenzene concentrations ranged from 26 to 130 µg/l, exceeding the Class GA standard of 5 µg/l. Xylene concentrations ranged from 44 to 170 µg/l, above the Class GA standard of 5 µg/l.

SVOCs were detected above the Class GA limitations in groundwater samples MW-NE, MW-NW and MW-SW. The detected SVOC compounds include 2,4-dimethylphenol, naphthalene and phenol. 2,4-dimethylphenol was only detected in sample MW-NE at a concentration 14 µg/l, exceeding the Class GA standard of 2 µg/l. Naphthalene was detected in all samples at concentrations ranging from 23 to 220 µg/l, above the Class GA standard of 10 µg/l. Phenol was also detected in all samples at concentrations ranging from 4 to 30 µg/l, above the Class GA standard of 2 µg/l.

PCB Aroclor 1242 was detected above the Class GA limitation of 0.09 µg/l in samples MW-NE, MW-SE, MW-SW. The PCB concentrations ranged from 1.3 to 40 µg/l. Total PCB and individual Aroclor concentrations detected in the groundwater samples for the June 2014 sampling event are shown on **Figure 9**.

4.3.2 Groundwater Results – November to December 2014

During the November to December 2014 sampling event, a total of ten (10) groundwater samples were collected from monitoring wells MW-NE, MW-NW, MW-SE, MW-SW and MW-1 through MW-6. The samples were analyzed for PCBs, TCL VOCs and TCL SVOCs. Groundwater sampling results, summarized in **Tables 6a through 6c**, were compared to the NYSDEC TOGS 1.1.1 Class GA Standards. Copies of the ASP Category B Data Packages for the November to December 2014 groundwater samples are provided as **Appendices H and I**.

VOCs were detected above the Class GA limitations in five groundwater samples: MW-NE, MW-NW, MW-SE, MW-SB3 and MW-SB5. The detected VOC compounds include 1,2-dichloroethane, acetone, benzene, ethylbenzene and xylene. 1,2-dichloroethane was only detected in sample MW-SB3 at a concentration of 11 µg/l, exceeding the Class GA standard of 0.6 µg/l. Acetone, a common laboratory artifact that was also detected in the associated laboratory blank sample, was only detected in MW-SB5 at a concentration of 52 µg/l, above the Class GA standard of 50 µg/l. Benzene was detected in samples MW-NE, MW-NW, MW-SB3 and MW-SB5 at concentrations ranging from 4 to 370 µg/l, above the Class GA standard of 1 µg/l. Ethylbenzene was detected in MW-SB3 and MW-SB5 at concentrations of 350 µg/l and 87 µg/l, respectively, exceeding the Class GA standard of 5 µg/l. Xylene was detected in MW-NE, MW-SE, MW-SB3 and MW-SB5 at concentrations ranging from 11 to 1,300 µg/l, above the Class GA

standard of 5 µg/l. No VOCs were detected in the remaining samples labeled as MW-SW, SB-1 GW, SB-2 GW, SB-4 GW and SB-6 GW.

SVOCs were detected above the Class GA limitations in four groundwater samples: MW-NE, MW-SE, MW-SB3 and MW-SB5. The detected SVOC compounds include 2,4-dimethylphenol, naphthalene and phenol. 2,4-dimethylphenol was detected in samples MW-SB3 and MW-SB5 at concentrations of 15 µg/l and 49 µg/l, respectively, above the Class GA standard of 2 µg/l. Naphthalene was detected in all four samples at concentrations ranging from 14 to 440 µg/l, above the Class GA standard of 10 µg/l. Phenol was only detected in sample MW-SB5 at a concentration of 8 µg/l, above the Class GA standard of 2 µg/l.

PCB Aroclors 1242 and 1254 were detected above the Class GA limitations in four samples: MW-NE, MW-SE, MW-SB3 and MW-SB5. The total PCB concentrations ranged from 6.26 to 22.3 µg/l, exceeding the Class GA standard of 0.09 µg/l. Total PCB and individual Aroclor concentrations detected in the groundwater samples for the November to December 2014 sampling event are shown on **Figure 10**.

4.3.3 Groundwater Results – June to July 2015

During the June to July 2015 sampling event, a total of fifteen (15) groundwater samples were collected from monitoring wells MW-NE, MW-NW, MW-SE, MW-SW and MW-1 through MW-8 and MW-10 through MW-12. Groundwater sampling results, summarized in **Tables 7a through 7c**, were compared to the NYSDEC TOGS 1.1.1 Class GA Standards. Copies of the ASP Category B Data Packages for the June to July 2015 groundwater samples are provided as **Appendices J, K and L**.

VOCs were detected above the Class GA limitations in five groundwater samples: MW-NE, MW-NW, MW-3, MW-5 and MW-10. The exceeded VOC compounds include benzene, ethylbenzene and xylene. Benzene was detected in samples MW-NE, MW-NW, MW-3 and MW-5 at concentrations ranging from 20 to 59 µg/l, above the Class GA standard of 1 µg/l. Ethylbenzene was detected in samples MW-NW, MW-3, MW-5 and MW-10 at concentrations ranging from 17 to 280 µg/l, above the Class GA standard of 5 µg/l. Xylene was detected in all five samples at concentrations ranging from 7 to 930 µg/l, above the Class GA standard of 5 µg/l.

SVOCs were detected above the Class GA limitations in eight groundwater samples: MW-NW, MW-SE, MW-3, MW-4, MW-5, MW-7, MW-10 and MW-12. The detected SVOC compounds include 2,4-dimethylphenol, bis(2-ethylhexyl)phthalate, naphthalene and phenol. 2,4-dimethylphenol was detected in samples MW-4, MW-5 and MW-10 at concentrations ranging from 3 to 6 µg/l, above the Class GA standard of 2 µg/l. Bis(2-ethylhexyl)phthalate was detected in samples MW-NW, MW-3 and MW-12 at concentrations ranging from 6 to 49 µg/l, above the Class GA standard of 5 µg/l. Naphthalene was

detected in samples MW-NW, MW-SE, MW-3, MW-5 and MW-7 at concentrations ranging from 12 to 430 µg/l, above the Class GA standard of 10 µg/l. Phenol was detected in samples MW-4 and MW-5 at concentrations of 6 µg/l and 17 µg/l, respectively, above the Class GA standard of 2 µg/l.

PCB Aroclor 1242 was detected above the Class GA limitation of 0.09 µg/l in seven samples: MW-NE, MW-SE, MW-3, MW-5, MW-7, MW-10 and MW-11. The PCB concentrations ranged from 1.9 to 24 µg/l. Total PCB and individual Aroclor concentrations detected in the groundwater samples for the June to July 2015 sampling event are shown on **Figure 11**.

4.3.4 Groundwater Results – October 2017

During the October 2017 sampling event, a total of fifteen (15) groundwater samples were collected from all monitoring wells installed. Groundwater sampling results, summarized in **Tables 8a through 8c**, were compared to the NYSDEC TOGS 1.1.1 Class GA Standards. A copy of the analytical laboratory report for the October 2017 groundwater samples is provided as **Appendix M**.

VOCs were detected above the Class GA limitations in three groundwater samples: MW-NE, MW-3 and MW-5. Benzene was detected in MW-NE at a concentration of 2 µg/l, above the Class GA standard of 1 µg/l. Ethylbenzene and xylene were detected in MW-3 at concentrations of 14 µg/l and 110 µg/l, respectively, above the Class GA standards of 5 µg/l. Xylene was detected in sample MW-5 at a concentration of 56 µg/l, above the Class GA standard of 5 µg/l. Methylene chloride, which was also identified in the associated laboratory blank sample, was detected in all groundwater samples, except for MW-3, at concentrations ranging from 7.5 to 17 µg/l, above the Class GA standard of 5 µg/l.

SVOCs were detected above the Class GA limitations in three groundwater samples: MW-NE, MW-3 and MW-5. The detected SVOC compounds include 2,4-dimethylphenol and naphthalene. 2,4-dimethylphenol was detected in samples MW-3 and MW-5 at concentrations of 17 µg/l and 5.9 µg/l, respectively, above the Class GA standard of 2 µg/l. Naphthalene was detected in samples MW-NE and MW-3 at concentrations of 34 µg/l and 19 µg/l, respectively, above the Class GA standard of 10 µg/l.

PCBs, including Aroclors 1016, 1242, 1248 and 1260, were detected above the Class GA limitation in all groundwater samples, except for MW-NW and MW-4. Total PCB concentrations ranged from 0.12 to 144.2 µg/l, exceeding the Class GA standard of 0.09 µg/l. Aroclor 1016, also detected in the associated laboratory blank, was only detected in MW-12 at a concentration of 0.12 µg/l. Aroclor 1248 was only detected in MW-11 at a concentration of 0.64 µg/l. Only Aroclor 1242 was detected in MW-SW, MW-1, MW-2, MW-6, MW-8 and MW-10. Both Aroclors 1242 and 1260 were detected in MW-NE, MW-SE, MW-

3, MW-5 and MW-7. Total PCB and individual Aroclor concentrations detected in the groundwater samples for the October 2017 sampling event are shown on **Figure 12**.

4.3.5 Groundwater Results – March 2019

During the March 2019 sampling event, a total of fifteen (15) groundwater samples were collected from all existing site monitoring wells. Groundwater sampling results, summarized in **Tables 9a and 9b**, were compared to the NYSDEC TOGS 1.1.1 Class GA Standards. A copy of the analytical laboratory reports for the March 2019 groundwater samples are provided as **Appendix P**.

One VOC was detected above the Class GA limitation in one groundwater sample: MW-3. Ethylbenzene was detected in MW-3 at a concentration of 11 µg/l above the Class GA standard of 5 µg/l.

PCBs, including Aroclors 1248 and 1260, were detected above the Class GA limitation in nine groundwater samples: MW-NE, MW-SE, MW-1, MW-2, MW-3, MW-5, MW-7, MW-10 and MW-11. Total PCB concentrations ranged from 0.73 to 9.952 µg/l, exceeding the Class GA standard of 0.09 µg/l. Only Aroclor 1248 was detected in MW-NE, MW-SE, MW-1, MW-2, MW-3, MW-5, MW-10 and MW-11. Both Aroclors 1248 and 1260 were detected in MW-7. Total PCB and individual Aroclor concentrations detected in the groundwater samples for the March 2019 sampling event are shown on **Figure 13**.

5.0 CONCLUSIONS

The extent of the gas condensate contamination was delineated during several site investigation efforts conducted in May to June 2014, November to December 2014 and June to July 2015. The successful delineation was accepted by NYSDEC in a letter dated April 13, 2016, provided in **Appendix A**. The site investigations were performed in conformance with a NYSDEC-approved Site Investigation and Pipe Abandonment Work Plan, dated June 28, 2013, and an addendum dated March 13, 2015. PCBs showed the most impact in the investigation area and are considered to be the primary contaminant of concern. Select VOCs and SVOCs were also detected above the SCOs, and generally correlated with the soil and groundwater samples that exhibited PCB detections.

A total of nine (9) surface soil samples were collected in the grass areas on the east and west sides of Seaview Avenue near the intersection with Paerdegat Avenue North. **Tables 1a through 1c** summarize the surface soil sampling results. **Figure 3** shows the detected concentrations of PCBs in all surface soil samples collected. Surface soils showed impacts generally below the most restrictive SCOs (i.e., NYSDEC Part 375 Unrestricted Use and Restricted-Residential Use SCOs) and do not present an exposure pathway to the public.

A total of sixteen (16) soil borings were advanced in the vicinity of the spill release area. **Tables 2a through 4c** summarize the soil boring sampling results during the 2014 and 2015 sampling events. **Figure 7** shows the detected concentrations of PCBs in all soil boring samples collected from May 2014 through June 2015. **Figure 8** shows the total PCB concentrations for soil boring samples with exceedances above the NYSDEC Part 375 Restricted-Residential Use SCO. As shown on **Figures 7 and 8**, PCB exceedances in the deeper subsurface soil samples (i.e., SB-5, SB-3, SB-7, SB-NE, SB-SE and SB-10) above the Restricted-Residential Use SCO are limited to the boundaries of National Grid's active and retired gas mains, the Con Edison underground electric vault and conduits, and the eastern curb line along Seaview Avenue. PCB detections are also exhibited in shallow soil samples. However, these detections are all below the Restricted-Residential Use SCO of 1,000 µg/kg, which was identified as the site-specific cleanup criteria in an August 21, 2017 NYSDEC correspondence with National Grid (included in **Appendix A**).

A total of fifteen (15) groundwater monitoring wells were installed within the locations of the soil borings. **Tables 5a through 7c** summarize the groundwater sampling results during the 2014 and 2015 sampling events. **Figure 11** shows the detected concentrations of PCBs in groundwater samples collected during the June to July 2015 sampling event. Additional groundwater sampling events were conducted in October 2017 and March 2019, and sampling results are summarized in **Tables 8a-8c and 9a-9b**. **Figures 12 and 13** show the detected concentrations of PCBs in all groundwater samples collected during the October 2017 and March 2019 events, respectively. Groundwater sampling results were compared with the NYSDEC TOGS 1.1.1 Class GA standards. **Figures 11 through 13** show that PCB exceedances in groundwater samples above the Class GA standards are generally limited to the same boundaries as the subsurface soil samples. Higher PCB concentrations are observed to be more clustered in the monitoring wells closer to the former standpipe pit, while the outer monitoring wells show lower PCB concentrations.

Following completion of the delineation sampling, investigations within the interior of the retired gas main were performed from 2016 to 2019. Efforts were made to determine the disposition and location of the cement grout plug so that abandonment of the retired gas main could be completed. In November 2019, a robotic camera was inserted towards the southwest inside the retired main through a 16-inch fitting entrance point located approximately 140 feet southwest from the former standpipe pit. A solidified concrete slurry was observed at approximately 108.5 feet from the entrance point, angling upwards toward the top of the main. Based on the observations, the total distance from the former standpipe pit to the concrete slurry is approximately 250 feet.

6.0 CERTIFICATION

I, Paul R. Lageraaen, P.E, P.G., certify that I am currently a New York State registered professional engineer and Qualified Environmental Professional, as defined in 6 NYCRR Part 375, and that this Site Characterization Report for the Canarsie Gas Condensate Release was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation.

(Seal)

PAUL R. LAGERAAEN, P.E., P.G.
Printed Name of Registered Professional Engineer

Signature of Registered Professional Engineer

Date 6/24/2020 Registration No. 079960 State NY

SITE LOCATION MAP

SCALE: 1" = 2,000'

FIGURE 1

NGRD1221

H2M architects + engineers

Melville, NY
New City, NY
Albany, NY
Parsippany, NJ

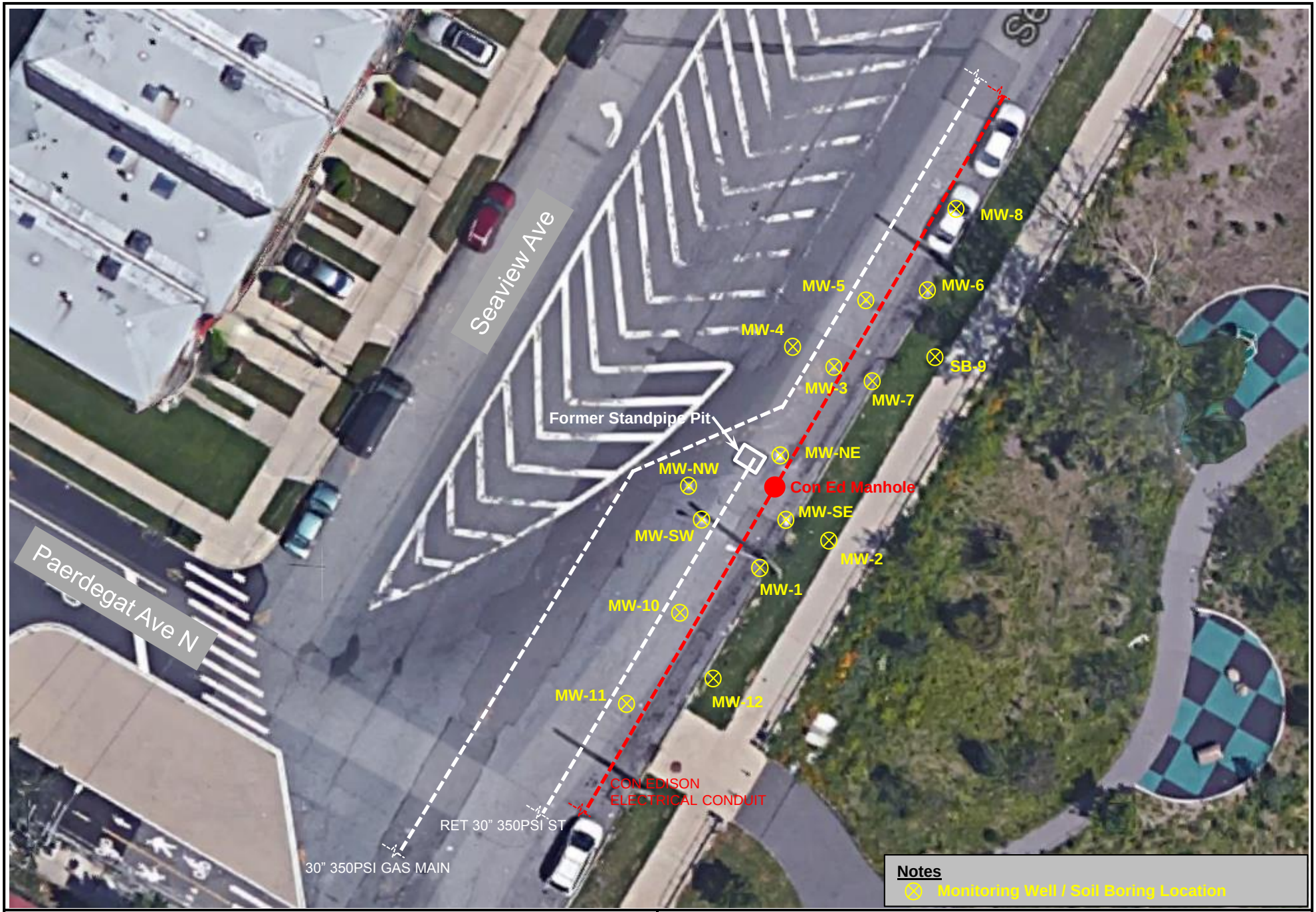

Figure 2. **Site Plan**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

H2M architects + engineers
290 Broad Hollow Road, Suite 400E
Melville, NY 11747

Figure 3. **Site Plan with Con Edison Vault Locations**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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Melville, NY 11747

N

Figure 4. **Surface Soil Sampling Locations and PCB Results**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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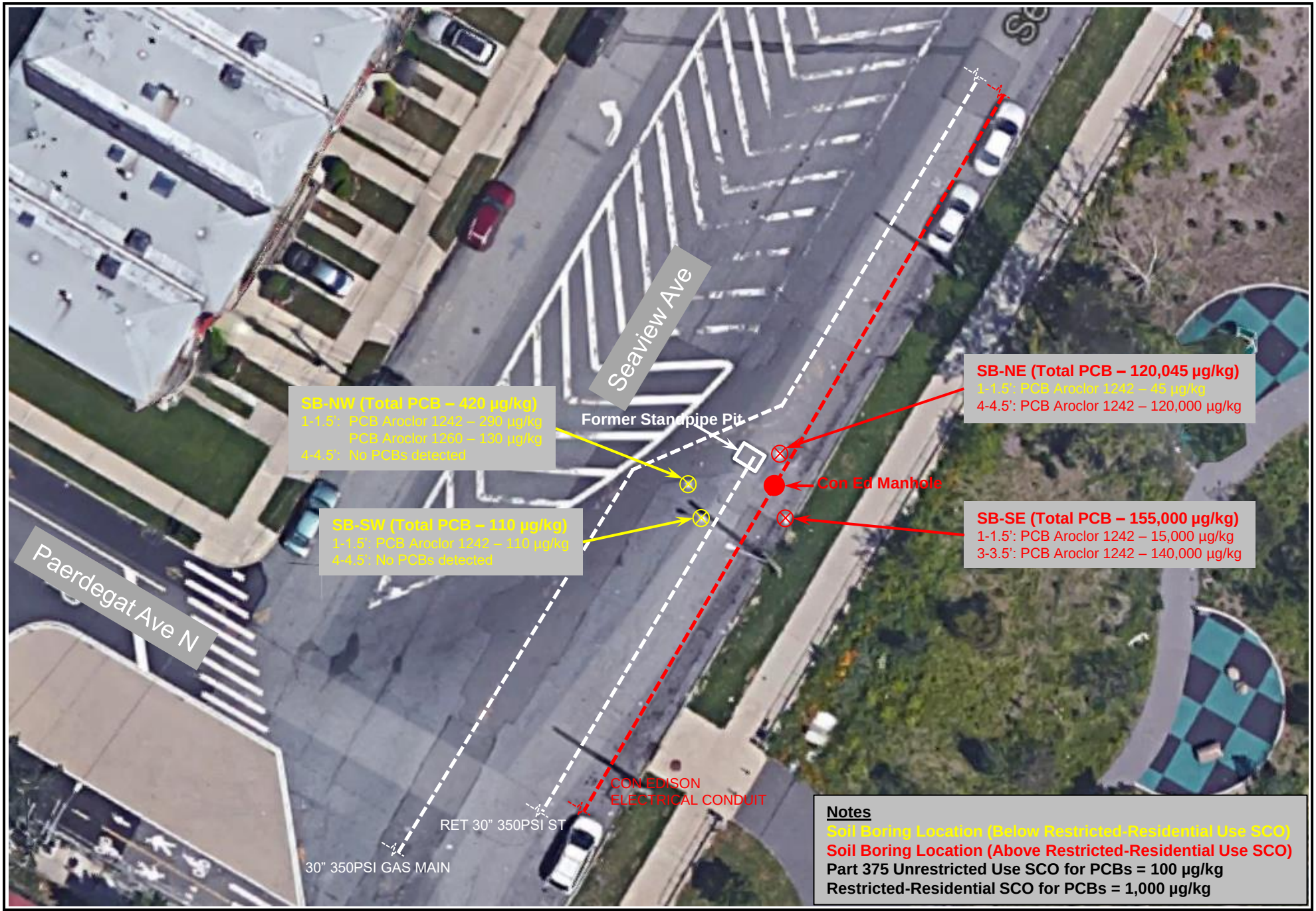

Figure 5. **Soil Boring Sampling Locations and PCB Results (May 2014)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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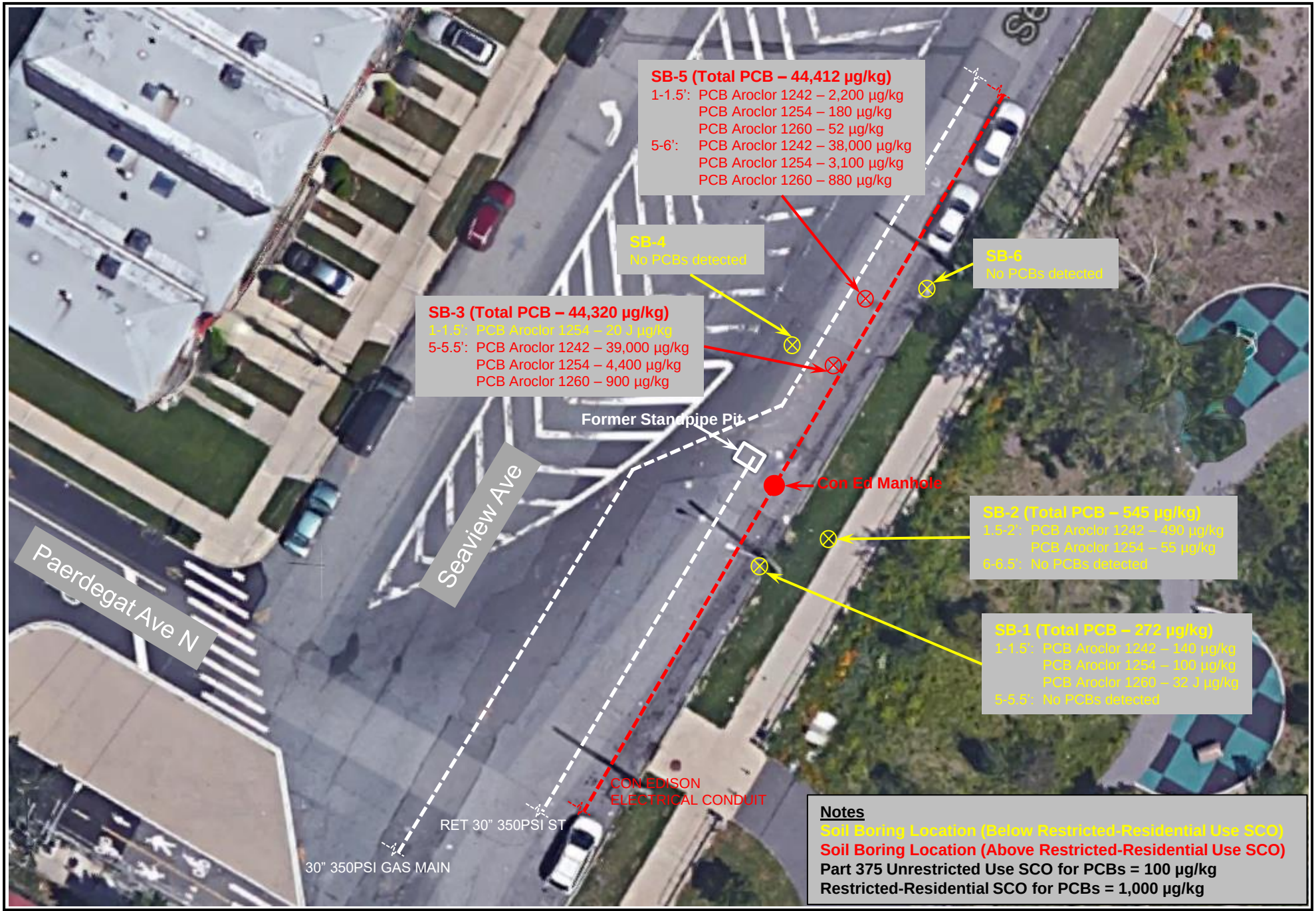

Figure 6. **Soil Boring Sampling Locations and PCB Results (November 2014)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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Melville, NY 11747

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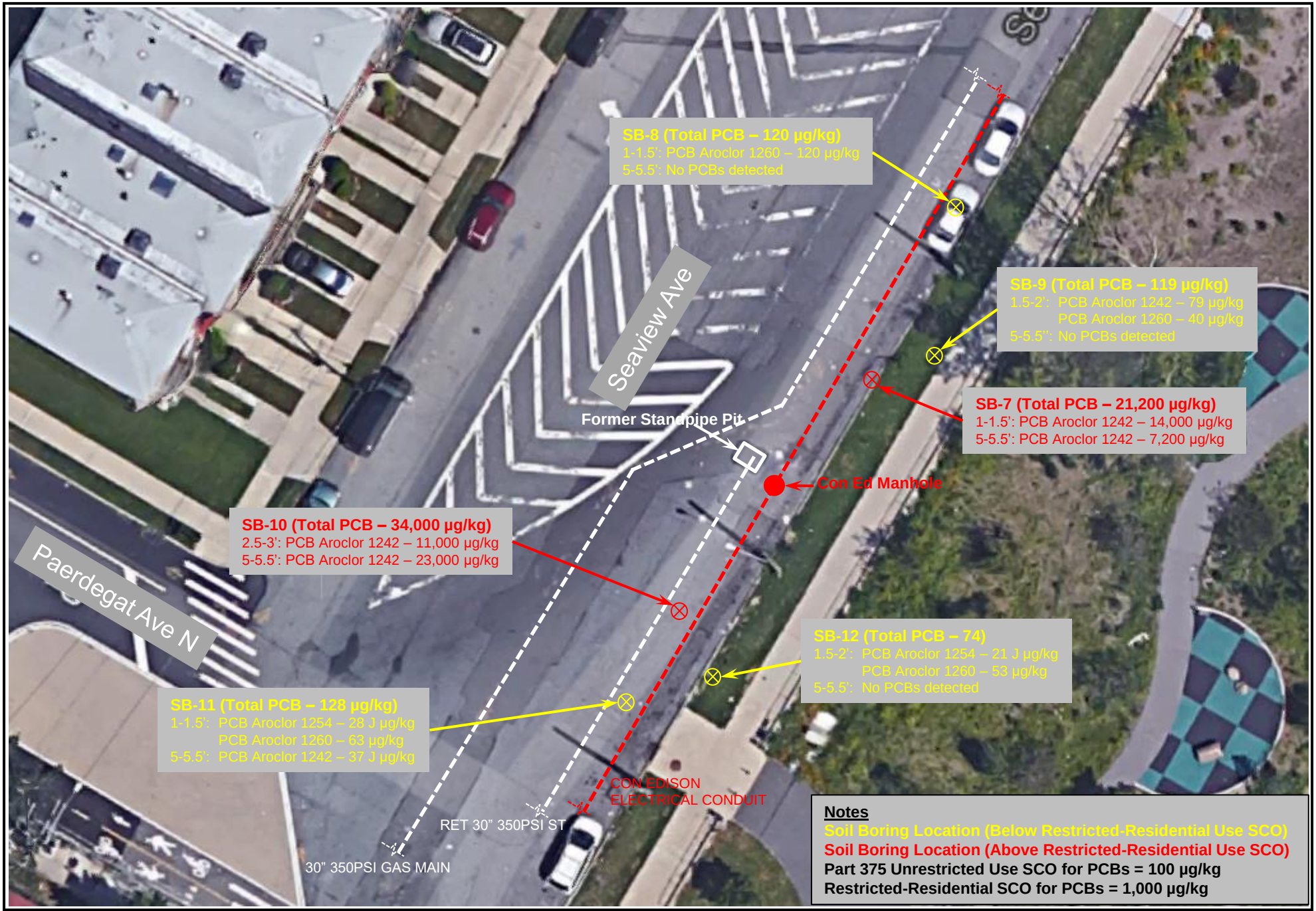

Figure 7. **Soil Boring Sampling Locations and PCB Results (June 2015)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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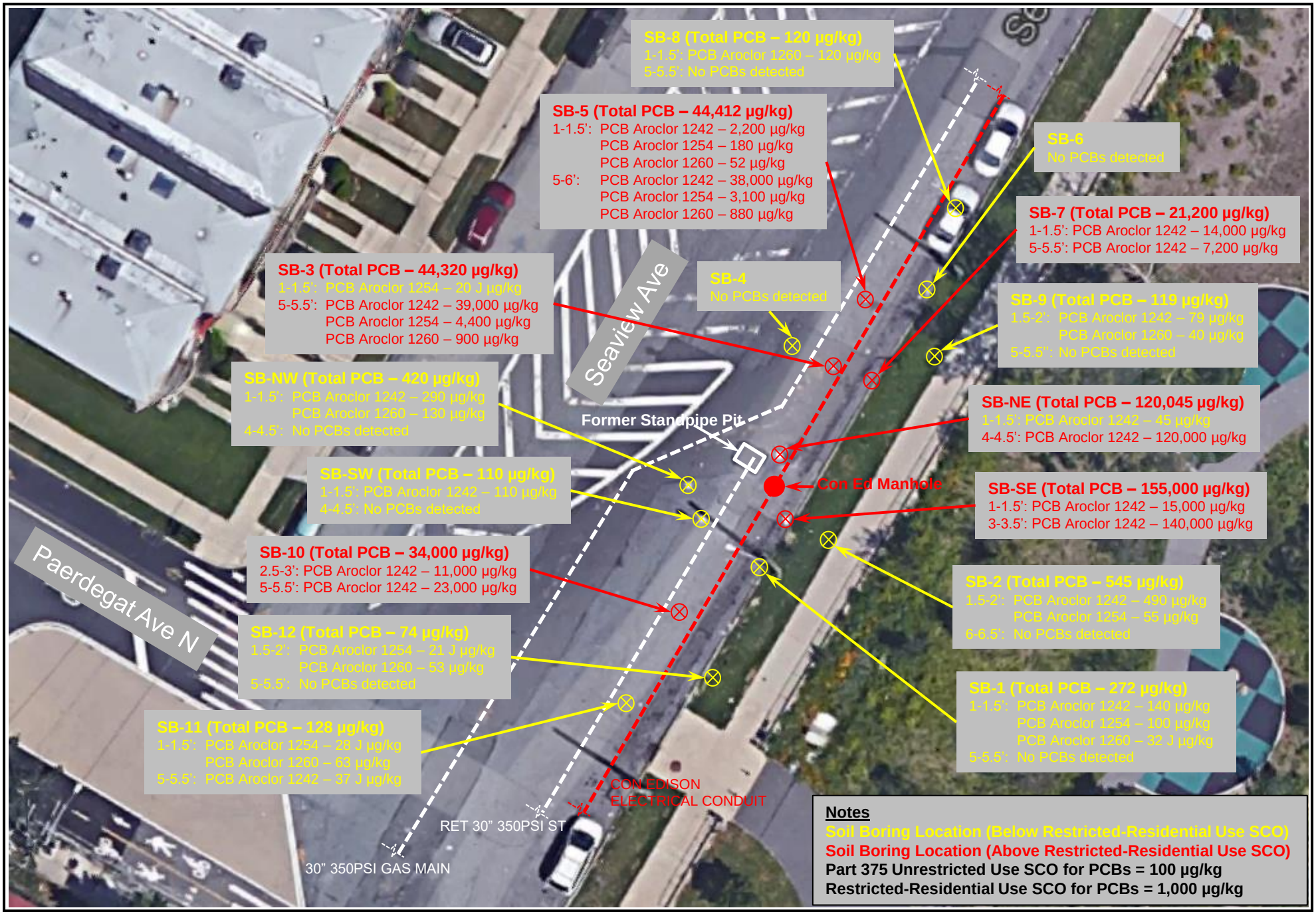

Figure 8. **Soil Boring Sampling PCB Results (May 2014 – June 2015)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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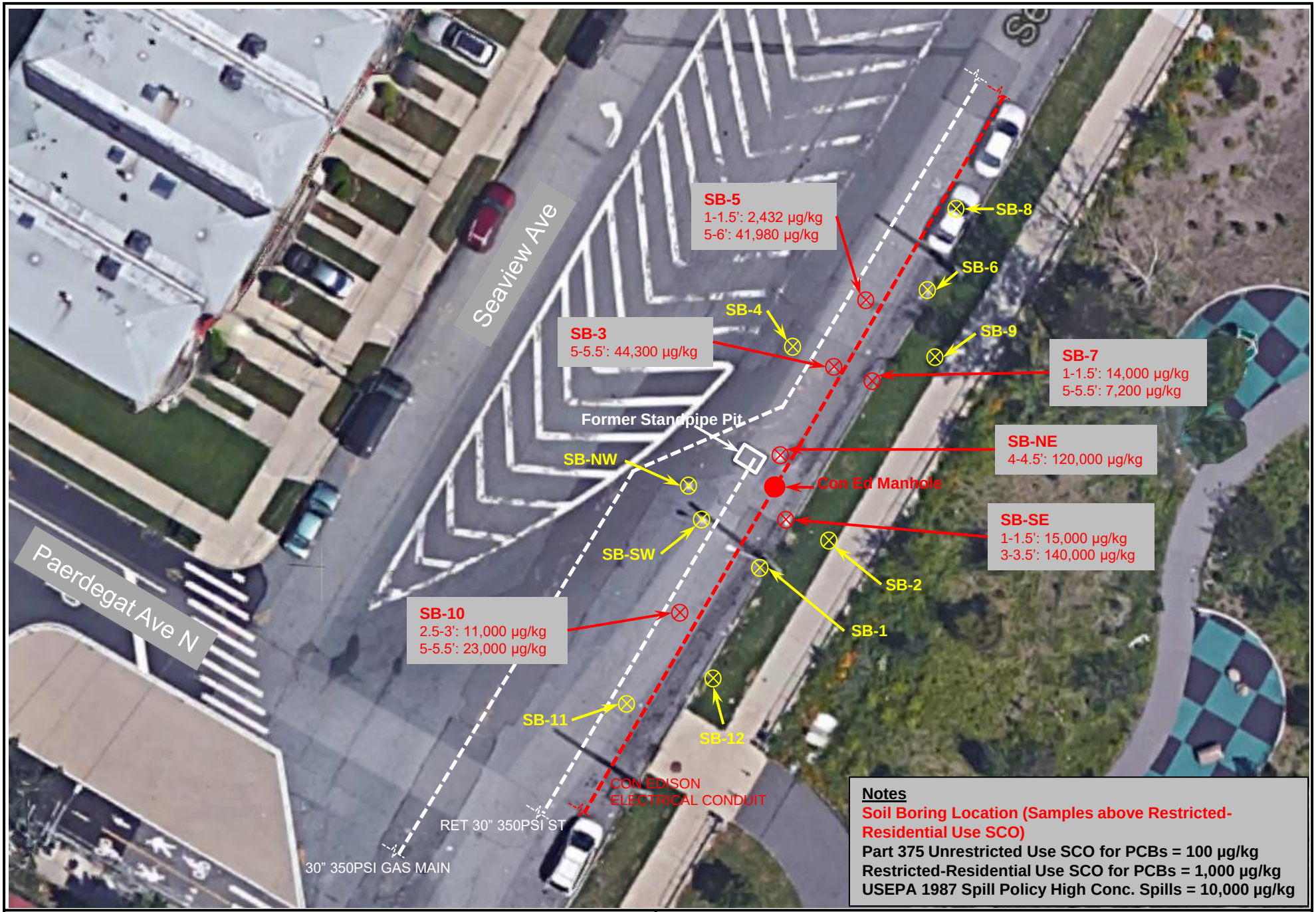

Figure 9. **Total PCB Results in Soil Borings (Exceedances Only)**
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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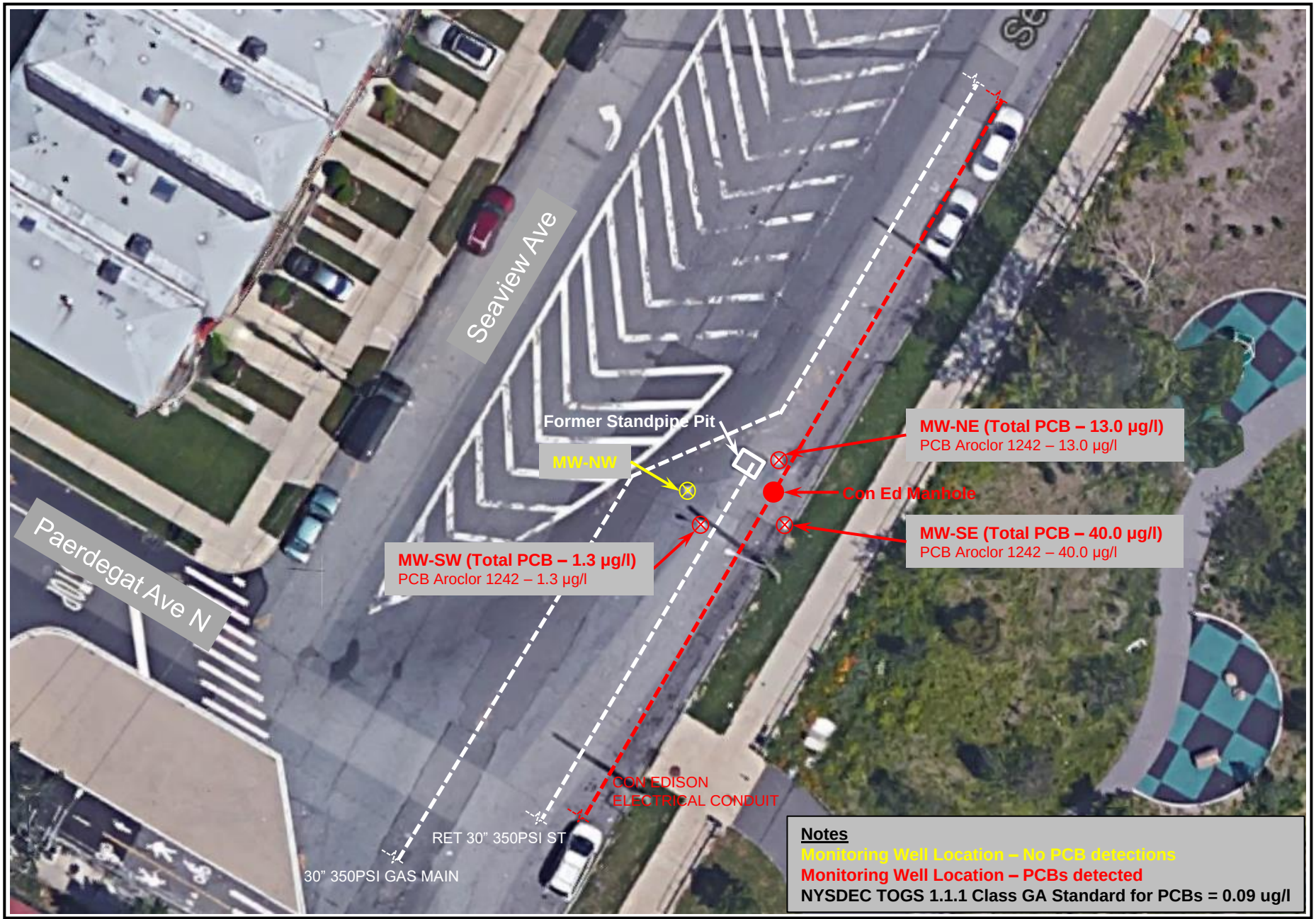

Figure 10. Monitoring Well Locations and PCB Results (June 2014)
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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Melville, NY 11747

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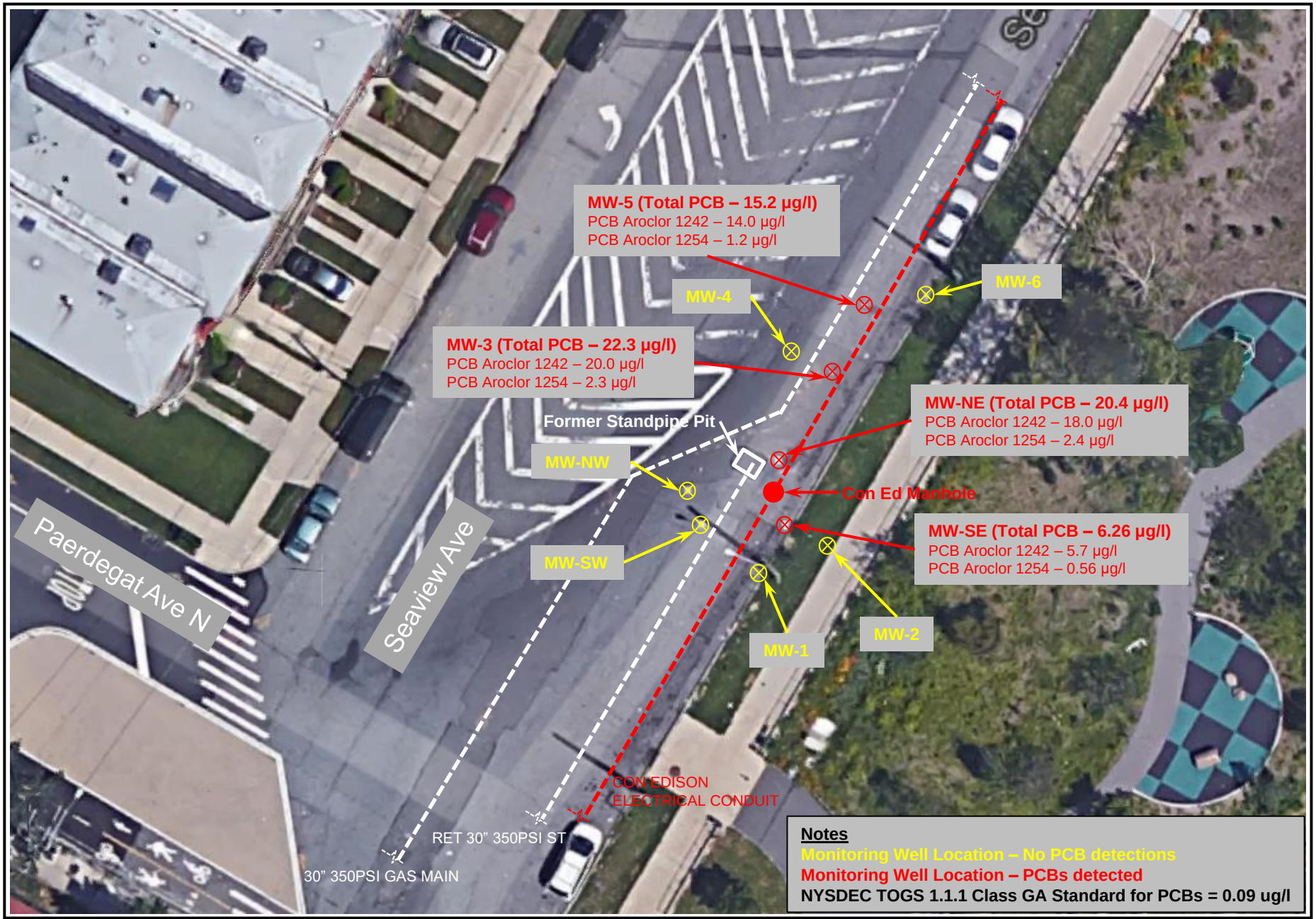

Figure 11. Monitoring Well Locations and PCB Results (Nov-Dec 2014)
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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Melville, NY 11747

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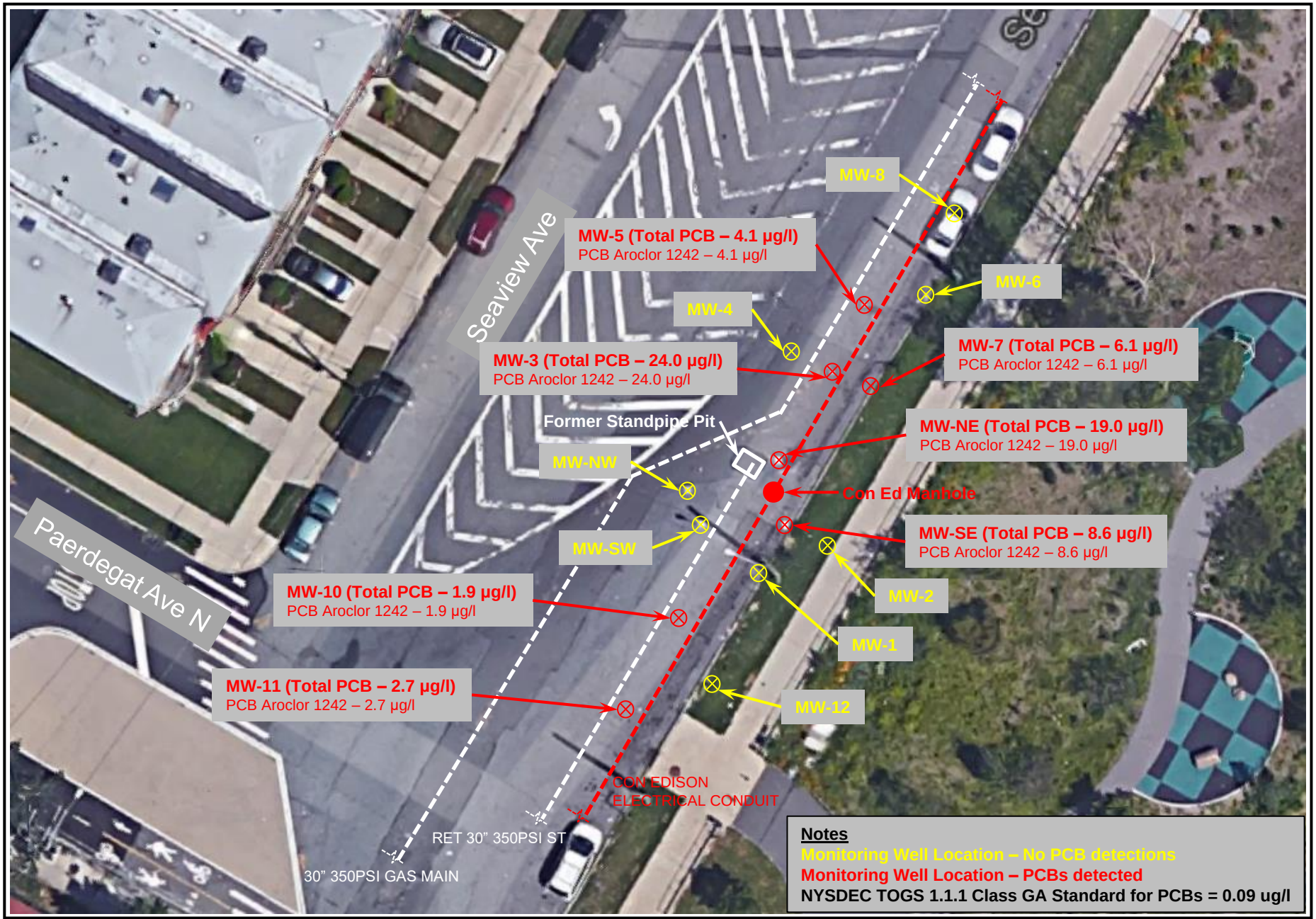

Figure 12. Monitoring Well Locations and PCB Results (June-July 2015)
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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Melville, NY 11747

N

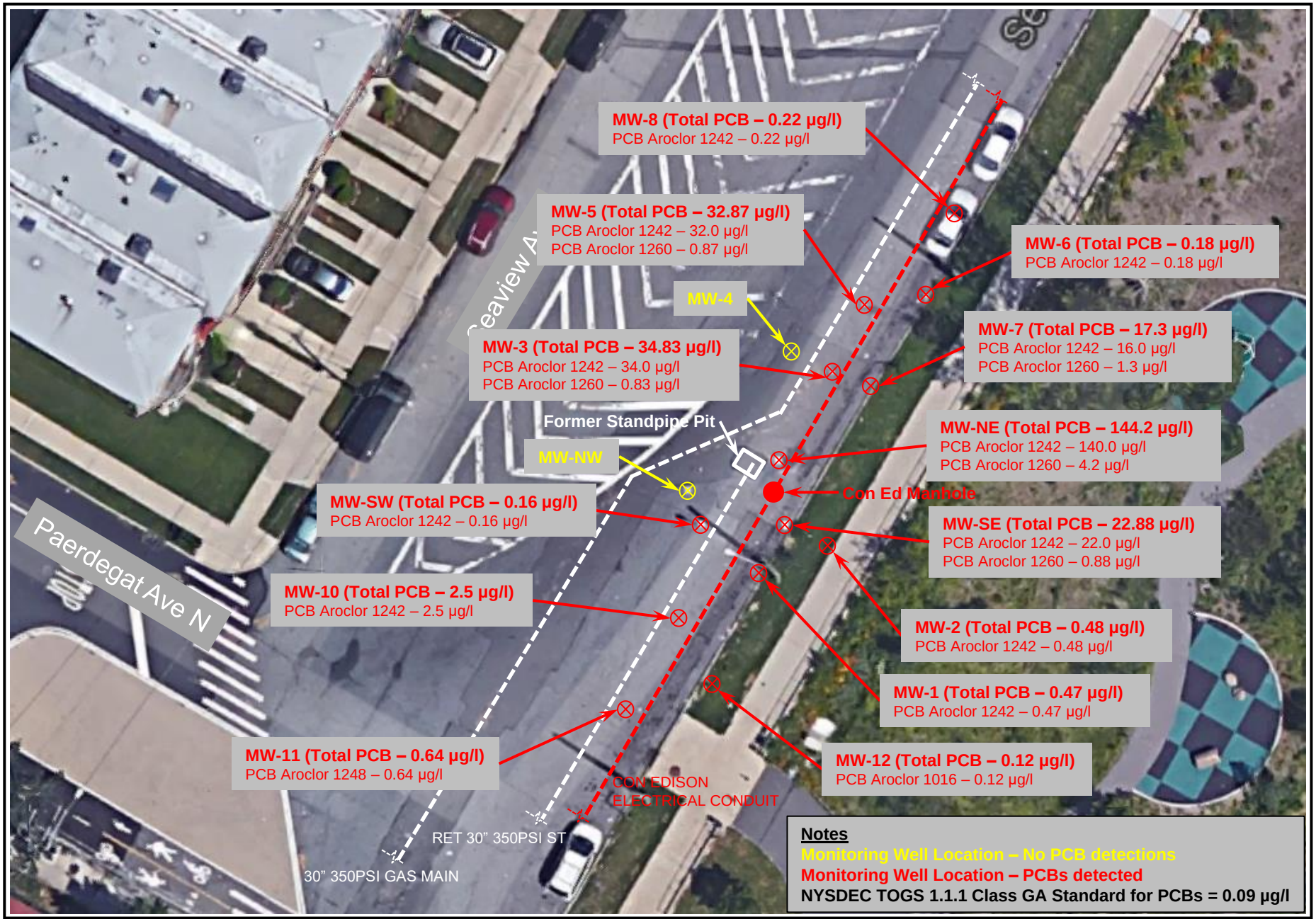

Figure 13. Monitoring Well Locations and PCB Results (October 2017)
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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290 Broad Hollow Road, Suite 400E
Melville, NY 11747

N

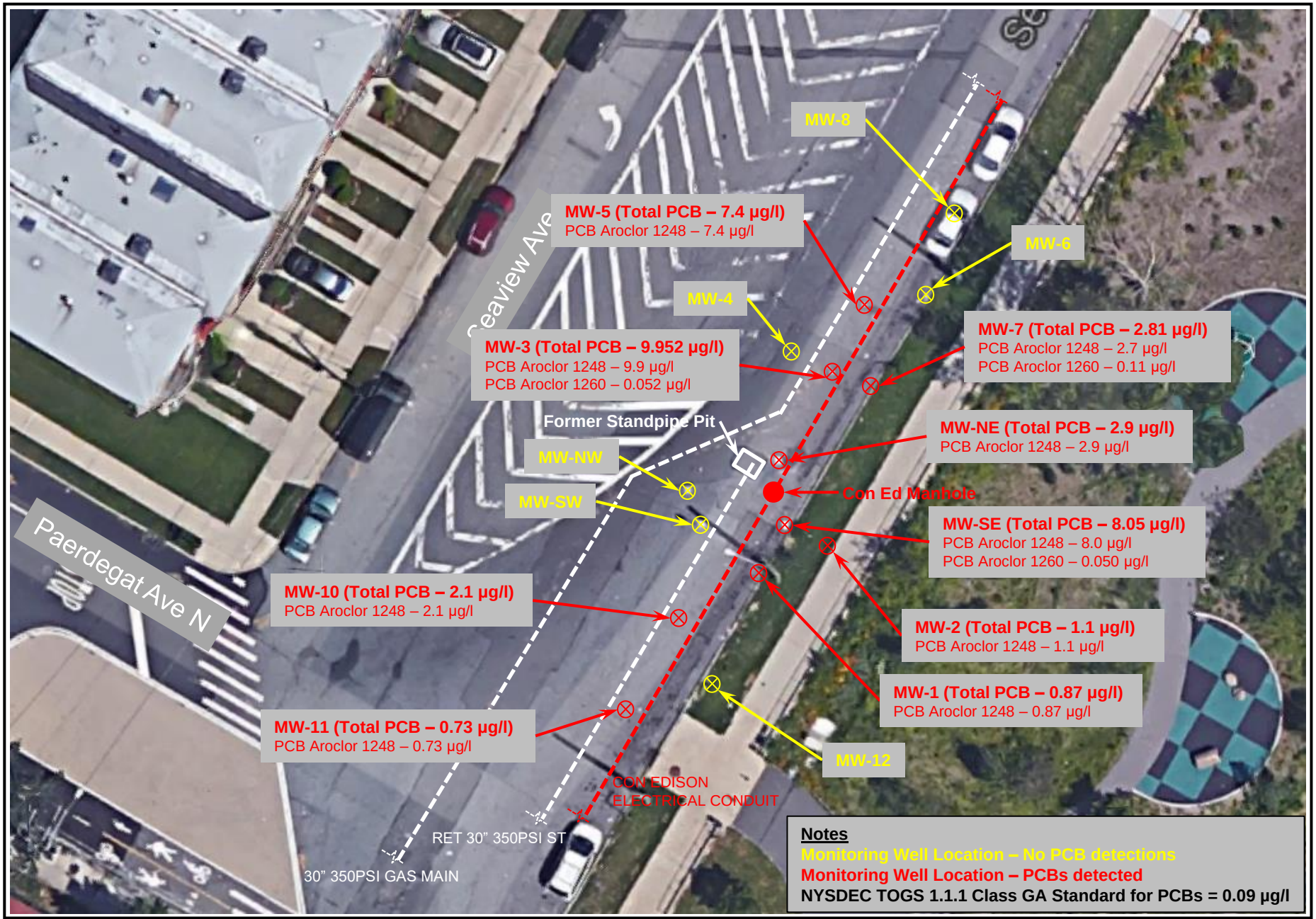

Figure 14. Monitoring Well Locations and PCB Results (March 2019)
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

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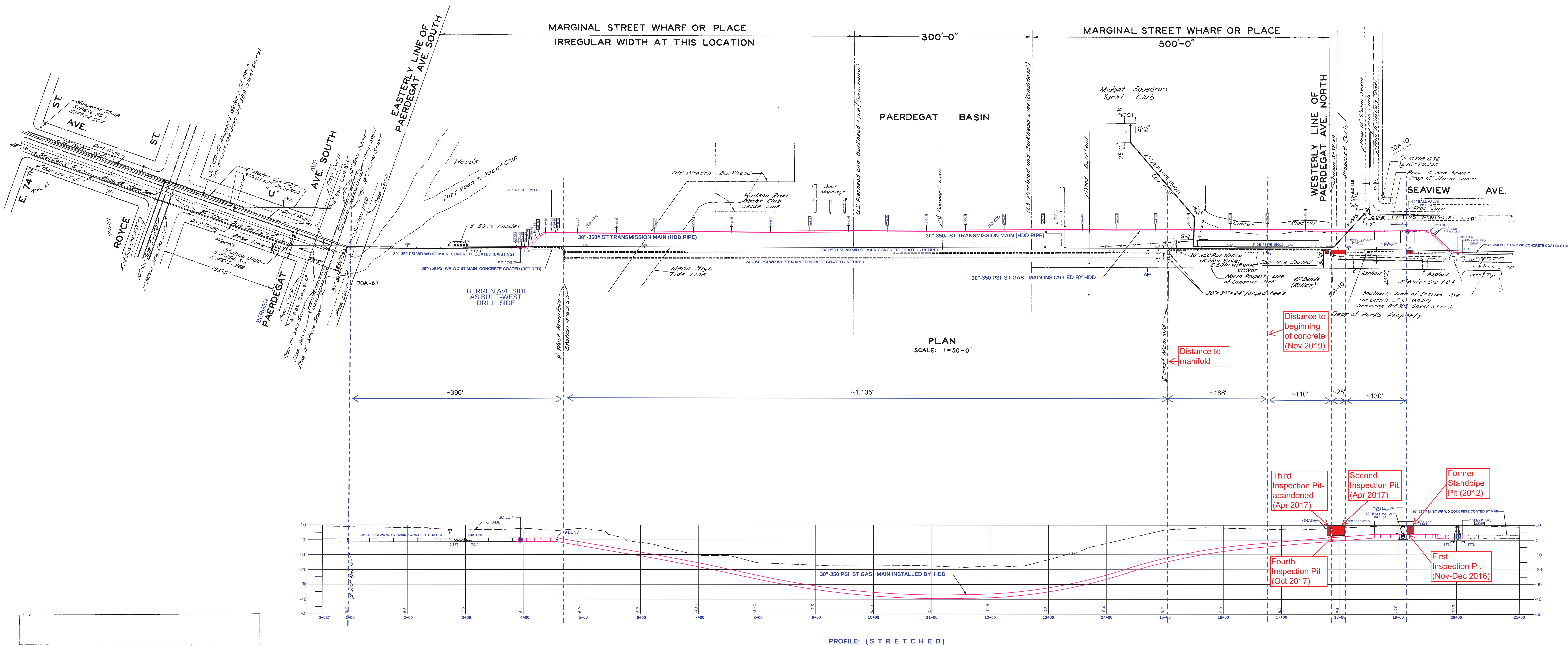
290 Broad Hollow Road, Suite 400E
Melville, NY 11747

N



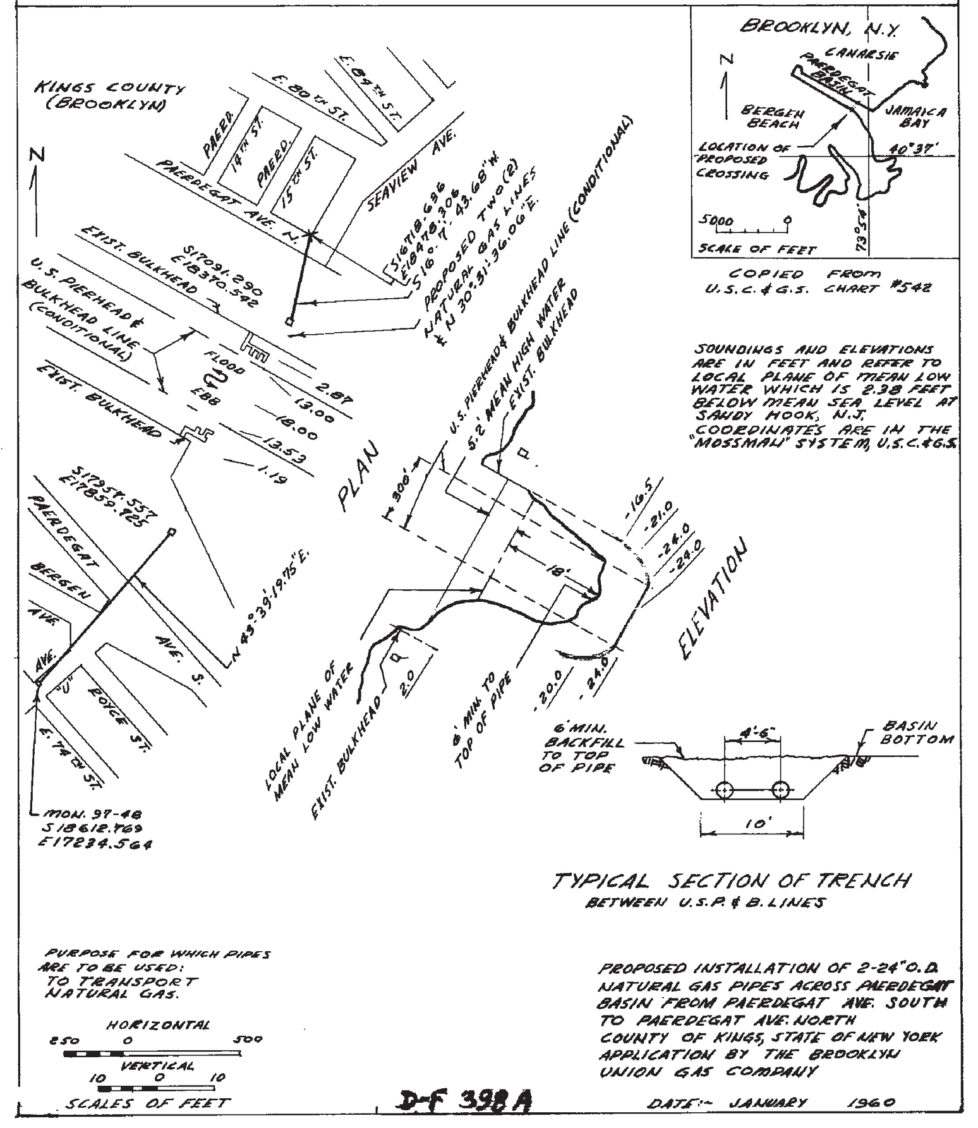


FIGURE 15. RETIRED GAS MAIN INVESTIGATION PROGRESS MAP

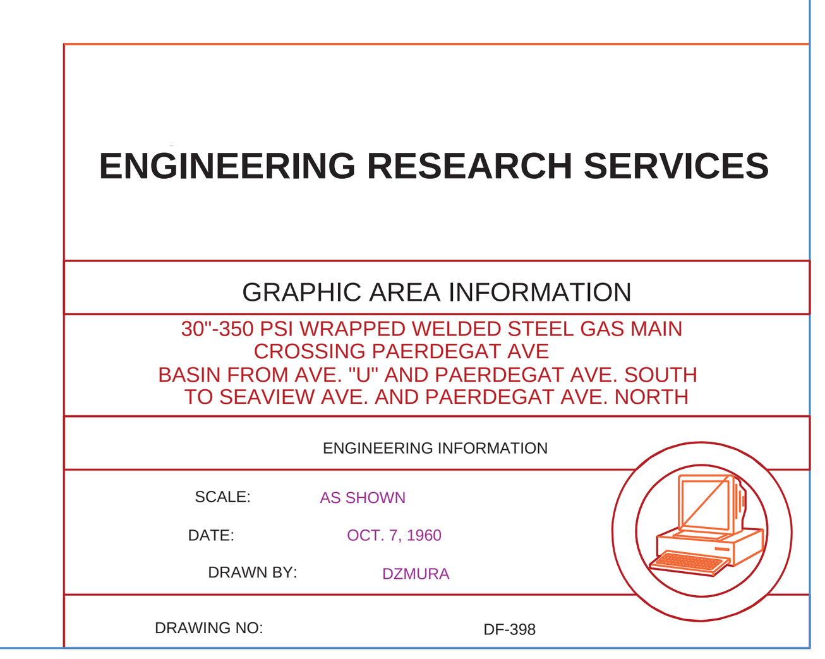


Table 1a. Surface Soil Sampling Results for VOCs

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SS 1		BS 1		BS 2		BS 4		SS-2		SS-3		SS-4		SS-5		SS-6	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		11/24/2014		11/24/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1406033-09		BL1406033-10		BL1406033-11		BL1406033-12		BL1412023-02		BL1412023-01		BL1412024-06		BL1412023-03		BL1412023-04	
Lab Sample ID:			1405K02-009A		1405K02-010A		1405K02-011A		1405K02-012A		1411F86-006A		1411F86-007A		1411F23-004A		1411F86-008A		1411F86-009A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																				
1,1,1-Trichloroethane	680	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,1,2,2-Tetrachloroethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,1,2-Trichloroethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,1-Dichloroethane	270	26,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,1-Dichloroethene	330	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,2-Dichloroethane	20	3,100	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,2-Dichloroethene (total)	190	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
1,2-Dichloropropane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
2-Butanone	120	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
2-Hexanone	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
4-Methyl-2-pentanone	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Acetone	50	100,000	17	U	42	U	16	U	16	U	9	BJ	8	BJ	9	BJ	11	BJ	11	BJ
Benzene	60	4,800	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Bromodichloromethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Bromoform	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Bromomethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Carbon disulfide	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Carbon tetrachloride	760	2,400	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Chlorobenzene	1,100	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Chloroethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Chloroform	370	49,000	17	U	42	U	16	U	16	U	11	U	1	BJZ	1	J	13	U	17	U
Chloromethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
cis-1,3-Dichloropropene	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Dibromochloromethane	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Ethylbenzene	1,000	41,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Methylene chloride	50	100,000	17	U	42	U	16	U	16	U	1	BJ	1	BJ	1	BJ	1	BJ	2	BJ
Styrene	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Tetrachloroethene	1,300	19,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Toluene	700	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
trans-1,3-Dichloropropene	---	---	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Trichloroethene	470	21,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Vinyl chloride	20	900	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U
Xylene (total)	260	100,000	17	U	42	U	16	U	16	U	11	U	11	U	11	U	13	U	17	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
Z - Compound has positive results, and a %D greater than 20% in the CCV on the day of analysis or a %RSD greater than 20% in the initial calibration.

Table 1b. Surface Soil Sampling Results for SVOCs

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SS 1		BS 1		BS 2		BS 4		SS-2 [3]		SS-3 [3]		SS-4		SS-5 [3]		SS-6 [3]	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		11/24/2014		11/24/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1406033-09		BL1406033-10		BL1406033-11		BL1406033-12		BL1412023-02		BL1412023-01		BL1412024-06		BL1412023-03		BL1412023-04	
Lab Sample ID:			1405K02-009B		1405K02-010B		1405K02-011B		1405K02-012B		1411F86-006BRE		1411F86-007BRE		1411F23-004B		1411F86-008BRE		1411F86-009BRE	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semivolatile Organic Compounds (SVOCs)																				
1,2,4-Trichlorobenzene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
1,2-Dichlorobenzene	1,100	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
1,3-Dichlorobenzene	2,400	49,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
1,4-Dichlorobenzene	1,800	13,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,2´-oxybis(1-chloropropane)	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,4,5-Trichlorophenol	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
2,4,6-Trichlorophenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,4-Dichlorophenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,4-Dimethylphenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,4-Dinitrophenol	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
2,4-Dinitrotoluene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2,6-Dinitrotoluene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2-Chloronaphthalene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2-Chlorophenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2-Methylnaphthalene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2-Methylphenol	330	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
2-Nitroaniline	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
2-Nitrophenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
3,3´-Dichlorobenzidine	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
3-Nitroaniline	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
4,6-Dinitro-2-methylphenol	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
4-Bromophenyl-phenylether	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
4-Chloro-3-methylphenol	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
4-Chloroaniline	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
4-Chlorophenyl-phenylether	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
4-Methylphenol	330	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
4-Nitroaniline	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
4-Nitrophenol	---	---	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
Acenaphthene	20,000	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Acenaphthylene	100,000	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Anthracene	100,000	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Benzo(a)anthracene	1,000	1,000	210	J	730	U	110	J	200	J	93	J	120	J	380	U	280	J	210	J
Benzo(a)pyrene	1,000	1,000	210	J	730	U	130	J	200	J	100	J	150	J	380	U	260	J	210	J
Benzo(b)fluoranthene	1,000	1,000	290	J	210	J	180	J	270	J	140	J	180	J	380	U	320	J	220	J
Benzo(g,h,i)perylene	100,000	100,000	140	J	170	J	85	J	130	J	83	J	120	J	380	U	170	J	160	J
Benzo(k)fluoranthene	800	3,900	120	J	730	U	87	J	130	J	120	J	400	U	380	U	220	J	180	J
Bis(2-chloroethoxy)methane	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Bis(2-chloroethyl)ether	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Bis(2-ethylhexyl)phthalate	---	---	140	J	2,800		120	J	130	J	1,300		450		380	U	390	J	160	J
Butyl benzyl phthalate	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Carbazole	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Chrysene	1,000	3,900	240	J	170	J	120	J	200	J	150	J	160	J	380	U	270	J	250	J
Dibenzo(a,h)anthracene	330	330	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Dibenzofuran	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Diethylphthalate	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Dimethylphthalate	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Di-n-butyl phthalate	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Di-n-octyl phthalate	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Fluoranthene	100,000	100,000	280	J	210	J	160	J	260	J	120	J	140	J	380	U	330	J	330	J
Fluorene	30,000	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Hexachlorobenzene	330	1,200	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Hexachlorobutadiene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Hexachlorocyclopentadiene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Hexachloroethane	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Indeno(1,2,3-cd)pyrene	500	500	99	J	730	U	370	U	100	J	84	J	89	J	380	U	170	J	110	J
Isophorone	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Naphthalene	12,000	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Nitrobenzene	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
N-Nitroso-di-n-propylamine	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
N-Nitrosodiphenylamine	---	---	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Pentachlorophenol	800	6,700	970	U	1,800	U	930	U	950	U	1,000	U	1,000	U	960	U	1,100	U	1,100	U
Phenanthrene	100,000	100,000	150	J	730	U	82	J	140	J	410	U	91	J	380	U	150	J	200	J
Phenol	330	100,000	380	U	730	U	370	U	380	U	410	U	400	U	380	U	450	U	450	U
Pyrene	100,000	100,000	540		370		330	J	520		300	J	320	J	380	U	730		620	

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.

Table 1c. Surface Soil Sampling Results for PCBs

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SS 1	BS 1	BS 2	BS 4	SS-2	SS-3	SS-4	SS-5	SS-6
Sample Date:			5/28/2014	5/28/2014	5/28/2014	5/28/2014	11/24/2014	11/24/2014	11/21/2014	11/24/2014	11/24/2014
Client Sample ID:			BL1406033-09	BL1406033-10	BL1406033-11	BL1406033-12	BL1412023-02	BL1412023-01	BL1412024-06	BL1412023-03	BL1412023-04
Lab Sample ID:			1405K02-009b	1405K02-010b	1405K02-011b	1405K02-012b	1411F86-006B	1411F86-007B	1411F23-004B	1411F86-008B	1411F86-009B
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Polychlorinated Biphenyls (PCBs)											
Aroclor 1016	100	1,000	38 UX	73 U	37 U	38 U	41 U	40 U	38 U	45 U	45 U
Aroclor 1221	100	1,000	78 U	150 U	75 U	77 U	83 U	82 U	77 U	91 U	90 U
Aroclor 1232	100	1,000	38 UX	73 U	37 U	38 U	41 U	40 U	38 U	45 U	45 U
Aroclor 1242	100	1,000	**77**	73 U	**42**	38 U	41 U	40 U	38 U	45 U	45 U
Aroclor 1248	100	1,000	38 UX	73 U	37 U	38 U	41 U	40 U	38 U	45 U	45 U
Aroclor 1254	100	1,000	**61**	**49 J**	**45**	**69 P**	**36 J**	**36 J**	38 U	45 U	45 U
Aroclor 1260	100	1,000	**29 J**	73 U	**37 J**	38 U	41 U	40 U	38 U	**47**	45 U
Aroclor 1262	100	1,000	--	--	--	--	41 U	40 U	38 U	45 U	45 U
Aroclor 1268	100	1,000	--	--	--	--	41 U	40 U	38 U	45 U	45 U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Bolded values indicate detected PCB concentrations.
-- = Aroclor not analyzed for.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.
P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 2a. Soil Boring Sampling Results for VOCs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5'		SB-SE 3-3.5' [3]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [2]		SB-NW 1-1.5'		SB-NW 4-4.5'	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001A		1405K02-002ARE		1405K02-003A		1405K02-004A		1405K02-005A		1405K02-006ADL		1405K02-007A		1405K02-008A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																		
1,1,1-Trichloroethane	680	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1,2,2-Tetrachloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1,2-Trichloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1-Dichloroethane	270	26,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,1-Dichloroethene	330	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloroethane	20	3,100	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloroethene (total)	190	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
1,2-Dichloropropane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
2-Butanone	120	100,000	15	U	14	U	14	U	5	J	13	U	62	U	17		9	J
2-Hexanone	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
4-Methyl-2-pentanone	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Acetone	50	100,000	15	U	**170**		14	U	24		13	U	**75**	**DB**	**85**		47	
Benzene	60	4,800	15	U	14	U	14	U	10	J	13	U	62	U	15	U	3	J
Bromodichloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Bromoform	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Bromomethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Carbon disulfide	---	---	15	U	1	J	14	U	11	U	13	U	62	U	5	J	19	U
Carbon tetrachloride	760	2,400	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chlorobenzene	1,100	100,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloroethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloroform	370	49,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Chloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
cis-1,3-Dichloropropene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Dibromochloromethane	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Ethylbenzene	1,000	41,000	15	U	14	U	14	U	10	J	13	U	16	DJ	15	U	19	U
Methylene chloride	50	100,000	2	BJ	14	U	2	BJ	11	U	13	U	62	U	15	U	19	U
Styrene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Tetrachloroethene	1,300	19,000	15	U	16		14	U	11	U	13	U	62	U	15	U	19	U
Toluene	700	100,000	15	U	5	J	14	U	11	U	13	U	62	U	15	U	19	U
trans-1,3-Dichloropropene	---	---	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Trichloroethene	470	21,000	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Vinyl chloride	20	900	15	U	14	U	14	U	11	U	13	U	62	U	15	U	19	U
Xylene (total)	260	100,000	6	J	57		14	U	30		4	J	**290**	**D**	15	U	19	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.

Table 2b. Soil Boring Sampling Results for SVOCs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5'		SB-SE 3-3.5' [2]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [3]		SB-NW 1-1.5' [3]		SB-NW 4-4.5' [2]	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001B		1405K02-002BDL		1405K02-003B		1405K02-004B		1405K02-005B		1405K02-006BRE		1405K02-007BRE		1405K02-008BDL	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semivolatile Organic Compounds (SVOCs)																		
1,2,4-Trichlorobenzene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,2-Dichlorobenzene	1,100	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,3-Dichlorobenzene	2,400	49,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
1,4-Dichlorobenzene	1,800	13,000	420	U	1,700	U	350	U	380	U	370	U	410	U	94	J	2,000	U
2,2´-oxybis(1-chloropropane)	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4,5-Trichlorophenol	---	---	1,100	U	1,700	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
2,4,6-Trichlorophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4-Dichlorophenol	---	---	420	U	1,700	U	350	U	960	U	370	U	410	U	360	U	2,000	U
2,4-Dimethylphenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,4-Dinitrophenol	---	---	1,100	U	1,700	U	890	U	380	U	940	U	1,000	U	910	U	5,100	U
2,4-Dinitrotoluene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2,6-Dinitrotoluene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Chloronaphthalene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Chlorophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Methylnaphthalene	---	---	420	U	8,800	D	350	U	380	U	370	U	860		360	U	2,000	U
2-Methylphenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
2-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
2-Nitrophenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
3,3´-Dichlorobenzidine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
3-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4,6-Dinitro-2-methylphenol	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4-Bromophenyl-phenylether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chloro-3-methylphenol	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chloroaniline	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Chlorophenyl-phenylether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Methylphenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
4-Nitroaniline	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
4-Nitrophenol	---	---	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
Acenaphthene	20,000	100,000	420	U	220	J	350	U	380	U	370	U	250	J	1,400		3,100	D
Acenaphthylene	100,000	100,000	420	U	430	DJ	350	U	380	U	370	U	410	U	110	J	2,000	U
Anthracene	100,000	100,000	110	J	1,700	U	350	U	380	U	94	J	410	U	410		2,500	D
Benzo(a)anthracene	1,000	1,000	430		180	J	350	U	380	U	250	J	160	J	780		**5,600**	D
Benzo(a)pyrene	1,000	1,000	440		200	J	350	U	380	U	230	J	200	J	720		**4,600**	D
Benzo(b)fluoranthene	1,000	1,000	530		380	DJ	350	U	380	U	260	J	230	J	910		**5,600**	D
Benzo(g,h,i)perylene	100,000	100,000	200	J	200	J	350	U	380	U	100	J	110	J	300	J	1,500	DJ
Benzo(k)fluoranthene	800	3,900	330	J	210	J	350	U	380	U	93	J	120	J	490		**3,100**	D
Bis(2-chloroethoxy)methane	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Bis(2-chloroethyl)ether	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Bis(2-ethylhexyl)phthalate	---	---	150	J	3,000	D	350	U	380	U	370	U	590		190	J	2,000	U
Butyl benzyl phthalate	---	---	420	U	450	DJ	350	U	380	U	370	U	410	U	360	U	2,000	U
Carbazole	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	1,100	DJ
Chrysene	1,000	3,900	450		210	J	350	U	380	U	270	J	140	J	710		**5,000**	D
Dibenzo(a,h)anthracene	330	330	420	U	1,700	U	350	U	380	U	370	U	410	U	74	J	**420**	**DJ**
Dibenzofuran	---	---	420	U	430	DJ	350	U	380	U	370	U	410	U	510		860	DJ
Diethylphthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Dimethylphthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Di-n-butyl phthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Di-n-octyl phthalate	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Fluoranthene	100,000	100,000	760		140	J	350	U	380	U	440		100	J	1,900		14,000	D
Fluorene	30,000	100,000	420	U	600	DJ	350	U	380	U	370	U	90	J	230	J	1,700	DJ
Hexachlorobenzene	330	1,200	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachlorobutadiene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachlorocyclopentadiene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Hexachloroethane	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Indeno(1,2,3-cd)pyrene	500	500	180	J	150	J	350	U	380	U	95	J	86	J	250	J	**1,700**	DJ
Isophorone	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Naphthalene	12,000	100,000	100	J	2,000	D	350	U	380	U	370	U	650		120	J	1,000	DJ
Nitrobenzene	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
N-Nitroso-di-n-propylamine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
N-Nitrosodiphenylamine	---	---	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Pentachlorophenol	800	6,700	1,100	U	4,200	U	890	U	960	U	940	U	1,000	U	910	U	5,100	U
Phenanthrene	100,000	100,000	470		480	DJ	350	U	380	U	450		410	U	610		12,000	D
Phenol	330	100,000	420	U	1,700	U	350	U	380	U	370	U	410	U	360	U	2,000	U
Pyrene	100,000	100,000	900		830	DJ	350	U	380	U	560		440		2,000		14,000	D

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.

Table 2c. Soil Boring Sampling Results for PCBs (May 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-SE 1-1.5' [2]		SB-SE 3-3.5' [2]		SB-SW 1-1.5'		SB-SW 4-4.5'		SB-NE 1-1.5'		SB-NE 4-4.5' [2]		SB-NW 1-1.5'		SB-NW 4-4.5'	
Sample Date:			5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014		5/28/2014	
Client Sample ID:			BL1406033-01		BL1406033-02		BL1406033-03		BL1406033-04		BL1406033-05		BL1406033-06		BL1406033-07		BL1406033-08	
Lab Sample ID:			1405K02-001bDL		1405K02-002bDL		1405K02-003b		1405K02-004b		1405K02-005b		1405K02-006bDL		1405K02-007b		1405K02-008b	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1016	100	1,000	2,500	UX	25,000	UX	35	UX	38	U	38	U	8,100	UX	36	UX	51	U
Aroclor 1221	100	1,000	5,100	U	51,000	U	72	U	78	U	76	U	17,000	U	73	U	100	U
Aroclor 1232	100	1,000	2,500	UX	25,000	UX	35	UX	38	U	38	U	8,100	UX	36	UX	51	U
Aroclor 1242	100	1,000	**15,000**	**D**	**140,000**	**D**	**110**		38	U	**45**	**P**	**120,000**	**D**	**290**		51	U
Aroclor 1248	100	1,000	2,500	U	25,000	U	35	UX	38	U	38	U	8,100	U	36	UX	51	U
Aroclor 1254	100	1,000	2,500	U	25,000	U	35	U	38	U	38	U	8,100	U	36	UX	51	U
Aroclor 1260	100	1,000	2,500	U	25,000	U	35	U	38	U	38	U	8,100	U	**130**	**P**	51	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Bolded values indicate detected PCB concentrations.
Shaded values indicate soil sample concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
D - Compound reanalyzed at a secondary dilution factor.
X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.
P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 3a. Soil Boring Sampling Results for VOCs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5'		SB-1 5-5.5'		SB-2 1.5-2'		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]		SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5'		SB-5 5-6' [2]		SB-6 1-1.5'		SB-6 5-5.5'	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014		11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05		BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411F86-002A		1411F86-003A		1411F23-002A		1411F23-003A		1411E60-002A		1411E60-003ADL		1411E60-004A		1411E60-005A		1411F23-005A		1411F23-006ADL		1411F86-004A		1411F86-005A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																										
1,1,1-Trichloroethane	680	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1,2,2-Tetrachloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1,2-Trichloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1-Dichloroethane	270	26,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,1-Dichloroethene	330	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloroethane	20	3,100	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloroethene (total)	190	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
1,2-Dichloropropane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
2-Butanone	120	100,000	10	U	10	U	22		10	U	10	U	11	U	3	J	3	J	12	U	990	U	12	U	9	U
2-Hexanone	---	---	10	U	10	U	14	U	10	U	10	U	11	U	2	J	13	U	12	U	990	U	12	U	9	U
4-Methyl-2-pentanone	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Acetone	50	100,000	4	BJ	7	BJ	**120**	**B**	8	BJ	11	B	**86**	**B**	17	B	18	B	12	U	990	U	7	BJ	9	B
Benzene	60	4,800	10	U	10	U	14	U	10	U	10	U	22		11	U	13	U	12	U	990	U	12	U	9	U
Bromodichloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Bromoform	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Bromomethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Carbon disulfide	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Carbon tetrachloride	760	2,400	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chlorobenzene	1,100	100,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chloroethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Chloroform	370	49,000	1	BJZ	1	BJZ	2	J	1	J	10	U	11	U	11	U	13	U	2	J	990	U	12	U	9	U
Chloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	530	DJ	12	U	9	U
cis-1,3-Dichloropropene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Dibromochloromethane	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Ethylbenzene	1,000	41,000	10	U	10	U	14	U	10	U	10	U	480	D	11	U	13	U	12	U	**7,700**	**D**	12	U	9	U
Methylene chloride	50	100,000	2	BJ	2	BJ	1	BJ	1	BJ	10	U	1	BJ	11	U	3	BJ	12	U	990	U	2	BJ	2	BJ
Styrene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Tetrachloroethene	1,300	19,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Toluene	700	100,000	10	U	10	U	14	U	10	U	10	U	4	J	11	U	13	U	12	U	990	U	12	U	9	U
trans-1,3-Dichloropropene	---	---	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Trichloroethene	470	21,000	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Vinyl chloride	20	900	10	U	10	U	14	U	10	U	10	U	11	U	11	U	13	U	12	U	990	U	12	U	9	U
Xylene (total)	260	100,000	10	U	10	U	14	U	10	U	10	U	**1,800**	**D**	5	J	13	U	12	U	**46,000**	**D**	12	U	9	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/kg = microgram per kilogram
Shaded values indicate soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.
Z - Compound has positive results, and a %D greater than 20% in the CCV on the day of analysis or a %RSD greater than 20% in the initial calibration.

Table 3b. Soil Boring Sampling Results for SVOCs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5' [3]		SB-1 5-5.5'		SB-2 1.5-2' [3]		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]		SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5' [3]		SB-5 5-6'		SB-6 1-1.5' [3]		SB-6 5-5.5'	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014		11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05		BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411F86-002BRE		1411F86-003B		1411F23-002BRE		1411F23-003B		1411E60-002B		1411E60-003BDL		1411E60-004B		1411E60-005B		1411F23-005BRE		1411F23-006B		1411F86-004BRE		1411F86-005B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semivolatile Organic Compounds (SVOCs)																										
1,2,4-Trichlorobenzene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,2-Dichlorobenzene	1,100	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,3-Dichlorobenzene	2,400	49,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
1,4-Dichlorobenzene	1,800	13,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,2´-oxybis(1-chloropropane)	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4,5-Trichlorophenol	---	---	950	U	980	U	940	U	1000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2,4,6-Trichlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dichlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dimethylphenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,4-Dinitrophenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2,4-Dinitrotoluene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2,6-Dinitrotoluene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Chloronaphthalene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Chlorophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Methylnaphthalene	---	---	380	U	390	U	370	U	400	U	360	U	8,800	D	350	U	410	U	380	U	5,400		390	U	360	U
2-Methylphenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
2-Nitroaniline	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
2-Nitrophenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
3,3´-Dichlorobenzidine	---	---	380	U	390	U	370	U	400	U	360	U	99	J	350	U	410	U	380	U	390	U	390	U	360	U
3-Nitroaniline	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4,6-Dinitro-2-methylphenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4-Bromophenyl-phenylether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chloro-3-methylphenol	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chloroaniline	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Chlorophenyl-phenylether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Methylphenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
4-Nitroaniline	---	---	950	U	980	U	940	U	1000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
4-Nitrophenol	---	---	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
Acenaphthene	20,000	100,000	380	U	390	U	370	U	400	U	360	U	330	J	350	U	410	U	380	U	390	U	390	U	360	U
Acenaphthylene	100,000	100,000	380	U	390	U	370	U	400	U	360	U	110	J	350	U	410	U	380	U	390	U	390	U	360	U
Anthracene	100,000	100,000	110	J	390	U	370	U	400	U	87	J	170	J	350	U	410	U	380	U	390	U	390	U	360	U
Benzo(a)anthracene	1,000	1,000	410		390	U	130	J	400	U	180	J	210	J	180	J	410	U	86	J	390	U	390	U	360	U
Benzo(a)pyrene	1,000	1,000	440		390	U	140	J	400	U	180	J	110	J	190	J	410	U	110	J	390	U	390	U	360	U
Benzo(b)fluoranthene	1,000	1,000	550		390	U	190	J	400	U	200	J	170	J	230	J	410	U	150	J	390	U	88	J	360	U
Benzo(g,h,i)perylene	100,000	100,000	250	J	390	U	99	J	400	U	80	J	360	U	93	J	410	U	77	J	390	U	390	U	360	U
Benzo(k)fluoranthene	800	3,900	340	J	390	U	140	J	400	U	150	J	110	J	140	J	410	U	380	U	390	U	390	U	360	U
Bis(2-chloroethoxy)methane	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Bis(2-chloroethyl)ether	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Bis(2-ethylhexyl)phthalate	---	---	92	J	390	U	99	J	400	U	94	J	180	J	350	U	410	U	380	U	390	U	390	U	360	U
Butyl benzyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Carbazole	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Chrysene	1,000	3,900	450		390	U	190	J	400	U	200	J	210	J	200	J	410	U	110	J	390	U	390	U	360	U
Dibenzo(a,h)anthracene	330	330	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Dibenzofuran	---	---	380	U	390	U	370	U	400	U	360	U	350	J	350	U	410	U	380	U	91	J	390	U	360	U
Diethylphthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Dimethylphthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Di-n-butyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Di-n-octyl phthalate	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Fluoranthene	100,000	100,000	620		390	U	220	J	400	U	360		730		280	J	410	U	160	J	390	U	390	U	360	U
Fluorene	30,000	100,000	380	U	390	U	370	U	400	U	360	U	400		350	U	410	U	380	U	110	J	390	U	360	U
Hexachlorobenzene	330	1,200	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachlorobutadiene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachlorocyclopentadiene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Hexachloroethane	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Indeno(1,2,3-cd)pyrene	500	500	250	J	390	U	90	J	400	U	79	J	360	U	94	J	410	U	380	U	390	U	390	U	360	U
Isophorone	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Naphthalene	12,000	100,000	380	U	390	U	370	U	400	U	73	J	5,700		350	U	410	U	380	U	6,100		390	U	360	U
Nitrobenzene	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
N-Nitroso-di-n-propylamine	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
N-Nitrosodiphenylamine	---	---	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Pentachlorophenol	800	6,700	950	U	980	U	940	U	1,000	U	890	U	910	U	890	U	1,000	U	950	U	970	U	980	U	910	U
Phenanthrene	100,000	100,000	320	J	390	U	150	J	400	U	200	J	810		150	J	410	U	86	J	79	J	390	U	360	U
Phenol	330	100,000	380	U	390	U	370	U	400	U	360	U	360	U	350	U	410	U	380	U	390	U	390	U	360	U
Pyrene	100,000	100,000	940		390	U	390		400	U	360		870		290	J	88	J	220	J	390	U	120	J	360	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate background soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.

Table 3c. Soil Boring Sampling Results for PCBs (November 2014)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-1 1-1.5'		SB-1 5-5.5'		SB-2 1.5-2'		SB-2 6-6.5'		SB-3 1-1.5'		SB-3 5-5.5' [2]		SB-4 1-1.5'		SB-4 6-6.5'		SB-5 1-1.5' [2]		SB-5 5-6' [2]		SB-6 1-1.5'		SB-6 5-5.5'	
Sample Date:			11/24/2014		11/24/2014		11/21/2014		11/21/2014		11/20/2014		11/20/2014		11/20/2014		11/20/2014		11/21/2014		11/21/2014		11/24/2014		11/24/2014	
Client Sample ID:			BL1412023-07		BL1412023-08		BL1412024-04		BL1412024-05		BL1412025-04		BL1412025-05		BL1412025-02		BL1412025-03		BL1412024-02		BL1412024-03		BL1412023-05		BL1412023-06	
Lab Sample ID:			1411F86-002B		1411F86-003B		1411F23-002B		1411F23-003B		1411E60-002B		1411E60-003BDL		1411E60-004B		1411E60-005B		1411F23-005BDL		1411F23-006BDL		1411F86-004B		1411F86-005B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)																										
Aroclor 1016	100	1,000	38	UX	39	U	37	UX	40	U	36	U	36	UX	35	U	41	U	38	UX	39	UX	39	U	36	U
Aroclor 1221	100	1,000	76	U	79	U	76	U	82	U	72	U	73	U	72	U	84	U	77	U	78	U	79	U	73	U
Aroclor 1232	100	1,000	38	UX	39	U	37	UX	40	U	36	U	36	UX	35	U	41	U	38	UX	39	UX	39	U	36	U
Aroclor 1242	100	1,000	**140**		39	U	**490**		40	U	36	U	**39,000**	**D**	35	U	41	U	**2,200**	**D**	**38,000**	**D**	39	U	36	U
Aroclor 1248	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U	35	U	41	U	38	U	39	U	39	U	36	U
Aroclor 1254	100	1,000	**100**		39	U	**55**	**P**	40	U	**20**	**PJ**	**4,400**	**D**	35	U	41	U	**180**	**P**	**3,100**	**D**	39	U	36	U
Aroclor 1260	100	1,000	**32**	**PJ**	39	U	37	U	40	U	36	U	**900**	**D**	35	U	41	U	**52**	**P**	**880**	**D**	39	U	36	U
Aroclor 1262	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U	35	U	41	U	38	U	39	U	39	U	36	U
Aroclor 1268	100	1,000	38	U	39	U	37	U	40	U	36	U	36	U	35	U	41	U	38	U	39	U	39	U	36	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Bolded values indicate detected PCB concentrations.

Shaded values indicate background soil sample concentrations exceeding the Part 375 SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 4a. Soil Boring Sampling Results for VOCs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5'		SB-7 5-5.5'		SB-8 1-1.5'		SB-8 5-5.5'		SB-9 1.5-2'		SB-9 5-5.5'		SB-10 2.5-3'		SB-10 5-5.5' [2]		SB-11 1-1.5'		SB-11 5-5.5'		SB-12 1.5-2'		SB-12 5-5.5'	
Sample Date:			6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015	
Client Sample ID:			BL1506125-02		BL1506125-03		BL1506125-04		BL1506125-05		BL1506125-06		BL1506125-07		BL1507033-03		BL1507033-04		BL1507033-05		BL1507033-06		BL1507033-07		BL1507033-08	
Lab Sample ID:			1506F54-002A		1506F54-003A		1506F54-004A		1506F54-005A		1506F54-006A		1506F54-007A		1506F70-002A		1506F70-003ADL		1506F70-004A		1506F70-005A		1506F70-006A		1506F70-007A	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Volatile Organic Compounds (VOCs)																										
1,1,1-Trichloroethane	680	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,1,2,2-Tetrachloroethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,1,2-Trichloroethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,1-Dichloroethane	270	26,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,1-Dichloroethene	330	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,2-Dichloroethane	20	3,100	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,2-Dichloroethene (total)	190	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
1,2-Dichloropropane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
2-Butanone	120	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
2-Hexanone	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
4-Methyl-2-pentanone	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Acetone	50	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Benzene	60	4,800	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Bromodichloromethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Bromoform	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Bromomethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Carbon disulfide	---	---	12	U	2	J	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Carbon tetrachloride	760	2,400	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Chlorobenzene	1,100	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Chloroethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Chloroform	370	49,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Chloromethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
cis-1,3-Dichloropropene	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Dibromochloromethane	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Ethylbenzene	1,000	41,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	62		9	U	8	U	13	U	10	U
Methylene chloride	50	100,000	2	BJ	4	BJ	2	BJ	5	BJ	4	BJ	2	BJ	2	BJ	9	U	1	BJ	2	BJ	2	BJ	2	BJ
Styrene	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Tetrachloroethene	1,300	19,000	12	U	11	U	5	J	10	U	12	U	9	U	2	J	9	U	9	U	8	U	13	U	10	U
Toluene	700	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
trans-1,3-Dichloropropene	---	---	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Trichloroethene	470	21,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Vinyl chloride	20	900	12	U	11	U	12	U	10	U	12	U	9	U	12	U	9	U	9	U	8	U	13	U	10	U
Xylene (total)	260	100,000	12	U	11	U	12	U	10	U	12	U	9	U	12	U	**3,700**	**D**	9	U	2	J	13	U	10	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

Table 4b. Soil Boring Sampling Results for SVOCs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5' [3]		SB-7 5-5.5'		SB-8 1-1.5' [3]		SB-8 5-5.5'		SB-9 1.5-2' [3]		SB-9 5-5.5'		SB-10 2.5-3'		SB-10 5-5.5' [2]		SB-11 1-1.5' [3]		SB-11 5-5.5'		SB-12 1.5-2' [3]		SB-12 5-5.5'	
Sample Date:			6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015	
Client Sample ID:			BL1506125-02		BL1506125-03		BL1506125-04		BL1506125-05		BL1506125-06		BL1506125-07		BL1507033-03		BL1507033-04		BL1507033-05		BL1507033-06		BL1507033-07		BL1507033-08	
Lab Sample ID:			1506F54-002BRE		1506F54-003B		1506F54-004BRE		1506F54-005B		1506F54-006BRE		1506F54-007B		1506F70-002B		1506F70-003BDL		1506F70-004BRE		1506F70-005B		1506F70-006BRE		1506F70-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Semi-volatile Organic Compounds (SVOCs)																										
1,2,4-Trichlorobenzene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,2-Dichlorobenzene	1,100	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,3-Dichlorobenzene	2,400	49,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
1,4-Dichlorobenzene	1,800	13,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,2´-oxybis(1-chloropropane)	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4,5-Trichlorophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2,4,6-Trichlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dichlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dimethylphenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,4-Dinitrophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2,4-Dinitrotoluene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2,6-Dinitrotoluene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Chloronaphthalene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Chlorophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Methylnaphthalene	---	---	190	J	390	U	390	U	390	U	380	U	400	U	390	J	10,000	D	360	U	380	U	110	J	400	U
2-Methylphenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
2-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
2-Nitrophenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
3,3´-Dichlorobenzidine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
3-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4,6-Dinitro-2-methylphenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4-Bromophenyl-phenylether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chloro-3-methylphenol	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chloroaniline	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Chlorophenyl-phenylether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Methylphenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
4-Nitroaniline	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
4-Nitrophenol	---	---	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
Acenaphthene	20,000	100,000	75	J	390	U	390	U	390	U	380	U	400	U	170	J	200	J	360	U	380	U	230	J	400	U
Acenaphthylene	100,000	100,000	370	U	390	U	89	J	390	U	380	U	400	U	400	U	87	J	150	J	380	U	210	J	400	U
Anthracene	100,000	100,000	350	J	390	U	260	J	390	U	380	U	400	U	400	U	380	U	110	J	110	J	680		400	U
Benzo(a)anthracene	1,000	1,000	170	J	390	U	**1,600**		390	U	210	J	400	U	120	J	380	U	410		160	J	760		400	U
Benzo(a)pyrene	1,000	1,000	150	J	390	U	**2,100**		390	U	230	J	400	U	170	J	380	U	460		460		620		400	U
Benzo(b)fluoranthene	1,000	1,000	480		390	U	**3,600**		390	U	440		400	U	200	J	380	U	660		480		**1,700**		400	U
Benzo(g,h,i)perylene	100,000	100,000	370	U	390	U	650		390	U	120	J	400	U	400	U	380	U	180	J	300	J	370	J	400	U
Benzo(k)fluoranthene	800	3,900	120	J	390	U	**1,100**		390	U	120	J	400	U	90	J	380	U	290	J	210	J	500		400	U
Bis(2-chloroethoxy)methane	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Bis(2-chloroethyl)ether	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Bis(2-ethylhexyl)phthalate	---	---	150	JZ	390	U	1,600	Z	390	U	470	Z	400	U	290	JZ	110	JZ	130	JZ	380	U	240	JZ	400	U
Butyl benzyl phthalate	---	---	370	U	390	U	990		390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Carbazole	---	---	370	U	390	U	86	J	390	U	380	U	400	U	400	U	380	U	360	U	88	J	190	J	400	U
Chrysene	1,000	3,900	310	J	390	U	**1,600**		390	U	270	J	400	U	140	J	380	U	430		260	J	970		400	U
Dibenzo(a,h)anthracene	330	330	370	U	390	U	220	J	390	U	380	U	400	U	400	U	380	U	360	U	95	J	98	J	400	U
Dibenzofuran	---	---	360	J	390	U	390	U	390	U	380	U	400	U	400	U	280	J	360	U	380	U	210	J	400	U
Diethylphthalate	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Dimethylphthalate	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Di-n-butyl phthalate	---	---	370	U	390	U	110	J	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Di-n-octyl phthalate	---	---	370	U	390	U	280	JZ	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Fluoranthene	100,000	100,000	800		390	U	2,000		390	U	290	J	400	U	140	J	130	J	550		260	J	1,300		400	U
Fluorene	30,000	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	240	J	360	U	380	U	110	J	400	U
Hexachlorobenzene	330	1,200	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachlorobutadiene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachlorocyclopentadiene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Hexachloroethane	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Indeno(1,2,3-cd)pyrene	500	500	79	J	390	U	**710**		390	U	110	J	400	U	94	J	380	U	180	J	270	J	380		400	U
Isophorone	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Naphthalene	12,000	100,000	350	J	390	U	87	J	390	U	380	U	400	U	190	J	7,300	D	360	U	380	U	300	J	400	U
Nitrobenzene	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
N-Nitroso-di-n-propylamine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
N-Nitrosodiphenylamine	---	---	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Pentachlorophenol	800	6,700	920	U	980	U	990	U	980	U	960	U	990	U	1,000	U	960	U	910	U	960	U	940	U	1,000	U
Phenanthrene	100,000	100,000	950		390	U	550		390	U	150	J	400	U	160	J	400		300	J	280	J	770		400	U
Phenol	330	100,000	370	U	390	U	390	U	390	U	380	U	400	U	400	U	380	U	360	U	380	U	370	U	400	U
Pyrene	100,000	100,000	690		390	U	3,600		390	U	560		400	U	330	J	120	J	1,200		220	J	2,300		400	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
(3) Sample was re-extracted and reanalyzed.
µg/kg = microgram per kilogram
Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.
Z - Analyte had a %D greater than 20% in the daily CCV.

Table 4c. Soil Boring Sampling Results for PCBs (June 2015)

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-7 1-1.5' [2]		SB-7 5-5.5' [2]		SB-8 1-1.5'		SB-8 5-5.5'		SB-9 1.5-2'		SB-9 5-5.5'	
Sample Date:			6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015		6/17/2015	
Client Sample ID:			BL1506125-02		BL1506125-03		BL1506125-04		BL1506125-05		BL1506125-06		BL1506125-07	
Lab Sample ID:			1506F54-002BDL		1506F54-003BDL		1506F54-004B		1506F54-005B		1506F54-006B		1506F54-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	37	UX	39	UX	40	U	39	U	39	UX	40	U
Aroclor 1221	100	1,000	75	UX	80	UX	80	U	79	U	78	U	80	U
Aroclor 1232	100	1,000	37	UX	39	UX	40	U	39	U	39	UX	40	U
Aroclor 1242	100	1,000	**14,000**	**D**	**7,200**	**D**	40	U	39	U	**79**	**P**	40	U
Aroclor 1248	100	1,000	37	UX	39	UX	40	U	39	U	39	U	40	U
Aroclor 1254	100	1,000	37	UX	39	UX	40	U	39	U	39	U	40	U
Aroclor 1260	100	1,000	37	UX	39	UX	**120**		39	U	**40**		40	U
Aroclor 1262	100	1,000	37	U	39	U	37	U	39	U	39	U	40	U
Aroclor 1268	100	1,000	37	U	39	U	37	U	39	U	39	U	40	U

Sample ID:	6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives[1]	6 NYCRR Part 375 Restricted-Residential Use Soil Cleanup Objectives[1]	SB-10 2.5-3' [2]		SB-10 5-5.5'		SB-11 1-1.5'		SB-11 5-5.5'		SB-12 1.5-2'		SB-12 5-5.5'	
Sample Date:			6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015		6/18/2015	
Client Sample ID:			BL1507033-03		BL1507033-04		BL1507033-05		BL1507033-06		BL1507033-07		BL1507033-08	
Lab Sample ID:			1506F70-002BDL		1506F70-003B		1506F70-004B		1506F70-005B		1506F70-006B		1506F70-007B	
Units:	(µg/kg)	(µg/kg)	(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)		(µg/kg)	
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1221	100	1,000	82	UX	77	UX	74	U	78	U	76	U	82	U
Aroclor 1232	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1242	100	1,000	**11,000**	**D**	**23,000**	**D**	36	U	**37**	**PJ**	37	U	40	U
Aroclor 1248	100	1,000	40	UX	38	UX	36	U	38	U	37	U	40	U
Aroclor 1254	100	1,000	40	UX	38	UX	**28**	**J**	38	U	**21**	**J**	40	U
Aroclor 1260	100	1,000	40	UX	38	UX	**63**		38	U	**53**	**P**	40	U
Aroclor 1262	100	1,000	40	U	38	U	36	U	38	U	37	U	40	U
Aroclor 1268	100	1,000	40	U	38	U	36	U	38	U	37	U	40	U

(1) New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use and Restricted-Residential Use Soil Cleanup Objectives (SCOs).

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/kg = microgram per kilogram

Bolded values indicate detected PCB concentrations.

Shaded values indicate concentrations exceeding the Part 375 Unrestricted Use SCOs.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

X - Identifies Aroclors that may be masked by the presence of another positively identified Aroclor.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 5a. Groundwater Sampling Results for VOCs (June 2014)

Sample ID:	NYSDEC Groundwater Effluent Limitations (Class GA)[1]	MW-NE [2]		MW-NW [2]		MW-SE		MW-SW [2]	
Sample Date:		6/5/2014		6/5/2014		6/5/2014		6/5/2014	
Client Sample ID:		BL1406053-02		BL1406053-03		BL1406053-04		BL1406053-05	
Lab Sample ID:		1406448-002ADL		1406448-003ADL		1406448-004A		1406448-005ADL	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	5	40	U	20	U	10	U	40	U
1,1,2,2-Tetrachloroethane	5	40	U	20	U	10	U	40	U
1,1,2-Trichloroethane	1	40	U	20	U	10	U	40	U
1,1-Dichloroethane	5	40	U	20	U	10	U	40	U
1,1-Dichloroethene	5	40	U	20	U	10	U	40	U
1,2-Dichloroethane	0.6	40	U	20	U	10	U	40	U
1,2-Dichloroethene (total)	5	40	U	20	U	10	U	40	U
1,2-Dichloropropane	1	40	U	20	U	10	U	40	U
2-Butanone	50	38	DJ	20	U	10	U	40	U
2-Hexanone	50	40	U	20	U	10	U	40	U
4-Methyl-2-pentanone	---	15	DJ	3	DJ	10	U	40	U
Acetone	50	27	DJ	3	DJ	3	J	40	U
Benzene	1	**420**	**D**	**240**	**D**	10	U	**380**	**D**
Bromodichloromethane	50	40	U	20	U	10	U	40	U
Bromoform	50	40	U	20	U	10	U	40	U
Bromomethane	5	40	U	20	U	10	U	40	U
Carbon disulfide	60	40	U	20	U	10	U	40	U
Carbon tetrachloride	5	40	U	20	U	10	U	40	U
Chlorobenzene	5	40	U	20	U	10	U	40	U
Chloroethane	5	40	U	20	U	10	U	40	U
Chloroform	7	40	U	20	U	10	U	40	U
Chloromethane	5	40	U	20	U	10	U	40	U
cis-1,3-Dichloropropene	0.4	40	U	20	U	10	U	40	U
Dibromochloromethane	50	40	U	20	U	10	U	40	U
Ethylbenzene	5	**26**	DJ	**34**	D	1	J	**130**	D
Methylene chloride	5	40	U	20	U	10	U	40	U
Styrene	930	40	U	20	U	10	U	40	U
Tetrachloroethene	5	40	U	20	U	10	U	40	U
Toluene	5	40	U	20	U	10	U	40	U
trans-1,3-Dichloropropene	0.4	40	U	20	U	10	U	40	U
Trichloroethene	5	40	U	20	U	10	U	40	U
Vinyl chloride	2	40	U	20	U	10	U	40	U
Xylene (total)	5	**83**	D	20	U	**44**		**170**	D

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Groundwater Effluent Limitations (Class GA), June 1998.

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/l = microgram per liter

Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

Table 5b. Groundwater Sampling Results for SVOCs (June 2014)

Sample ID:	NYSDEC Groundwater Effluent Limitations (Class GA)[1]	MW-NE		MW-NW		MW-SE [2]		MW-SW	
Sample Date:		6/5/2014		6/5/2014		6/5/2014		6/5/2014	
Client Sample ID:		BL1406053-02		BL1406053-03		BL1406053-04		BL1406053-05	
Lab Sample ID:		1406448-002B		1406448-003B		1406448-004BDL		1406448-005B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Semivolatile Organic Compounds (SVOCs)									
1,2,4-Trichlorobenzene	5	10	U	10	U	100	U	10	U
1,2-Dichlorobenzene	3	10	U	10	U	100	U	10	U
1,3-Dichlorobenzene	3	10	U	10	U	100	U	10	U
1,4-Dichlorobenzene	3	10	U	10	U	100	U	10	U
2,2´-oxybis(1-chloropropane)	5	10	U	10	U	100	U	10	U
2,4,5-Trichlorophenol	---	25	U	25	U	250	U	25	U
2,4,6-Trichlorophenol	---	10	U	10	U	100	U	10	U
2,4-Dichlorophenol	2	2	J	10	U	100	U	10	U
2,4-Dimethylphenol	2	**14**		10	U	100	U	10	U
2,4-Dinitrophenol	2	25	U	25	U	250	U	25	U
2,4-Dinitrotoluene	5	10	U	10	U	100	U	10	U
2,6-Dinitrotoluene	5	10	U	10	U	100	U	10	U
2-Chloronaphthalene	10	10	U	10	U	100	U	10	U
2-Chlorophenol	---	10	U	10	U	100	U	10	U
2-Methylnaphthalene	---	22		1	J	36	DJ	37	
2-Methylphenol	---	4	J	10	U	100	U	10	U
2-Nitroaniline	5	25	U	25	U	250	U	25	U
2-Nitrophenol	---	10	U	10	U	100	U	10	U
3,3´-Dichlorobenzidine	5	20	U	20	U	100	U	20	U
3-Nitroaniline	5	25	U	25	U	250	U	25	U
4,6-Dinitro-2-methylphenol	---	25	U	25	U	100	U	25	U
4-Bromophenyl-phenylether	---	10	U	10	U	100	U	10	U
4-Chloro-3-methylphenol	---	10	U	10	U	100	U	10	U
4-Chloroaniline	5	10	U	10	U	100	U	10	U
4-Chlorophenyl-phenylether	---	10	U	10	U	100	U	10	U
4-Methylphenol	---	14		10	U	100	U	10	U
4-Nitroaniline	5	25	U	25	U	100	U	25	U
4-Nitrophenol	---	25	U	25	U	250	U	25	U
Acenaphthene	20	10	U	10	U	100	U	10	U
Acenaphthylene	---	10		10	U	100	U	10	U
Anthracene	50	10	U	10	U	100	U	10	U
Benzo(a)anthracene	0.002	10	U	10	U	100	U	10	U
Benzo(a)pyrene	ND	10	U	10	U	100	U	10	U
Benzo(b)fluoranthene	0.002	10	U	10	U	100	U	10	U
Benzo(g,h,i)perylene	---	10	U	10	U	100	U	10	U
Benzo(k)fluoranthene	0.002	10	U	10	U	100	U	10	U
Bis(2-chloroethoxy)methane	5	10	U	10	U	100	U	10	U
Bis(2-chloroethyl)ether	1	10	U	10	U	100	U	10	U
Bis(2-ethylhexyl)phthalate	5	10	U	10	U	100	U	10	U
Butyl benzyl phthalate	50	10	U	10	U	100	U	10	U
Carbazole	---	10	U	10	U	100	U	10	U
Chrysene	0.002	10	U	10	U	100	U	10	U
Dibenzo(a,h)anthracene	---	10	U	10	U	100	U	10	U
Dibenzofuran	---	10	U	10	U	100	U	10	U
Diethylphthalate	50	10	U	10	U	100	U	10	U
Dimethylphthalate	50	10	U	10	U	100	U	10	U
Di-n-butyl phthalate	50	10	U	10	U	100	U	10	U
Di-n-octyl phthalate	50	10	U	10	U	100	U	10	U
Fluoranthene	50	10	U	10	U	100	U	10	U
Fluorene	50	10	U	10	U	100	U	10	U
Hexachlorobenzene	0.04	10	U	10	U	100	U	10	U
Hexachlorobutadiene	0.5	10	U	10	U	100	U	10	U
Hexachlorocyclopentadiene	5	10	U	10	U	100	U	10	U
Hexachloroethane	5	10	U	10	U	100	U	10	U
Indeno(1,2,3-cd)pyrene	0.002	10	U	10	U	100	U	10	U
Isophorone	50	10	U	10	U	100	U	10	U
Naphthalene	10	**52**		**23**		**180**	**D**	**220**	**E**
Nitrobenzene	0.4	10	U	10	U	100	U	10	U
N-Nitroso-di-n-propylamine	---	10	U	10	U	100	U	10	U
N-Nitrosodiphenylamine	50	10	U	10	U	100	U	10	U
Pentachlorophenol	2	25	U	25	U	100	U	25	U
Phenanthrene	50	10	U	10	U	100	U	10	U
Phenol	2	**30**		**4**	**J**	**12**	DJ	**12**	
Pyrene	50	10	U	10	U	100	U	10	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Groundwater Effluent Limitations (Class GA), June 1998.

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/l = microgram per liter

ND = Not detectable by the approved analytical methods referenced in 6 NYCRR Part 700.

Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

D - Compound reanalyzed at a secondary dilution factor.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis

Table 5c. Groundwater Sampling Results for PCBs (June 2014)

Sample ID:	NYSDEC Groundwater Effluent Limitations (Class GA)[1]	MW-NE		MW-NW		MW-SE [2]		MW-SW	
Sample Date:		6/5/2014		6/5/2014		6/5/2014		6/5/2014	
Client Sample ID:		BL1406053-02		BL1406053-03		BL1406053-04		BL1406053-05	
Lab Sample ID:		1406448-002B		1406448-003B		1406448-004BDL		1406448-005B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)									
Aroclor 1016	0.09	1.0	UX	1.0	U	10	UX	1.0	U
Aroclor 1221	0.09	2.0	U	2.0	U	20	U	2.0	U
Aroclor 1232	0.09	1.0	UX	1.0	U	10	UX	1.0	U
Aroclor 1242	0.09	**13.0**		1.0	U	**40**	**D**	**1.3**	**P**
Aroclor 1248	0.09	1.0	U	1.0	U	10	U	1.0	U
Aroclor 1254	0.09	1.0	U	1.0	U	10	U	1.0	U
Aroclor 1260	0.09	1.0	U	1.0	U	10	U	1.0	U
Aroclor 1262	0.09	1.0	U	1.0	U	10	U	1.0	U
Aroclor 1268	0.09	1.0	U	1.0	U	10	U	1.0	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Groundwater Effluent Limitations (Class GA), June 1998.

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/l = microgram per liter

Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

D - Compound reanalyzed at a secondary dilution factor.

X - Other specific flags may be required to properly define the results.

P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 6a. Groundwater Sampling Results for VOCs (November - December 2014)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		SB-1 GW		SB-2 GW		MW-SB3 [2]		SB-4 GW		MW-SB5 [2]		SB-6 GW	
Sample Date:		12/3/2014		12/3/2014		12/3/2014		12/3/2014		11/24/2014		11/24/2014		12/3/2014		11/21/2014		12/3/2014		11/24/2014	
Lab Sample ID:		1412286-001A		1412286-002A		1412286-005A		1412286-006A		1411F94-002A		1411F94-003A		1412286-003ADL		1411F74-002A		1412286-004ADL		1411F94-004A	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)																					
1,1,1-Trichloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	1	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	0.6	10	U	10	U	10	U	10	U	10	U	10	U	**11**	**Z**	10	U	10	U	10	U
1,2-Dichloroethene (total)	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane	1	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	50	4	J	10	U	10	U	10	U	10	U	1	J	10	U	3	J	15		10	U
2-Hexanone	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	15		10	U
4-Methyl-2-pentanone	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	50	14	BZ	10	U	10	U	10	U	13	Z	10	Z	1	BJZ	23	Z	**52**	**BZ**	10	Z
Benzene	1	**14**		**4**	**J**	10	U	1	J	10	U	10	U	**370**	**D**	10	U	**41**		10	U
Bromodichloromethane	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromoform	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon disulfide	60	10	U	10	U	10	U	10	U	10	U	10	U	20		10	U	10	U	10	U
Carbon tetrachloride	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	7	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloromethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	0.4	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	5	3	J	3	J	1	J	10	U	10	U	10	U	**350**	**D**	10	U	**87**		10	U
Methylene chloride	5	10	U	10	U	10	U	10	U	2	J	2	J	10	U	1	J	10	U	2	J
Styrene	930	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	3	J	10	U
Tetrachloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Toluene	5	10	U	10	U	10	U	10	U	10	U	10	U	3	J	3	J	2	J	10	U
trans-1,3-Dichloropropene	0.4	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl chloride	2	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Xylene (total)	5	**14**		3	J	**11**		2	J	10	U	10	U	**1,300**	**D**	10	U	**750**	**D**	10	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.

(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.

µg/l = microgram per liter

Bolded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

D - Compound reanalyzed at a secondary dilution factor.

Z - Compound has positive results, and a %D greater than 20% in the CCV on the day of analysis or a %RSD greater than 20% in the initial calibration.

Table 6b. Groundwater Sampling Results for SVOCs (November - December 2014)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		SB-1 GW		SB-2 GW		MW-SB3 [2]		SB-4 GW		MW-SB5		SB-6 GW	
Sample Date:		12/3/2014		12/3/2014		12/3/2014		12/3/2014		11/24/2014		11/24/2014		12/3/2014		11/21/2014		12/3/2014		11/24/2014	
Lab Sample ID:		1412286-001B		1412286-002B		1412286-005B		1412286-006B		1411F94-002B		1411F94-003B		1412286-003B		1411F74-002B		1412286-004B		1411F94-004B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Semivolatile Organic Compounds (SVOCs)																					
1,2,4-Trichlorobenzene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	3	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	3	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	3	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,2´-oxybis(1-chloropropane)	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4,5-Trichlorophenol	---	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
2,4,6-Trichlorophenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dichlorophenol	2	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dimethylphenol	2	10	U	10	U	10	U	10	U	10	U	10	U	**15**		10	U	**49**		10	U
2,4-Dinitrophenol	2	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
2,4-Dinitrotoluene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,6-Dinitrotoluene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Chloronaphthalene	10	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Chlorophenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Methylnaphthalene	---	15		10	U	12		10	U	10	U	10	U	110	D	10	U	1	J	10	U
2-Methylphenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Nitroaniline	5	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
2-Nitrophenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
3,3´-Dichlorobenzidine	5	20	U	20	U	20	U	20	U	20	U	10	U	20	U	10	U	20	U	10	U
3-Nitroaniline	5	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
4,6-Dinitro-2-methylphenol	---	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
4-Bromophenyl-phenylether	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chloro-3-methylphenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chloroaniline	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chlorophenyl-phenylether	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methylphenol	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	13		10	U
4-Nitroaniline	5	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
4-Nitrophenol	---	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
Acenaphthene	20	10	U	10	U	10	U	10	U	10	U	10	U	10	U	1	J	10	U	10	U
Acenaphthylene	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Anthracene	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)anthracene	0.002	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)pyrene	ND	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(b)fluoranthene	0.002	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(g,h,i)perylene	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(k)fluoranthene	0.002	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bis(2-chloroethoxy)methane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bis(2-chloroethyl)ether	1	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bis(2-ethylhexyl)phthalate	5	1	J	10	U	10	U	1	J	10	U	10	U	10	U	10	U	10	U	10	U
Butyl benzyl phthalate	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbazole	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	2	J	10	U	10	U
Chrysene	0.002	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibenzo(a,h)anthracene	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibenzofuran	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Diethylphthalate	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dimethylphthalate	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Di-n-butyl phthalate	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Di-n-octyl phthalate	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Fluoranthene	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Fluorene	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorobenzene	0.04	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorobutadiene	0.5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorocyclopentadiene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	0.002	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Isophorone	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Naphthalene	10	**14**		7	J	**20**		10	U	10	U	10	U	**440**	**D**	10	U	**18**		10	U
Nitrobenzene	0.4	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
N-Nitroso-di-n-propylamine	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
N-Nitrosodiphenylamine	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Pentachlorophenol	2	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
Phenanthrene	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Phenol	2	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	**8**	**J**	10	U
Pyrene	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
ND = Not detectable by the approved analytical methods referenced in 6 NYCRR Part 700.
µg/l = microgram per liter
Bolded values indicate groundwater sample concentrations exceeding the Class GA limitations.
Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.

Table 6c. Groundwater Sampling Results for PCBs (November - December 2014)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE [2]		MW-NW		MW-SE		MW-SW		SB-1 GW		SB-2 GW		MW-SB3 [2]		SB-4 GW		MW-SB5		SB-6 GW	
Sample Date:		12/3/2014		12/3/2014		12/3/2014		12/3/2014		11/24/2014		11/24/2014		12/3/2014		11/21/2014		12/3/2014		11/24/2014	
Lab Sample ID:		1412286-001B		1412286-002B		1412286-005B		1412286-006B		1411F94-002B		1411F94-003B		1412286-003BDL		1411F74-002B		1412286-004B		1411F94-004B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)																					
Aroclor 1016	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1221	0.09	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Aroclor 1232	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1242	0.09	**18.0**	**D**	1.0	U	**5.7**	**P**	1.0	U	1.0	U	1.0	U	**20.0**	**D**	1.0	U	**14.0**	**P**	1.0	U
Aroclor 1248	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1254	0.09	**2.4**		1.0	U	**0.56**	**PJ**	1.0	U	1.0	U	1.0	U	**2.3**		1.0	U	**1.2**		1.0	U
Aroclor 1260	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1262	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1268	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/l = microgram per liter
Shaded values indicate concentrations exceeding the Class GA Groundwater Limits.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
D - Compound reanalyzed at a secondary dilution factor.
P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 7a. Groundwater Sampling Results for VOCs (June - July 2015)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3[2]		MW-4		MW-5[2]		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		7/2/2015		6/30/2015		7/1/2015		7/2/2015		6/30/2015		6/30/2015		7/1/2015		7/1/2015		7/2/2015		7/1/2015		7/1/2015		7/1/2015		7/2/2015		7/2/2015		6/30/2015	
Lab Sample ID:		1507206-004A		1506O38-004A		1507072-007A		1507206-005A		1506O38-001A		1506O38-002A		1507072-002ADL		1507072-003A		1507206-001ADL		1507072-004A		1507072-005A		1507072-006A		1507206-002A		1507206-003A		1506O38-003A	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)																															
1,1,1-Trichloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	1	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	0.6	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane	1	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	50	9	J	3	JZ	3	JZ	10	U	10	U	1	JZ	3	JZ	1	JZ	16		10	U	1	JZ	10	U	10	U	10	U	10	U
2-Hexanone	50	10	U	3	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone	---	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	50	39		19		2	JB	10	U	3	J	3	J	5	BJ	5	JB	4	J	10	UB	1	JB	10	UB	1	J	10	U	10	U
Benzene	1	**20**		**43**		10	U	1	J	10	U	10	U	**59**		10	U	**23**		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromoform	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon disulfide	60	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon tetrachloride	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	7	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloromethane	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	0.4	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	50	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	5	2	J	**22**		10	U	2	J	10	U	10	U	**280**	**D**	2	J	**150**		10	U	1	J	10	U	**17**		10	U	10	U
Methylene chloride	5	1	BJ	2	J	2	JB	10	U	2	J	3	J	2	BJ	2	JB	10	U	2	JB	2	JB	2	JB	1	BJ	1	BJ	2	BJ
Styrene	930	10	U	10	U	10	U	10	U	10	U	10	U	8	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Toluene	5	2	BJ	3	JZ	2	JBZ	1	BJ	2	JZ	2	JZ	3	BJZ	2	JBZ	3	BJ	2	JBZ	2	JBZ	2	JBZ	2	BJ	1	BJ	2	BJZ
trans-1,3-Dichloropropene	0.4	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	5	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl chloride	2	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Xylene (total)	5	**7**	**J**	**36**		5	J	10	U	10	U	10	U	**930**	**D**	5	J	**650**	**D**	10	U	4	J	10	U	**74**		10	U	10	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.
Z - Analyte had a %D greater than 20% in the daily CCV.

Table 7b. Groundwater Sampling Results for SVOCs (June - July 2015)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE	MW-NW [2]	MW-SE	MW-SW	MW-1	MW-2	MW-3[2]	MW-4	MW-5[2]	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12
Sample Date:		7/2/2015	6/30/2015	7/1/2015	7/2/2015	6/30/2015	6/30/2015	7/1/2015	7/1/2015	7/2/2015	7/1/2015	7/1/2015	7/1/2015	7/2/2015	7/2/2015	6/30/2015
Lab Sample ID:		1507206-004B	1506O38-004BDL	1507072-007B	1507206-005B	1506O38-001B	1506O38-002B	1507072-002BDL	1507072-003B	1507206-001BDL	1507072-004B	1507072-005B	1507072-006B	1507206-002B	1507206-003B	1506O38-003B
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Semi-volatile Organic Compounds (SVOCs)																
1,2,4-Trichlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2´-oxybis(1-chloropropane)	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	---	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**3 J**	**6 J**	10 U	10 U	10 U	**3 J**	10 U	10 U
2,4-Dinitrophenol	2	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	---	10 U	10	14	10 U	10 U	10 U	97 DJ	10 U	22	10 U	11	10 U	10 U	10 U	10 U
2-Methylphenol	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3´-Dichlorobenzidine	5	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
3-Methylphenol/4-Methylphenol	---	10 U	10 U	2 J	10 U	10 U	10 U	10 U	6 J	6 J	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	---	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Bromophenyl-phenylether	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	---	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	5 J	**19 BZ**	10 U	10 U	2 BJZ	1 BJZ	**6 BJ**	10 U	1 J	10 U	1 J	10 U	10 U	10 U	**49 BZ**
Butyl benzyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	---	10 U	1 J	10 U	10 U	10 U	10 U	10 U	14	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	---	10 U	10 U	10 U	10 U	10 U	10 U	1 J	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	50	6 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Table 2 Cont'd. Groundwater Samplin	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	10 U	**110 D**	**12**	10 U	10 U	10 U	**430 D**	3 J	**140 D**	10 U	**16**	10 U	1 J	10 U	10 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	---	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	2	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	6 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**6 J**	**17**	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
ND = Not detectable by the approved analytical methods referenced in 6 NYCRR Part 700.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.
Z - Analyte had a %D greater than 20% in the daily CCV.

Table 7c. Groundwater Sampling Results for PCBs (June - July 2015)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE[2]		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3[2]		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		7/2/2015		6/30/2015		7/1/2015		7/2/2015		6/30/2015		6/30/2015		7/1/2015		7/1/2015		7/2/2015		7/1/2015		7/1/2015		7/1/2015		7/2/2015		7/2/2015		6/30/2015	
Lab Sample ID:		1507206-004B		1506O38-004B		1507072-007B		1507206-005B		1506O38-001B		1506O38-002B		1507072-002B		1507072-003B		1507206-001B		1507072-004B		1507072-005B		1507072-006B		1507206-002B		1507206-003B		1506O38-003B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)																															
Aroclor 1016	0.09	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	UX	1.0	U
Aroclor 1221	0.09	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Aroclor 1232	0.09	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	UX	1.0	U
Aroclor 1242	0.09	**19**	**D**	1.0	U	**8.6**		1.0	U	1.0	U	1.0	U	**24**	**D**	1.0	U	**4.1**		1.0	U	**6.1**	**P**	1.0	U	**1.9**		**2.7**		1.0	U
Aroclor 1248	0.09	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1254	0.09	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	UX	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1260	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1262	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Aroclor 1268	0.09	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
D - Compound reanalyzed at a secondary dilution factor.

Table 8a. Groundwater Sampling Results for VOCs (October 2017)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		10/13/2017		10/12/2017		10/13/2017		10/12/2017		10/12/2017		10/12/2017		10/13/2017		10/12/2017		10/13/2017		10/12/2017		10/13/2017		10/13/2017		10/13/2017		10/13/2017		10/12/2017	
Lab Sample ID:		1710083-014A		1710083-002A		1710083-013A		1710083-004A		1710083-003A		1710083-005A		1710083-015A		1710083-006A		1710083-009A		1710083-007A		1710083-010A		1710083-008A		1710083-012A		1710083-011A		1710083-001A	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)																															
1,1,1-Trichloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1,2,2-Tetrachloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1,2-Trichloroethane	1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1-Dichloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1-Dichloroethene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichloroethane	0.6	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichloroethene (total)	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichloropropane	1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
2-Butanone	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Hexanone	50	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Methyl-2-pentanone	---	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Acetone	50	16	B	12	B	0.25	U	7.4	B	9.4	B	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	5.2	B
Benzene	1	**2**	**J**	0.25	U	0.25	U	0.25	U	0.25	U	0.28	J	0.36	J	0.25	U	0.37	J	0.25	U	0.25	U	0.25	U	0.31	J	0.25	U	0.25	U
Bromodichloromethane	50	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromoform	50	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromomethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Carbon disulfide	60	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Carbon tetrachloride	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chlorobenzene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chloroform	7	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.72	J	0.25	U
Chloromethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
cis-1,3-Dichloropropene	0.4	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Dibromochloromethane	50	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Ethylbenzene	5	0.31	J	0.25	U	0.25	U	0.25	U	0.25	U	0.31	J	**14**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	1.1	J	0.25	U	0.25	U
Methylene chloride	5	**7.9**	**B**	**16**	**B**	**7.5**	**B**	**15**	**B**	**14**	**B**	**11**	**B**	0.25	U	**8.7**	**B**	**11**	**B**	**13**	**B**	**10**	**B**	**11**	**B**	**11**	**B**	**11**	**B**	**17**	**B**
Styrene	930	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Tetrachloroethene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Toluene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.94	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
trans-1,3-Dichloropropene	0.4	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Trichloroethene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Vinyl chloride	2	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Xylene (total)	5	1.4	J	0.75	U	0.75	U	0.25	U	0.75	U	2.1	J	**110**		0.75	U	**56**		0.75	U	0.75	U	0.75	U	5	J	0.75	U	0.75	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.

Table 8b. Groundwater Sampling Results for SVOCs (October 2017)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		10/13/2017		10/12/2017		10/13/2017		10/12/2017		10/12/2017		10/12/2017		10/13/2017		10/13/2017		10/13/2017		10/12/2017		10/13/2017		10/13/2017		10/13/2017		10/13/2017		10/12/2017	
Lab Sample ID:		1710083-014B		1710083-002B		1710083-013B		1710083-004B		1710083-003B		1710083-005B		1710083-015B		1710083-006B		1710083-009B		1710083-007B		1710083-010B		1710083-008B		1710083-012B		1710083-011B		1710083-001B	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Semi-volatile Organic Compounds (SVOCs)																															
1,2,4-Trichlorobenzene	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	3	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	3	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	3	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2′-oxybis(1-chloropropane)	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,4,5-Trichlorophenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,4,6-Trichlorophenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,4-Dichlorophenol	2	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,4-Dimethylphenol	2	1	U	1.1	U	1	U	1	U	1	U	1	U	**17**		1	U	**5.9**	**J**	1.1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrophenol	2	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrotoluene	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,6-Dinitrotoluene	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Chloronaphthalene	10	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Chlorophenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Methylnaphthalene	---	12		0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	1.2	J	0.5	U	0.5	U	0.53	U	0.5		0.5	U	0.5	U	0.5	U	0.5	U
2-Methylphenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Nitroaniline	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Nitrophenol	---	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
3,3′-Dichlorobenzidine	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
3-Methylphenol/4-Methylphenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
3-Nitroaniline	5	1	U	1.1	U	1	U	1	U	1	U	1	U	0.5	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
4,6-Dinitro-2-methylphenol	---	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
4-Bromophenyl-phenylether	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Chloro-3-methylphenol	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Chloroaniline	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Chlorophenyl-phenylether	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Nitroaniline	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Nitrophenol	---	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
Acenaphthene	20	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	12		0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Acenaphthylene	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Anthracene	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzo(a)anthracene	0.002	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzo(a)pyrene	ND	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzo(b)fluoranthene	0.002	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzo(g,h,i)perylene	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzo(k)fluoranthene	0.002	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bis(2-chloroethoxy)methane	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bis(2-chloroethyl)ether	1	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bis(2-ethylhexyl)phthalate	5	1.7	J	3.8	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	1.5	J	1	U	1	U	1	U	1	U
Butyl benzyl phthalate	50	1	U	2	J	1	U	1	U	1.1	J	1.1	J	1	U	1	J	1.1	J	1.1	J	1	U	1	U	1	U	1	U	1	U
Carbazole	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chrysene	0.002	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibenzo(a,h)anthracene	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibenzofuran	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.1	J	0.5	U	1.1	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U
Diethylphthalate	50	0.5	U	4.3	J	1.4	BJ	6.8	B	2.5	BJ	15	B	1.3	BJ	9.7	B	27	B	6.5	B	2.1	BJ	1.6	BJ	1.2	BJ	1.9	BJ	2.9	BJ
Dimethylphthalate	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Di-n-butyl phthalate	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.82	J	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Di-n-octyl phthalate	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Fluoranthene	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.9	J	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Fluorene	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.6	J	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobenzene	0.04	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorocyclopentadiene	5	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
Hexachloroethane	5	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Indeno(1,2,3-cd)pyrene	0.002	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isophorone	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	10	**34**		0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	**19**		0.5	U	0.5	U	0.53	U	0.5		0.5	U	0.5	U	0.5	U	0.5	U
Nitrobenzene	0.4	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Nitroso-di-n-propylamine	---	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Nitrosodiphenylamine	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Pentachlorophenol	2	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U	1	U	1	U	1	U	1	U	1	U
Phenanthrene	50	0.54	J	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Phenol	2	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Pyrene	50	0.5	U	0.56	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.1	J	0.5	U	0.53	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.

ND = Not detectable by the approved analytical methods referenced in 6 NYCRR Part 700.

µg/l = microgram per liter

Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value.

B - Analyte is found in the associated blank as well as in the sample.

Table 8c. Groundwater Sampling Results for PCBs (October 2017)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		10/13/2017		10/12/2017		10/13/2017		10/12/2017		10/12/2017		10/12/2017		10/13/2017		10/12/2017		10/13/2017		10/12/2017		10/13/2017		10/13/2017		10/13/2017		10/13/2017		10/12/2017	
Lab Sample ID:		1710083-14C		1710083-002C		1710083-013C		1710083-004C		1710083-003C		1710083-005C		1710083-015C		1710083-006C		1710083-009C		1710083-007C		1710083-010C		1710083-008C		1710083-012C		1710083-011C		1710083-001C	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)																															
Aroclor 1016	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	**0.12**	**B**
Aroclor 1221	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1232	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1242	0.09	**140.00**	**D**	0.056	U	**22.00**	**D**	**0.16**	**P**	**0.47**	**P**	**0.48**		**34.00**	**D**	0.05	U	**32.00**	**D**	**0.18**	**P**	**16.00**	**D**	**0.22**	**P**	**2.50**	**P**	0.05	U	0.05	U
Aroclor 1248	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	**0.64**		0.05	U
Aroclor 1254	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1260	0.09	**4.20**		0.056	U	**0.88**		0.05	U	0.05	U	0.05	U	**0.83**		0.05	U	**0.87**		0.05	U	**1.30**	**P**	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1262	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Aroclor 1268	0.09	0.05	U	0.056	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
D - Compound reanalyzed at a secondary dilution factor.
P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

Table 9a. Groundwater Sampling Results for VOCs (March 2019)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		3/25/2019		3/25/2019		3/22/2019		3/20/2019		3/25/2019		3/22/2019		3/22/2019		3/20/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/25/2019		3/25/2019		3/20/2019	
Lab Sample ID:		1903172-002		1903172-006		1903158-007		1903142-003		1903172-003		1903158-008		1903158-006		1903142-001		1903158-003		1903158-002		1903158-005		1903158-001		1903172-004		1903172-005		1903142-002	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Volatile Organic Compounds (VOCs)																															
1,1,1-Trichloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1,2,2-Tetrachloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1,2-Trichloroethane	1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1-Dichloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1-Dichloroethene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichloroethane	0.6	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichloroethene (total)	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
2-Butanone	50	0.50	U	1.9	J	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
2-Hexanone	50	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
4-Methyl-2-pentanone	---	0.50	U	5.1		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.75	J	0.50	U	0.50	U	0.50	U	0.50	U
Acetone	50	-	-	-	-	5.0	U	5.0	U	-	-	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	-	-	-	-	5.0	U
Benzene	1	0.47	J	0.25	U	0.25	U	0.62	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromodichloromethane	50	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromoform	50	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromomethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.58	BJ	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Carbon disulfide	60	0.25	U	0.54	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Carbon tetrachloride	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chlorobenzene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chloroethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chloroform	7	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	J	0.25	U
Chloromethane	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
cis-1,3-Dichloropropene	0.4	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Dibromochloromethane	50	2.0	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Ethylbenzene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**11**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Methylene chloride	5	0.25	U	0.25	U	5.0	U	5.0	U	0.25	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	0.25	U	0.25	U	5.0	U
Styrene	930	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Tetrachloroethene	5	2.5	U	2.5	U	0.25	U	0.25	U	2.5	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	2.5	U	2.5	U	0.25	U
Toluene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
trans-1,3-Dichloropropene	0.4	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Trichloroethene	5	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Vinyl chloride	2	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Xylene (total)	5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
J - Indicates an estimated value.
B - Analyte is found in the associated blank as well as in the sample.
- : Sample was not analyzed for compound.

Table 9b. Groundwater Sampling Results for PCBs (March 2019)

Sample ID:	NYSDEC TOGS 1.1.1 Class GA Standards[1]	MW-NE		MW-NW		MW-SE		MW-SW		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-10		MW-11		MW-12	
Sample Date:		3/25/2019		3/25/2019		3/22/2019		3/20/2019		3/25/2019		3/22/2019		3/22/2019		3/20/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/25/2019		3/25/2019		3/20/2019	
Lab Sample ID:		1903172-002		1903172-006		1903158-007		1903142-003		1903172-003		1903158-008		1903158-006		1903142-001		1903158-003		1903158-002		1903158-005		1903158-001		1903172-004		1903172-005		1903142-002	
Units:	(µg/l)	(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)		(µg/l)	
Polychlorinated Biphenyls (PCBs)																															
Aroclor 1016	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1221	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1232	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1242	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1248	0.09	**2.9**		0.050	U	**8.0**		0.050	U	**0.87**		**1.1**	**P**	**9.9**	**P**	0.050	U	**7.4**		0.053	U	**2.7**		0.050	U	**2.1**		**0.73**	**P**	0.050	U
Aroclor 1254	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1260	0.09	0.050	U	0.050	U	0.050		0.050	U	0.056	U	0.050	U	0.052		0.050	U	0.053	U	0.053	U	**0.11**		0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1262	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U
Aroclor 1268	0.09	0.050	U	0.050	U	0.050	U	0.050	U	0.056	U	0.050	U	0.052	U	0.050	U	0.053	U	0.053	U	0.052	U	0.050	U	0.050	U	0.050	U	0.050	U

(1) NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA), June 1998.
(2) Sample was diluted and reanalyzed. Original analysis identified a compound whose concentration exceeds the calibration range of the GC/MS instrument for that specific analysis.
µg/l = microgram per liter
Shaded values indicate groundwater sample concentrations exceeding the Class GA limitations.

Qualifiers:
U - Indicates compound was analyzed for but not detected.
P - Lower of two values reported when there is greater than 25% difference for detected concentrations.

APPENDIX B

COMMUNITY AIR MONITORING PLAN (CAMP)

COMMUNITY AIR MONITORING PLAN

PAERDEGAT BASIN GAS CONDENSATE RELEASE
SEAVIEW AVE AND PAERDEGAT AVE N
BROOKLYN, NEW YORK 11236

NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

MAY 25, 2021

Prepared for:

National Grid
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H2M Project No.: NGRD1221

H 2 M architects + engineers

PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

COMMUNITY AIR MONITORING PLAN

MAY 25, 2021

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PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

COMMUNITY AIR MONITORING PLAN

MAY 25, 2021

1.0 INTRODUCTION

1.1 Objective

On behalf of National Grid, H2M architects + engineers (H2M) prepared this Community Air Monitoring Plan (CAMP) to describe the air monitoring activities to be implemented by H2M as part of the Interim Remedial Measure Work Plan (IRM WP) for Operable Unit 2 (OU-2) associated with the Paerdegat Basin Gas Condensate Release (Spill No. 1206391) located near the intersection of Seaview Avenue and Paerdegat Avenue North in Brooklyn, New York. The objective of this CAMP is to monitor and document ambient air quality and odor during remedial activities and ensure no air impacts on the surrounding community. The CAMP addresses the measures of protection for both the on-site and off-site community from potential airborne contaminant releases generated as a result of remediation activities. This CAMP includes air monitoring for particulate matter and organic vapors, sampling for PCBs in air, and ambient air screening for condensate-related odors.

1.2 Site Description and General Site Setting

The Paerdegat Basin Gas Condensate Release site is located in the County of Kings, Brooklyn, New York. The OU-2 portion of the release is situated on the southeastern side of Seaview Avenue, between Paerdegat Avenue North and East 80th Street in the Canarsie section of Brooklyn. A site location map is provided as **Figure 1**. The focus of the IRM remediation on Seaview Avenue is a roughly rectangular area approximately 10-13 feet wide by 115 feet long. The work area approximate latitude is 40°37’35.5” N and the longitude is 73°54’01.6” W.

The general vicinity of OU-2 is primarily comprised of residential, commercial and recreational properties. Seaview Avenue runs in a general northeast-southwest direction. Residential properties are located across Seaview Avenue to the northwest of the release site. To the southwest are Paerdegat Athletic Club and Midget Squadron Yacht Club. Canarsie Park is located to the east and southeast and is comprised of open recreational areas, multiple athletic fields, playgrounds and a skate park. The area is generally flat with little to no relief and is only several feet above mean sea level (msl). A site plan showing the OU-2 remediation work area is provided as **Figure 2**.

1.3 Background

As part of a National Grid natural gas transmission main retirement project, a former standpipe pit was installed along a retired 30-inch gas main on the southeast side of Seaview Avenue near the intersection with Paerdegat Avenue North. During gas line abandonment services on September 27, 2012, cement grout was pumped into the retired gas main from the opposite (south) side of Paerdegat Basin near the Hudson River Yacht Club. As a result of the cement grout filling operation, residual gas condensate within the retired gas line was inadvertently forced through a vent at the former standpipe pit location. Natural gas condensate, that was contaminated primarily with polychlorinated biphenyls (PCBs), select volatile organic compounds (VOCs) and select semi-volatile organic compounds (SVOCs), impacted soils within the former standpipe pit and the surrounding area. This location is considered to be the point of origin of the gas condensate release and the focus of the OU-2 remediation.

The IRM scope of work for the OU-2 site remediation includes the following:

- Removal of contaminated soils within the defined extent of excavation;
- Cleaning and grouting of the retired natural gas main;
- Closure of all site monitoring wells in and around the work zone; and
- Restoration of roadway.

2.0 AIR MONITORING METHODOLOGY

2.1 Monitoring Station Locations

For the duration of remediation activities at the Paerdegat Basin OU-2 site, air quality monitoring will be performed. The monitoring network will be comprised of two (2) fixed monitoring stations positioned at the perimeter of the exclusion zone or work area at upwind and downwind locations as appropriate. A hand-held instrument will also be utilized for source monitoring within the work zone.

The monitoring stations will be positioned based on daily site wind conditions and site activities. Periodically throughout the day, the location of excavation work or the general wind direction may change. The stations will be moved to ensure that downwind air quality is properly monitored. Accordingly, the location of the air monitoring stations will be adjusted to compensate for the change in location of site activity or when a consistent change of approximately 30 minutes duration in wind direction is observed.

An analysis of historical wind data was performed to identify the prevailing wind direction that is likely to be expected during the OU-2 remediation work at Paerdegat Basin in Brooklyn. Climatic wind data for the United States, as compiled by the National Climatic Data Center (NCDC, http://www.ncdc.noaa.gov),

was reviewed. The climatic wind data is reported by the NCDC for the period 1930 through 1996 for many cities across the United States and is summarized on a monthly basis. The prevailing wind direction, mean wind speed and peak gusts are provided. Climatic data recorded at New York JFK Airport in Southern Queens, NY was used to evaluate anticipated wind conditions at Paerdegat Basin considering the proximity and geographical similarities between Brooklyn and Southern Queens. Paerdegat Basin and Southern Queens are both situated on the southern shore of Long Island and are prone to shore wind conditions.

A copy of the NCDC Climatic Wind Data for the United States in tabular form is provided in **Appendix A**. A wind rose analysis summarizing the most recent ten-year period, based on the NCDC data, is also provided in **Appendix A**. A summary of the climatic data for New York JFK Airport is provided in Table 2.1 below.

Table 2.1. Climatic Wind Data for JFK Airport

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wind Speed (mph)	13	13	14	13	12	11	10	10	10	11	12	13
Prevailing Wind Direction	NW	NW	NW	S	S	S	S	S	S	WSW	NW	NW

*Data provided by the National Climatic Data Center, Asheville, NC (http://www.ncdc.noaa.gov).

In Table 2.1, prevailing wind direction indicates the direction from which the wind is blowing. As shown, the prevailing wind direction at Paerdegat Basin is anticipated to vary depending on the month of the year. For example, during the months of November through March, the downwind monitoring station will be positioned to the southeast (SE) of the remediation activities based on a prevailing wind direction from the northwest. Likewise, for April through September, the downwind monitoring station will be positioned north (N) of the work zone based on a prevailing wind direction from the south. In October, the downwind monitoring station will be positioned east-northeast (ENE) of the work zone based on a prevailing wind direction from the west-southwest. However, the monitoring station will be adjusted as necessary based on site activities and current wind conditions during the CAMP implementation, as further discussed below.

2.2 Daily Monitoring Guidelines

At the commencement of each work shift, the H2M field monitor shall conduct a thorough inspection of the work area and calibrate all instrumentation. Air monitoring will be performed continually at the site whenever work is underway. Dust and particulates generated from soil excavation and soil loading will be

monitored in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (Appendix 1A of New York State Department of Environmental Conservation DER-10 Technical Guidance for Site Investigation and Remediation). Total VOCs and odors will also be monitored and screened. Sampling for PCBs in air will also be performed. During non-operational hours, air monitoring will not be performed. Monitoring at additional times may be conducted if deemed appropriate given the site conditions.

Prior to each day's work, the anticipated daily site activity will be evaluated to identify areas of high emission potential, i.e., areas of excavation and soil handling, etc. In addition, a daily wind direction evaluation will be made to identify the current wind direction as described above. This will be accomplished by checking the daily weather forecast for JFK Airport provided by the National Weather Service (https://www.weather.gov/okx/). Once wind direction and areas of high emission potential have been established, the monitoring stations will be positioned and the collection of real-time readings for particulates and total VOCs and PCBs in air sampling, as appropriate, will be initiated. Prior to initiating air monitoring activities, all air monitoring equipment shall be calibrated to ensure the equipment is in proper working condition. Site work will commence only after air monitoring has been initiated at the monitoring stations.

2.3 Air Monitoring Equipment and Calibration

Air monitoring for particulates and total VOCs will be performed to provide sufficient coverage of remedial activities that have the potential to create emissions. As identified in Section 2.1, the monitoring network will be comprised of two (2) fixed monitoring stations and field screening for visual and olfactory observations. The monitoring stations will comprise real-time air monitoring instruments. The specific air monitoring equipment is summarized in Table 2.2 below.

Table 2.2. Air Monitoring Equipment

Analyte	Sampling Equipment	Duration	Comments
Particulates/Dust (PM-10)	TSI 8530 DustTRAK II Aerosol Monitor, or equivalent	Continuously during site activity	Real Time Analysis
Total VOCs	MiniRAE 3000 PID, or equivalent	Continuously during site activity	Real Time Analysis
Total PCBs	Polyurethane Foam Cartridge using a low flow personal sampling pump	Continuously during excavation activity	Laboratory Analysis

The monitoring stations will include a TSI 8530 DustTRAK II Aerosol Monitor, or equivalent, for measuring particulate concentrations and a MiniRAE 3000 Photoionization Detector (PID), or equivalent, for

measuring total VOC concentrations. A portable PID will also be utilized for source monitoring. Action levels and response actions are discussed in Section 3.0. Monitoring the one-minute averages along with the 15-minutes averages will enable a quick response to implement or increase dust suppression actions to minimize the likelihood for a 15-minute average excursion for dust.

To ensure quality measurements from the monitoring instruments, all air monitoring equipment will be calibrated at the start of each work shift and again at the conclusion of the workday. Additionally, a regular calibration schedule will be maintained in accordance with the manufacturer's recommendations for the TSI 8530 DustTRAK II and MiniRAE 3000 PID, or their equivalents. A summary of the calibration schedule and requirements is provided in Table 2.3 below.

Table 2.3. Air Monitoring Equipment Calibration Schedule

Sampling Equipment	Calibration Requirements for Specified Equipment
TSI 8535 DustTRAK II Aerosol Monitor	Factory Service: Once per year. General Calibration (zero air): Once per day or more, as needed. Replace Internal Filters: Once per 350 hours at 1,000 µg/m^3 concentration. Clean Nozzle: Once per 350 hours at 1,000 µg/m^3 concentration. Check Flow Rate (1.7 L/min): Once per month. Sampling Pump: Factory calibration and cleaning once every two years.
MiniRAE 3000 PID	Factory Service: Once per year. General Calibration (zero air and calibration gas): Once per day or more, as needed. 10.6 eV Lamp: Clean once every three months for normal use or monthly for heavy use. PID Sensor: Clean sensor pins when cleaning lamp or if inaccurate readings after calibration. Sampling Pump: Factory calibration/cleaning once per year.

There are no methodologies for direct reading of potential PCBs in air. PCB air monitoring will be performed with samples collected on special media and sent to the laboratory for analysis to document any exposure to PCB vapors or PCBs adsorbed onto dust particles.

3.0 AIR QUALITY ACTION LEVELS AND RESPONSES

Action levels for particulate (PM-10) and VOC concentrations will be compared to and responded to in general conformance with the NYSDOH Generic CAMP. A summary of the real-time monitoring alert and action levels is provided in Table 3.1 below. These levels are based on a 15-minute running average of the observed particulate or VOC concentrations. All daily written logs, and one and 15-minute averages that are to be electronically datalogged will be maintained by H2M.

Table 3.1. Real-Time Monitoring Alert and Action Levels

15-Minute Average Concentrations	Alert Level	Action Level	Shutdown
Particulates (PM-10)	50 µg/m^3 above background	100 µg/m^3 above background	150 µg/m^3
Total VOCs	3.75 ppm above background	5 ppm above background	25 ppm
Visible Dust (related to site activities)	Visible dust observed on site.	Visible dust observed moving off site or public complaint.	--

µg/m^3 – micrograms per cubic meter
ppm – parts per million
Background is determined for each 15-minute period using the lowest current on-site concentration.

3.1 Particulate (PM-10) Monitoring

The alert level for particulates in this CAMP is based on the OSHA Permissible Exposure Limit (PEL) for silica dust, which is 50 micrograms per cubic meter (µg/m^3) over an 8-hour time-weighted average (TWA). This alert level is established as a precautionary measure for more attentive particulate monitoring in case the concentrations approach the action threshold.

The initial threshold for particulate action is 100 µg/m^3. If the downwind particulate level is 100 µg/m^3 for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind particulate levels do not exceed 150 µg/m^3 and provided that no visible dust is migrating from the work area.

If dust suppression techniques have been employed and downwind particulate levels are greater than 150 µg/m^3, work must be stopped, and a re-evaluation of activities must be initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind particulate concentration to less than 150 µg/m^3 and in preventing visible dust migration.

3.2 VOC Monitoring

The alert level for VOCs in this CAMP is established as 3.75 parts per million (ppm), or 75% of the initial threshold action level indicated in the NYSDOH Generic CAMP. When this alert level is reached, more attentive VOC monitoring will be performed in case the concentrations approach the action threshold.

The initial threshold for VOC action is 5 ppm. If the ambient air concentration of total VOCs at a downwind monitoring location exceeds 5 ppm for the 15-minute average, work activities must be

temporarily halted and monitoring continued. If the total organic vapor level readily decreases below 5 ppm, work activities can resume with continued monitoring.

If total VOC concentrations at a downwind monitoring location persist at levels in excess of 5 ppm but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After this, work activities can resume provided that the total VOC concentration downwind of the work area is below 5 ppm for the 15-minute average. If the total VOC level is above 25 ppm at the downwind monitoring location, activities will be shut down.

3.3 Odor Screening

Odor screening will be performed utilizing olfactory observations and with a portable PID to identify sources that may impact the local community. The primary odors of concern for this project are related to the natural gas condensate itself which is mostly characterized by odorant (i.e., methyl mercaptan) intentionally added to natural gas. Should offensive odors be detected migrating from the work area, then work activities will be stopped and evaluated to determine the source of the odors. Corrective actions will then be taken to abate the emissions. Work activities can continue provided that odors are no longer detected.

3.4 PCBs in Air Sampling

Monitoring for the presence of PCBs in the air as vapors or adsorbed on particulates will be included as part of this CAMP as requested by the NYSDEC and the NYSDOH. Since this monitoring is specialized, a separate monitoring protocol was developed and submitted to the NYSDEC and NYSDOH for this project. The proposed protocol was approved and is summarized below:

- Sampling for PCBs will be performed and analyzed per EPA Method TO-10A (January 1999).
- Pace Analytical (Con Test Analytical Laboratory) in East Longmeadow, MA will perform analyses.
- Sample collection and field information will be recorded in accordance with Method TO-10A Figure 5 “Field Test Data Sheet (FTDS).”
- Sampling will employ drawing ambient air at the project site through a polyurethane foam (PUF) cartridge from a fixed downwind position adjacent to the CAMP monitoring equipment.
- Sample flow will be performed at approximately 5 liters/minute to roughly filter a total of 1,800 to 2,400 liters of air over a typical 6- to 8-hour workday expected for this project.
- The sampling program will include a background sample to be collected before any field work begins, and one sample to be collected after all work is completed.
- Routine PCB in air samples will be collected each day during excavation between the locations of Soil Boring #5 and Soil Boring #10 at the fixed downwind position.

- A sample will also be collected if any residual liquids are found and pumped (removed) from the 30-inch retired gas main. This sampling will be in the proximity of the exhaust of the tanker truck or other pumping means.

3.5 Notification

The National Grid field supervisor, NYSDEC and NYSDOH, as directed, will be promptly notified whenever any exceedance of the action levels is measured. In addition, the field supervisor will be notified if any condensate odors are detected at levels which could result in residential impacts. The National Grid Project Manager will be notified prior to any modification of the CAMP and of any corrective actions required for CAMP compliance. National Grid will reserve the right, to approve or prohibit future use of proposed/employed corrective actions by the Contractor.

PCB in air analysis and documentation will require sample shipment and analysis at the laboratory. All sample results will be shared with the NYSDEC and the NYSDOH within 24 hours of receipt by the National Grid Project Manager.

3.6 Quality Assurance

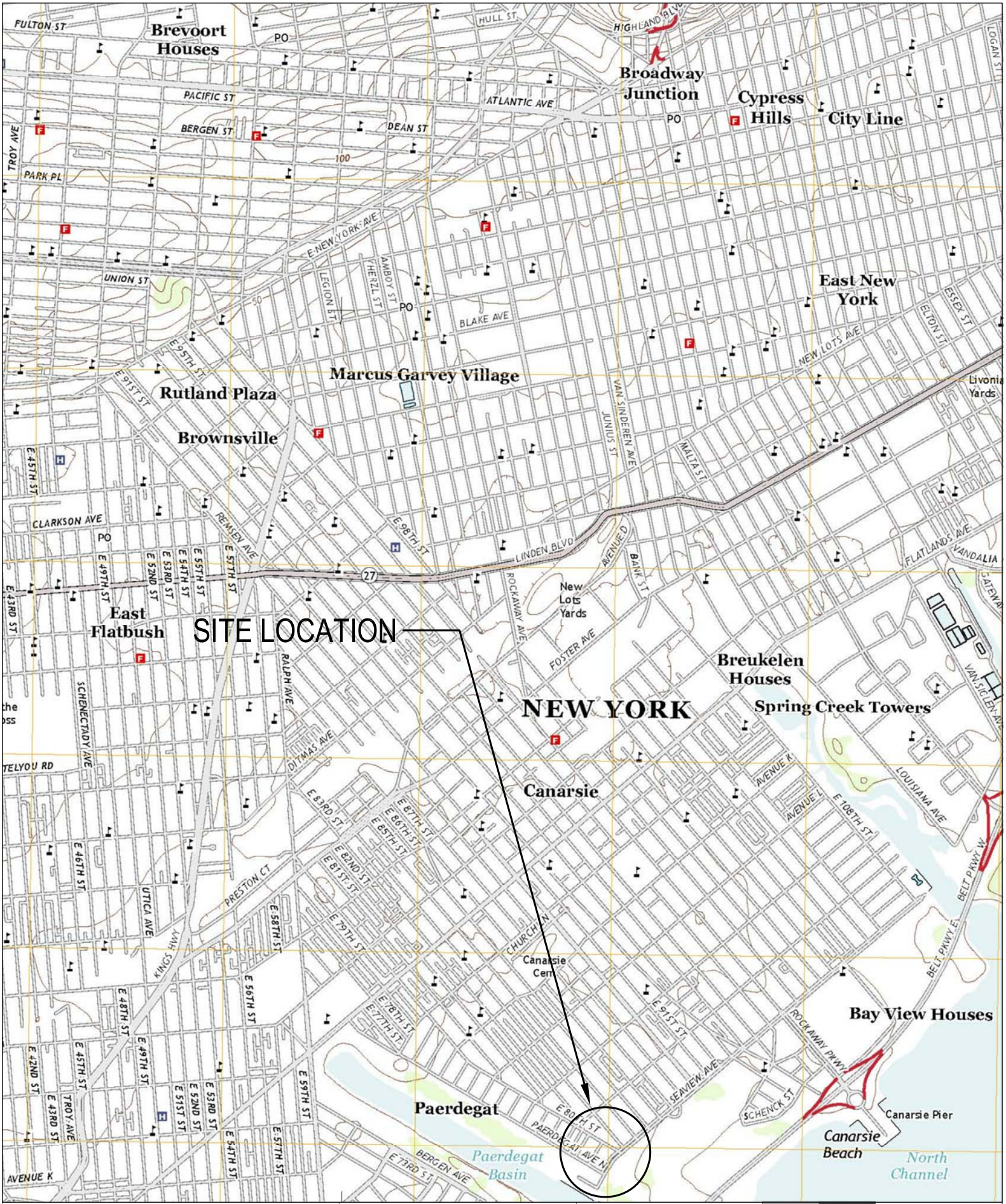
All data from the monitoring equipment, including one and 15-minutes averages of particulate and total VOC concentrations, will be downloaded and saved on a minimum daily basis. Electronic files will be maintained, and copies will be transferred to H2M's computer server. Handwritten daily field reports will also be completed documenting the field calibration of each unit, the background conditions at the start of each day (i.e., temperature, wind direction, precipitation), and positioning of the monitoring stations. The daily field report shall also contain any corrective actions conducted due to elevated real-time air monitoring concentrations, daily site maps showing locations of the monitoring stations and a description of equipment.

To ensure quality measurements from the dust and VOC monitoring equipment, a regular calibration schedule will be maintained, as discussed in Section 2.3. Broken or faulty equipment will be repaired or replaced as soon as possible.

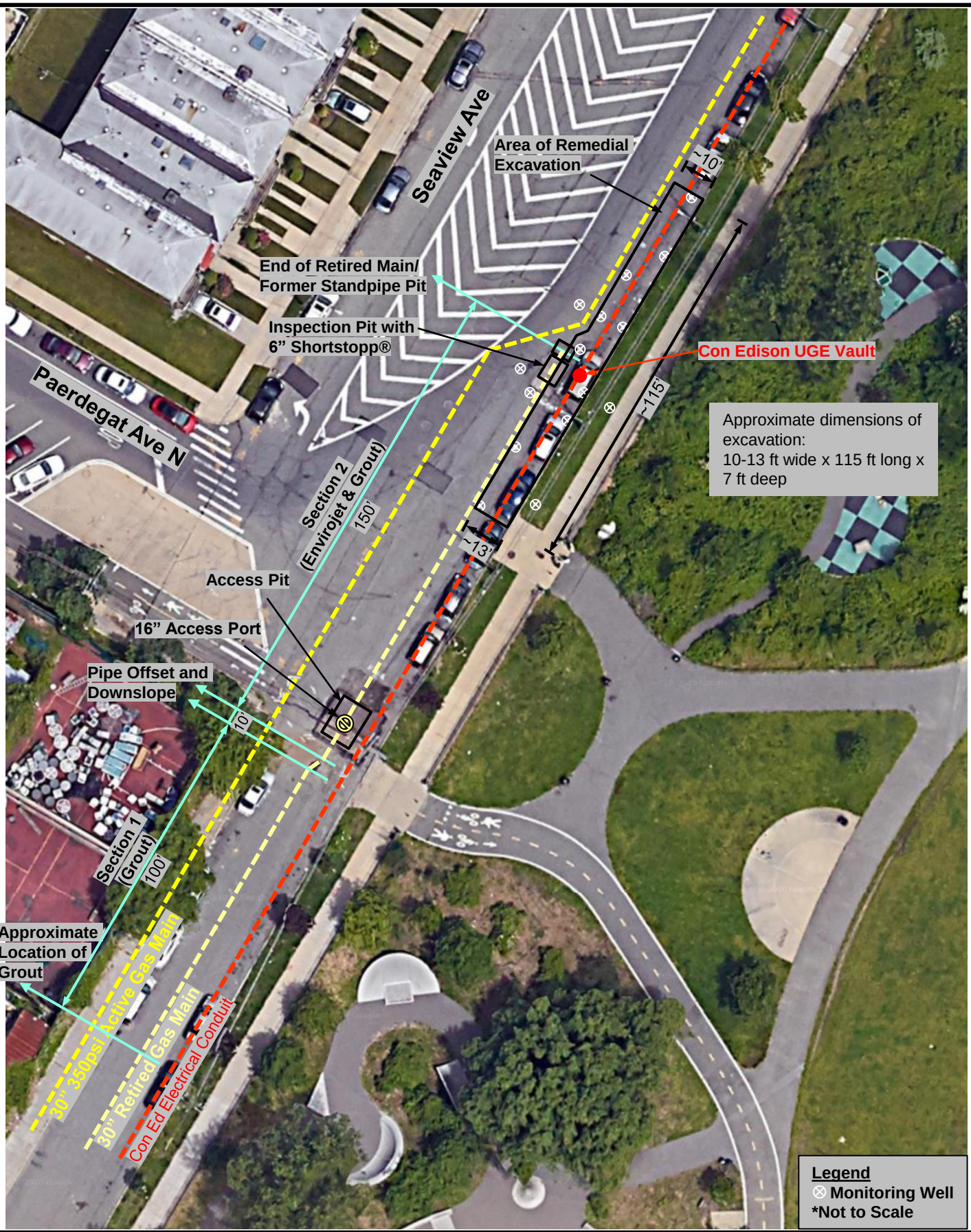
For the PCB in air samples, daily flow calibration of the sampling pump will be performed utilizing a rotameter. In addition, for each sample collected, a second sample (field blank) will also be included for QA/QC purposes. All sample management will be accompanied by proper chain of custody (COC).

4.0 REPORTING

Site observations and notes regarding the daily air monitoring program will be documented in H2M's Daily Field Reports (DFRs). A summary of CAMP findings and exceedances will be reported to the NYSDEC and NYSDOH on a daily basis, or at an agreed upon interval, as appropriate. Following completion of the Paerdegat Basin OU-2 IRM activities, a Construction Completion Report will be prepared. A description of the CAMP monitoring will be included in the Construction Completion Report, and will provide a summary of observed site conditions, particulate, VOC and PCB in air concentrations, notable odor observations and any corrective actions taken as a result of observed exceedances.



CLIENT	FIGURE 1	PROJECT #: NGRD1221	H2M architects + engineers
SITE LOCATION MAP		DATE: NOVEMBER 2020	Melville, NY / New City, NY — Albany, NY / Parsippany, NJ
PAERDEGAT BASIN GAS CONDENSATE RELEASE BROOKLYN, NY	SCALE: 1" = 2750' (N)		



CAMP Figure 2. Site Plan
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

CAMP APPENDIX A

CLIMATIC WIND DATA EXCERPT AND WIND ROSE

NATIONAL CLIMATIC DATA CENTER
151 PATTON AVENUE ROOM 120
ASHEVILLE, NC 28801-5001
(NCDC)

PHONE : (828) 271-4800 **INTERNET** : orders@ncdc.noaa.gov
FACSIMILE : (828) 271-4876 **WEB site** : http://www.ncdc.noaa.gov

November 1998

CLIMATIC WIND DATA FOR THE UNITED STATES

The climatic wind data contained in this summary was extracted from the NCDC's Local Climatological Data publication, Navy & Air Force climatic briefs, and other sources. Locations are not all inclusive and wind data may be available for sites not listed in this summary. The total period of this summary is 1930-1996. The period of record (POR) for which wind data is summarized varies for individual sites and may begin and end at any time during the 1930-1996 period. All available wind data is provided regardless of POR or source. Updated data for many sites can be obtained from post 1996 Local Climatological Data annual publications.
In the table, prevailing wind directions (DIR) are given in compass points; mean wind speeds (SPD) and peak gust (PGU) are in miles per hour (mph). When peak gust (PGU) wind velocities are not available, fastest-mile or 5-second winds may be substituted. This will be indicated by a $ for fastest-mile and # for 5-second winds preceding PGU (ie: $PGU = fastest-mile winds). Wind types may be combined to reflect the highest reported wind. When appropriate wind data is not available, an N/A will appear in lieu of data.
Conversion tables of miles per hour to knots and compass points to degrees are provided at the end of this wind table.

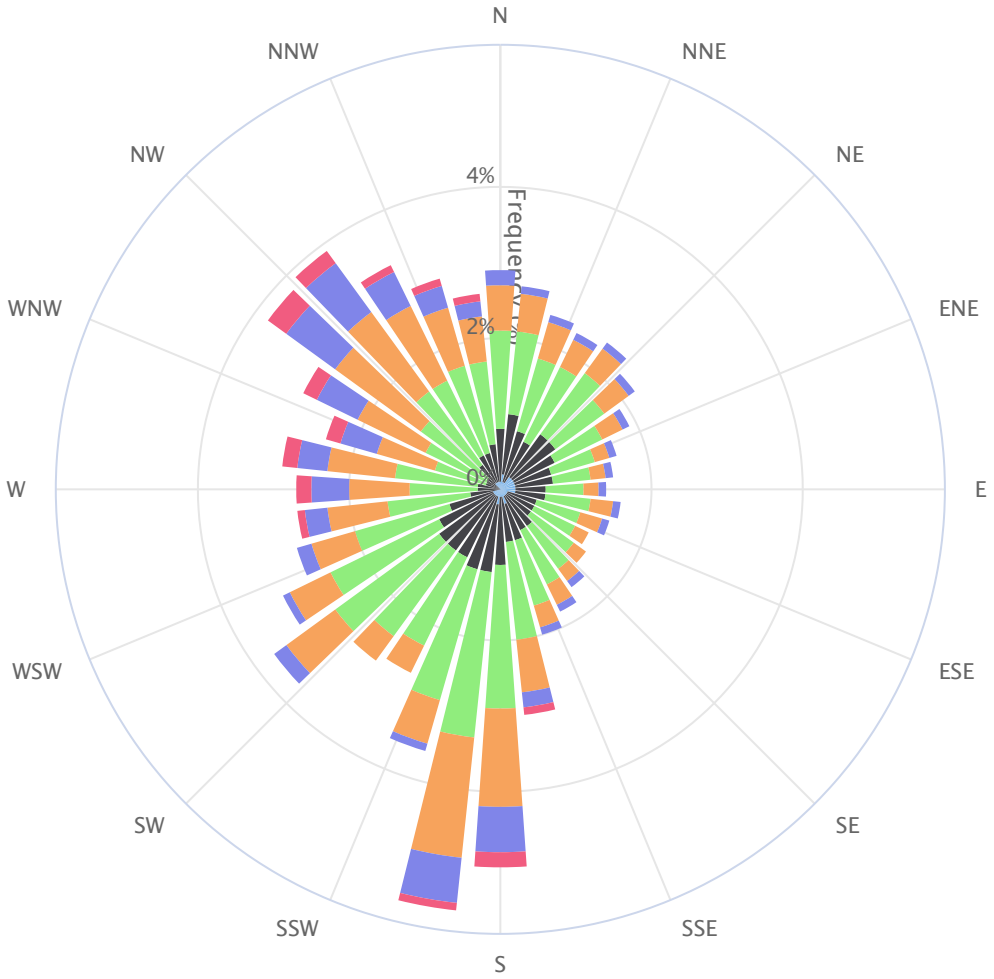
****

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALABAMA														
Birmingham	DIR	N	N	N	N	N	N	N	N	N	S	S	S	N
	SPD	8	9	9	9	7	6	6	6	7	6	7	8	7
	$PGU	49	59	65	56	65	56	57	50	50	43	52	41	65
Huntsville	DIR	ESE	ESE	ESE	N	N	N	ESE	ESE	ESE	S	S	S	ESE
	SPD	9	10	10	9	8	7	6	6	7	7	8	9	8
	#PGU	43	43	40	48	45	56	64	45	46	55	43	48	64
Mobile	DIR	N	N	N	N	SE	SE	SE	SE	S	S	S	S	S
	SPD	10	11	11	10	9	6	7	7	8	8	9	10	9
	#PGU	45	61	55	46	62	60	64	53	60	59	48	43	64
Montgomery	DIR	NW	NW	NW	NW	NW	NW	S	S	S	S	S	S	WNW
	SPD	8	8	8	7	6	6	6	5	6	6	7	7	7
	PGU	43	66	54	60	60	60	55	59	41	73	56	48	73
Ozark/	DIR	NW	N	S	S	S	W	W	E	ENE	E	NNW	NW	E
Ft Rucker	SPD	6	6	7	6	5	3	3	3	3	5	5	6	5
	PGU	46	64	74	61	71	60	58	60	82	48	52	44	82
ALASKA														
Anchorage	DIR	N	N	N	S	SSE	SSE	SSE	SSE	SSE	N	N	N	N
	SPD	6	7	7	7	8	8	7	7	7	7	7	6	7
	PGU	64	61	75	44	43	46	40	44	48	55	55	55	75
Barrow	DIR	ENE	ENE	ENE	ENE	ENE	E	E	E	ENE	ENE	ENE	ENE	ENE
	SPD	12	11	11	12	12	12	12	12	13	13	12	12	12
	PGU	58	74	56	47	41	43	55	47	66	54	53	61	74
Cold Bay	DIR	SSE	SE	SE	NNW	SSE	SSE	SSE	SSE	SSE	NNW	NNW	SSE	SSE
	SPD	18	18	17	17	16	16	16	16	17	17	18	18	17
	PGU	85	83	76	85	72	69	58	81	95	87	75	85	95

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Binghamton	DIR	WNW	WNW	WNW	WNW	NW	SW	SW	SW	S	S	NW	WNW	WNW
	SPD	11	11	11	11	10	9	8	8	9	9	11	11	10
	PGU	51	52	52	52	54	59	74	51	48	46	62	48	74
Buffalo	DIR	W	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	W	W	WSW
	SPD	14	13	13	12	11	11	10	10	10	11	12	13	12
	PGU	71	55	72	74	61	59	53	71	62	61	12	66	74
Islip	DIR	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	SW	SW	SW	WNW
	SPD	10	10	11	11	9	9	8	8	8	9	10	10	9
	PGU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Newburgh/	DIR	W	W	WNW	W	WSW	WSW	WSW	WSW	WSW	W	W	W	W
Stewart AFB	SPD	10	10	12	10	9	8	7	7	7	8	9	10	9
	PGU	71	71	72	63	76	97	79	68	70	86	97	66	97
NY Central	DIR	NW	NW	NW	NW	SW	SW	SW	SW	SW	W	W	NW	NW
Park	SPD	9	9	10	9	7	7	7	6	7	8	7	8	8
	PGU	52	51	63	46	44	41	46	43	52	46	58	64	64
NY JFK	DIR	NW	NW	NW	S	S	S	S	S	S	WSW	NW	NW	S
	SPD	13	13	14	13	12	11	10	10	10	11	12	13	12
	PGU	52	60	61	52	71	49	54	47	58	49	67	60	71
NY LaGuardia	DIR	NW	NW	NW	NW	S	S	S	S	NE	WNW	WNW	NW	NE
	SPD	14	14	14	13	12	11	11	11	11	12	13	14	13
	PGU	59	59	71	63	56	56	49	72	64	64	76	77	77
Niagara	DIR	W	WSW	SW	SW	SW	SW	SW	SW	SW	W	W	W	SW
Falls IAP	SPD	13	12	12	10	9	9	9	8	9	9	12	12	10
	PGU	67	59	69	59	64	48	55	48	44	45	64	52	69
Plattsburgh	DIR	W	WSW	SW	SW	SW	SW	SW	SW	SW	W	W	W	SW
AFB	SPD	13	12	12	10	9	9	9	8	9	9	12	12	10
	PGU	67	59	69	59	64	48	55	48	44	45	64	52	69
Rochester	DIR	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW
	SPD	12	12	12	12	10	9	9	8	9	9	11	11	10
	PGU	63	52	68	67	64	52	51	62	51	56	67	53	68
Rome/	DIR	WNW	WNW	WNW	WNW	WNW	WNW	WNW	ESE	ESE	ESE	WNW	ESE	WNW
Griffiss AFB	SPD	7	7	7	7	6	5	5	3	5	6	7	7	6
	PGU	68	67	76	64	69	84	59	64	69	76	60	56	84
Syracuse	DIR	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WSW
	SPD	11	11	11	11	9	8	8	8	8	9	10	10	9
	#PGU	54	49	49	44	44	39	37	47	44	43	51	46	54
Suffolk Co	DIR	NW	NW	NNW	SW	SW	SW	SW	SW	SW	SW	W	W	SW
AFB	SPD	10	10	10	10	9	9	8	8	9	9	9	9	9
	PGU	58	61	60	58	43	40	44	40	76	48	62	61	76
NORTH CAROLINA														
Asheville	DIR	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW
	SPD	10	10	9	9	7	6	6	6	6	7	8	9	8
	PGU	55	54	64	51	44	52	60	43	37	58	49	49	64
Cape	DIR	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	SW	SW	SW	NNE
Hatteras	SPD	12	12	12	12	11	11	10	10	11	11	12	11	11
	PGU	59	58	63	60	46	55	45	98	87	66	78	60	98
Charlotte	DIR	SW	SW	S	SW	SW	S	SW	S	NE	NE	SW	SW	SW
	SPD	8	8	9	9	8	7	7	7	7	7	7	8	8
	PGU	49	53	60	56	52	52	52	77	87	40	51	47	87

NEW YORK JFK INTL AP (NY) Wind Rose

Dec. 1, 2010 - Dec. 1, 2020
Sub-Interval: Jan. 1 - Dec. 31, 0 - 23



Wind Speed (kts)
- 1.3 - 3.47
- 3.47 - 6.95
- 6.95 - 11.29
- 11.29 - 16.5
- 16.5 - 21.71
- 21.71 - 27.79
- 27.79 - 33.87
- 33.87 - 40.81
- 40.81 -

Click and drag to zoom

APPENDIX C

ENVIRONMENTAL CONSULTANT HEALTH & SAFETY PLAN

HEALTH & SAFETY PLAN (HASP)

NATIONAL GRID GAS CONDENSATE RELEASE
SEAVIEW AVE AND PAERDEGAT AVE N
PAERDEGAT BASIN, CANARSIE
BROOKLYN, NEW YORK 11236

MAY 2021, REV. 4

Prepared for:

National Grid
175 East Old Country Road
Hicksville, New York 11801

Prepared by:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, New York 11747

H2M Project No.: NGRD1221

H 2 M architects + engineers

PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

HEALTH & SAFETY PLAN (HASP)

MAY 2021, REV. 4

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PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

HEALTH & SAFETY PLAN (HASP)

MAY 2021, REV. 4

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PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

HEALTH & SAFETY PLAN (HASP)

MAY 2021, REV. 4

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APPENDICES

PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

HEALTH & SAFETY PLAN (HASP)

MAY 2021, REV. 4

1.0 PURPOSE

The purpose of this Health and Safety Plan (HASP) is to establish the protocol for protecting H2M personnel, as well as H2M's subcontractors, from incidents that may arise while performing field activities at the National Grid gas condensate release site at the intersection of Seaview Avenue and Paerdegat Avenue North in the Canarsie section of Brooklyn, New York (Site). This plan establishes personnel protection standards, mandatory operational procedures, and provides contingencies for situations that may arise while field work is being conducted at the Site. This HASP has been prepared for investigation, remediation and construction activities associated with the natural gas line condensate release. General Site activities include advancing soil borings, installing groundwater monitoring wells, soil and groundwater sampling, wipe sampling, collecting samples from underground electric vaults and conduits owned by Con Edison, soil excavation, excavation backfilling, liquid removal, camera inspection associated with the retired gas main investigation, and retired gas pipe abandonment activities.

All H2M field personnel and H2M's subcontractors will be required to abide by the procedures set forth in this HASP. By following the procedures outlined in this HASP, the possibility that personnel at the Site or the surrounding community will be injured or exposed to Site-related hazards during field activities will be minimized. In accordance with Occupational Safety and Health Administration (OSHA), this HASP shall be made available to any other contractor, subcontractor, OSHA personnel, and to personnel of other federal, state, or local agencies with regulatory authority over the Site, as necessary. Subcontractors and other on-Site personnel must attend and participate in Site safety meetings. Health and safety issues that may arise as a result of any unforeseen Site conditions while the job is in progress may require that this plan be re-evaluated and changed accordingly to assure that the risk to Site workers is minimized. Any changes that require the HASP to be modified shall be considered addenda, and those changes will be made by H2M for National Grid's review. No work may occur that involve proposed changes to the HASP until National Grid considers the addenda acceptable.

Adherence to this HASP will minimize the possibility that personnel at the Site or in the surrounding community will be injured or exposed to Site-related contaminants during field activities. A copy of this HASP will be maintained at the project Site for the duration of the field project.

Personnel performing the environmental field work may potentially encounter contaminated materials resulting in conditions that are potentially unsafe. In addition to the potential risks associated with the physical, chemical, biological and toxicological properties of the material(s) which may be encountered, other types of hazards (i.e., electricity, water, temperature, heavy equipment, falling objects, loss of balance, tripping, etc.) can have an adverse effect on the health and safety of Site personnel. It is important that personal protective equipment (PPE) and safety requirements be appropriate to protect against the potential hazards. PPE will be selected based on the type(s), concentration(s), and route(s) of personnel exposure from hazardous substances at the Site. In situations where the type of materials and possibilities of contact are unknown or the potential hazards are not clearly identifiable, a more subjective (but conservative) determination will be made of the PPE required for initial safety. In addition, a documented Job Briefing will be conducted at the start of each day to identify scope and potential hazards that may be encountered during the workday.

At a minimum, H2M's subcontractors will follow this HASP in addition to their own corporate HASP.

2.0 SITE CONDITIONS AND SCOPE OF WORK

There is a former standpipe pit associated with the retired 30-inch gas main that is located along the southeast side of Seaview Avenue near the intersection with Paerdegat Avenue North. This location is considered to be the point of origin of the gas condensate release. The former standpipe pit was installed as part of a National Grid natural gas transmission main retirement project. During gas line abandonment services on September 27, 2012, cement grout was pumped into the retired gas main from the opposite (south) side of Paerdegat Basin near the Hudson River Yacht Club. The retired natural gas main runs beneath Paerdegat Basin towards the northeast, along the east side of Seaview Avenue, and terminates at the former standpipe pit. As a result of the cement grout filling operation, residual gas condensate within the retired gas line was inadvertently forced through a vent at the former standpipe pit location. Natural gas condensate, that was contaminated primarily with polychlorinated biphenyls (PCBs), select volatile organic compounds (VOCs) and select semi-volatile organic compounds (SVOCs), impacted soils within the former standpipe pit and the surrounding area.

Gas condensate was released onto the roadway (i.e., Seaview Avenue) and was subsequently flushed into a nearby stormwater catch basin by the New York City Fire Department (FDNY). The catch basin ultimately directed the gas condensate to a stormwater outfall that discharges into the adjacent surface water body, Paerdegat Basin. Upon identification of the release, National Grid notified the National Response Center (NRC) and the New York State Department of Environmental Conservation (NYSDEC) among other regulatory agencies. Emergency response activities were conducted under

the direct supervision of the United States Coast Guard (USCG), NYSDEC and New York City Department of Environmental Protection (NYCDEP) and others.

Spill investigation, remediation and closure activities consist of the following: placement of sorbent booms, observing spilled product recovery; delineating the extent of the spill area through soil sampling; installing groundwater monitoring wells; observing the excavation of impacted soils; collecting and submitting soil, water and wipe samples for laboratory analysis; performing camera inspections of the retired gas main; collecting liquid and concrete samples from underground electric vaults and conduits owned by Con Edison within the vicinity of the Site; collecting elevation and distance readings for surveying purposes; observing the removal of product and impacted materials for off-site disposal; observing the decontamination and grouting of the retired gas main; observing the restoration of the impacted areas; and decontaminating any non-dedicated equipment that have been in contact with impacted materials.

3.0 PERSONNEL SAFETY

Personnel involved in field operations must often make complex decisions regarding Site personnel and public safety. To correctly make these decisions requires more than elementary knowledge. For example, selecting the most effective PPE requires not only expertise in the technical areas of respirators, protective clothing, air monitoring, physical stress, etc., but also experience and professional judgment. These individuals are qualified by a combination of professional education, on-the-job experience, specialized training and continual study. Only competent, qualified personnel having the prerequisite technical expertise and sound judgment to evaluate a particular hazard and determine the appropriate safety requirements will perform field investigations at the Site.

3.1 Training and Medical Surveillance

All personnel involved in the Site spill investigation, remediation and dock replacement programs will be trained to carry out their designated field operations. Training will be provided in the use of all equipment, including general safety requirements; safety practices and procedures; hazard recognition and evaluation; and respiratory protection apparatus and protective clothing.

H2M's medical surveillance program consists of baseline medical examinations conducted on newly hired personnel, annually in accordance with the OSHA standards and personnel leaving the firm. The medical program is conducted by a licensed physician, knowledgeable in internal and occupational medicine, and a report of physical fitness of the individual to perform field activities is provided to H2M. The testing and examination include, but is not limited to, blood pressure, spirometry, blood and urine testing for heavy metals, electrocardiogram, a periodic chest X-ray, and a general physical examination.

Each H2M employee and subcontractor performing field services will be provided a copy of this HASP. After receiving the HASP, staff must read the plan and sign the signature page, indicating they have read and understood its contents. The HASP will be verbally reviewed with all personnel on site by H2M and the review will be documented. The HASP Acknowledgment Form is included in **Appendix A**.

3.2 Health and Safety Manager

The Health and Safety Manager shall be responsible for overall implementation and coordination of the Health and Safety Program for field personnel at the Site. Responsibilities include providing adequate staffing, materials, equipment, and time needed to safely accomplish the tasks under the Site spill investigation and remediation, and dock replacement programs. The Health and Safety Manager is also responsible for taking appropriate corrective actions when unsafe acts or practices arise. The Health and Safety Manager for this project is Thomas King, C.I.H., of H2M.

3.3 Site Health and Safety Officers

Kevin Taylor, P.E., P.G., is the Site Health and Safety Officer for this project. The Site Health and Safety Officer advises the field team supervisor(s) on all aspects of health and safety on-Site. Further, the Site Health and Safety Officer has the authority to stop work if any operation threatens workers or public health and safety. Specific responsibilities include:

1. Determine that all personnel protective equipment is available and properly utilized by field personnel at the Site.
2. Assure that all personnel are familiar with standard operating safety procedures and additional instructions contained in the Health and Safety Plan.
3. Assure that all personnel are aware of the hazards associated with the field operations.
4. Conduct and document daily Site safety briefings for field personnel.
5. Inspect and document the Site for hazards before field operations.
6. Determine personal protection levels including clothing and equipment for personnel and periodic inspection of protective clothing and equipment.
7. Monitor of Site conditions prior to initiation of field activities, and at various intervals during on-going operations as deemed necessary for any changes in Site hazard conditions. (Monitoring parameters include, but are not limited to, volatile organic contaminant levels in the atmosphere, chemical hazard information, and weather conditions.)
8. Review equipment decontamination procedures.
9. Prepare reports pertaining to incidents resulting in physical injuries or exposure to hazardous materials.
10. Available through presence on-Site or in contact at all times during Site operations.

Thomas King, C.I.H., and Kevin Taylor, P.E., P.G., may designate another qualified H2M employee as the Site Health and Safety Officer. All designees will be familiar with all aspects of the HASP and their

responsibilities. At all times the Site Health and Safety Officer shall report directly to the Health and Safety Manager.

3.4 Weapons and Firearms Policy

The possession, use or transportation of firearms and other weapons while on the Site premises is prohibited unless specifically authorized. Individuals found in violation of this policy will be removed from the Site premises immediately and, when appropriate, such individuals will be reported to the proper law enforcement agencies.

4.0 MANAGEMENT OF CHANGE

In order to consistently comply with Health and Safety regulations, including those identified prior to project inception as well as any additional requirements which become apparent during the field activities, all H2M personnel and subcontractors will adhere to the following guidelines regarding the management of change. The chain of command previously discussed provides a method of communicating changes in the working conditions or scope that may require modifications to the HASP.

On-Site personnel shall immediately notify the Site Health and Safety Officer and/or Health and Safety Manager if any change in the working conditions or change in the scope of work to be performed could affect adherence to or create additional potential Health and Safety considerations not identified or addressed in the HASP. The Site Health and Safety Officer will then contact and notify the National Grid Authorized Representative of the change. Potential changes in working conditions include the following:

- Adverse weather conditions;
- Site contaminants or hazards not previously identified;
- Physical site hazards such as heavy equipment use;
- Changes to the scope of work;
- Unexpected waste generation.

To ensure compliance with Health and Safety regulations, H2M has prepared contingency plans for the above possibilities.

Adverse weather conditions affect the ability to perform work and can compromise the safety of on-Site personnel. It may be necessary to alter the work schedule to accommodate inclement weather. In addition, should the working environment present more of a health hazard than previously anticipated, the level of personal protective equipment may be increased, as described below. In preparation, all H2M personnel are trained in the use of Level C and D PPE.

If additional Site contaminants or hazards not previously identified are encountered, or changes in scope of work are identified, the Site Health and Safety Officer will assess on-Site personnel to ensure they are adequately trained for dealing with the newly identified contaminant, potential hazard or modified scope of work. Personnel will be replaced, as required, to ensure properly trained personnel are conducting field activities. If unanticipated wastes (i.e., contaminated soils, groundwater or debris) are generated during the Site spill investigation and remediation, and dock replacement programs, the National Grid Authorized Representative will be notified and the wastes will be stored at a National Grid-approved location until the wastes can be characterized and approved for off-Site disposal. Any additional material will be containerized in New York State Department of Transportation (DOT)-approved 55-gallon drums or roll-off containers for off-site disposal. Waste characterization samples will be collected by H2M and will consist of composite samples from the drums. The drums will be transported by a National Grid-approved transporter to a National Grid-approved disposal facility.

During any ground intrusive activities, particulate level and/or volatile organic compound (VOC) monitoring will be performed downwind of the Work Zone, as necessary.

5.0 LEVELS OF PROTECTION

Only properly trained personnel wearing the appropriate PPE will be permitted in the vicinity of Site activities. The purpose of the personal protective clothing and equipment is to minimize exposure to hazards while working on-Site. Careful selection and use of adequate PPE should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing of Site personnel. The level of protection will be selected in accordance with applicable guidance, rules and regulations.

The appropriate level of protection is determined prior to the initial entry on-Site and based on available information and preliminary monitoring data of the Site. Subsequent information may warrant changes in the original level selected and will trigger a management of change evaluation. Appropriate equipment to protect personnel against exposure to known or anticipated chemical hazards has been divided into two categories (i.e., Levels C and D) according to the degree of protection afforded. At present, the conditions at the Site indicate that Level D will be the appropriate protection for use at the Site.

Volatile organic compounds (VOCs) in the air will be continuously monitored, as necessary, utilizing a photoionization detector (PID) and 15-minute time weighted averages (TWA) will be recorded. If the 15-minute TWA for the VOCs exceeds 5 parts per million (ppm), the work will be immediately stopped.

The site conditions will then be further evaluated and if warranted, Level D PPE will be upgraded to Level C.

The following subsections provide a general overview of the various levels of personal protection and their requirements associated with each (Level C and D), that are available for potential use during spill investigation and remediation, and dock replacement operations.

5.1 Level C Protection

Level C protection will be used by all personnel if the conditions outlined in Section 5.1.1 are encountered.

5.1.1 Criteria for Selection

Meeting all of these criteria will facilitate the use of Level C Protection:

a. Measured air concentrations of identified substances will be reduced by the respirator to, at or below the substance's exposure limit, and the concentration is below the assigned protection factor (APF) of the respirator.

b. Atmospheric contaminant concentrations do not exceed Immediately Dangerous to Life or Health (IDLH) levels.

c. Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect the small area of skin left unprotected by chemical-resistant clothing.

d. Job functions have been determined not to require self-contained breathing apparatus (SCBA).

e. Ionizable compound/total volatile organic compound (TVOC) readings register between 5 ppm calibration gas equivalent (cge) and 50 ppm cge above background on instruments. If TVOC levels are greater than half the Permissible Exposure Level (PEL) of the primary contaminants of concern (Section 6.0) respiratory protection shall be required (Level C, B, or A).

f. Air will be monitored for VOCs utilizing a photo ionization detector (PID), as conditions warrant.

g. Cartridges are available and are approved by National Institute for Occupational Safety and Health (NIOSH) for the specific chemical(s) encountered.

5.1.2 Personal Protective Equipment

a. Full-face or half-face, air purifying respirator (NIOSH-approved).

b. Chemical-resistant clothing (coveralls; hooded, two-piece chemical splash suits; chemical-resistant hood and apron; disposable chemical-resistant coveralls).

c. Coveralls.*

d. Gloves, chemical-resistant.

e. Boots, steel toe and shank.

f. Boots cover (outer), chemical-resistant (disposable).

g. Hard hats (non-white) must be worn at all times.

h. Escape mask, as may be required based on Site hazards.

i. Orange Reflective High-visibility vests (United States Department of Transportation [USDOT]-approved)**

j. Metatarsal protection will be worn when jack hammering, saw cutting and pressure washing.

k. Personal Flotation Device (PFD), when working alone near open waters (i.e., on a boat, dock or barge).

* Optional

** Vests must be worn when working in areas exposed to or adjacent to vehicle traffic.

5.1.3 Limiting Criteria

a. Atmospheric concentration of chemicals must not exceed IDLH levels.

b. The atmosphere must contain at least 20.9 percent oxygen.

c. Must have sufficient information available regarding specific compounds, and their concentrations, likely to be encountered.

d. The contaminant concentrations as measured using a photo-ionization detector (PID) do not exceed the APF of the respirator.

5.1.4 Minimum Decontamination Procedures

Station 1: Equipment drop.

Station 2: Outer boot and glove removal.

Station 3: Canister or mask change.

Station 4: Boots, gloves and outer garment removal.

Station 5: Face piece removal.

Station 6: Field wash.

5.2 Level D Protection

5.2.1 Criteria for Selection

Meeting all of these criteria facilitates the use of Level D protection:

a. No hazardous air pollutants have been measured or likely to be encountered.

b. Work functions preclude splashes, immersion, or potential for unexpected inhalation of any chemicals.

c. Extensive information on suspected hazards/risks is known.

5.2.2 Personal Protective Equipment

a. General work clothes or coveralls, long sleeve.
b. Gloves.
c. Boots/shoes, leather or chemical-resistant, steel toe and shank.
d. Boots cover (outer), chemical/resistant (disposable).*
e. Safety glasses or chemical splash goggles when there is a splash hazard.
f. Hard hats (non-white) must be worn at all times. Face shields and safety glasses or goggles must be worn where there is a splash hazard.
g. Hearing protection within all operational areas and when work functions include the potential to generate sound levels in excess of permissible exposure limits.
h. Orange Reflective High-visibility vests (USDOT-approved)**
i. If there is a potential for dermal contact, a Tyvek suit will be worn.
j. Metatarsal protection will be worn when jack hammering, saw cutting and pressure washing.
k. Personal Flotation Device (PFD), when working alone near open waters (i.e., on a dock, boat or barge).

* Optional

** Vests must be worn when working in areas exposed to or adjacent to vehicle traffic.

5.2.3 Limiting Criteria

a. The atmosphere contains at least 20.9 percent oxygen. If oxygen levels drop below 19.5 percent, the decision will be made in the field to evacuate and ventilate or to stop work.
b. VOC concentrations in the breathing zone are below established concentration levels (contaminant and instrument specific criteria).

5.2.4 Minimum Decontamination Procedure

Station 1: Equipment drop.

Station 2: Hand and face wash.

5.3 Duration of Work Period

The anticipated duration of the work period will be established prior to daily activities. The work will only be performed during daylight hours (700 to 1800 hours, weekdays). Other factors that may affect the length of time personnel may work include:

a. Air supply consumption (however, SCBA assisted work - Level A and Level B is not anticipated);
b. Suit/ensemble, air purifying chemical cartridge, permeation and penetration by chemical contaminants;
c. Ambient temperature and weather conditions; and

d. Contractual requirements.

5.3.1 Ambient Temperature

The ambient temperature has a major influence on the duration of work periods as it affects both the worker and the protective integrity of ensembles, as well as the operation and reliability of the monitoring equipment. When ambient temperatures rise or fall to a level potentially hindering personnel performance or becomes a threat to personal safety, consideration shall be given to stop work and recommence work when temperatures or conditions are less severe.

6.0 DETERMINATION OF THE SITE-SPECIFIC LEVEL OF HAZARD AND PROTECTION

Categories of personnel protection required depend on the degree of hazard and probability of exposure by a route of entry into the body. For this Site, the most probable potential route of entry is via inhalation and potentially by dermal adsorption of contaminants encountered during Site activities.

Based upon Site data generated to date, it is anticipated that Level D will be required for Site activities. The determination of Level D protection is based upon field work that will be performed in open, well-ventilated areas and that the potential for accidents and injuries due to obstructions caused by and/or magnified by the use of Level C protection (i.e., slip/trip hazards) is greater than the potential for problems associated with potential exposure from contaminants using Level D protection. Should conditions change, a re-evaluation of PPE will be performed.

The following PPE are required for Level D:

a. General flame resistant work clothes or coveralls. Long sleeve.
b. Gloves. Disposable chemical resistant gloves (neoprene, nitrile, etc.) are required during sampling activities; otherwise, during other activities such as vacuum excavation, leather gloves may be worn due to no chemical hazards.
c. Boots/shoes, leather or chemical-resistant, with protective toe guards. Steel toe and shank.
d. Boots (outer), chemical/resistant (disposable) are optional; and may be worn if Site conditions are wet or muddy.
e. Safety glasses with side shields or chemical splash goggles are required when there is a splash hazard or hazard from flying debris.
f. Hard hats (non-white) must be worn at all times. Face shields, with either safety glasses with side shields or goggles, must be worn where there is a splash hazard.
g. Hearing protection within all operational areas and when work functions include the potential to generate sound levels in excess of permissible exposure limits.
h. Orange Reflective High-visibility vests (USDOT-approved)*
i. When conducting intrusive activities, 1 kilovolt (kV) dielectric gloves (currently tested and stamped with expiration date) with leather protective over gloves will be worn.

j. Personal Flotation Device (PFD), when working alone near open waters (i.e., on a dock, boat or barge).

* Vests must be worn when working in areas exposed to or adjacent to vehicle traffic.

6.1 Chemical Hazards

Gas condensate oil containing PCBs is the primary contaminant of concern that will potentially be encountered in the areas of the Site. Other petroleum products may also be encountered. From a respiratory perspective, PCBs have a very low vapor pressure and are unlikely to be a respiratory hazard. The primary hazard for PCBs is dermal contact and possible ingestion. For other petroleum products, the primary contaminants of concern typically include volatile aromatics (e.g., benzene, toluene, ethyl benzene, and xylenes), semi-volatiles (e.g., naphthalene), hydrogen sulfide and particulates. Since the volatile component of these materials is the primary concern for inhalation exposure and benzene has the most stringent Permissible Exposure Limit (PEL) of those identified, the exposure limit for benzene was used as a guide in establishing the threshold for respiratory levels of protection to be used on-Site. The 8-hour PEL for benzene is identified as 1 ppm (29 CFR 1910.1028). The short term (15-min) PEL for benzene is 5 ppm (29 CFR 1910.1028). The primary VOCs that may be encountered at the Site and their respective exposure limits are provided in the table below.

Compound	OSHA 8-hr PEL (ppm)	OSHA 15-min STEL (ppm)
Benzene	1.0	5.0
Ethyl benzene	100	--
Toluene	100	--
Xylenes	200	200
Chlorodiphenyl (42% chlorine)	1.0 (skin)	--
Chlorodiphenyl (54% chlorine)	0.5 (skin)	--

Since vapor emissions from spill investigation and remediation and dock replacement typically occurs on an intermittent basis in short durations when suspect materials are encountered, the short-term exposure limit (STEL) for benzene of 5 ppm was selected as an action level. If suspect materials are regularly encountered, additional personal air monitoring will be conducted within the worker breathing zone. Any subcontractors have the option of relying on H2M's air monitoring readings or may collect their own.

A chemical hazard assessment for the following activities is described below:

1. Mobilization/demobilization of personnel and equipment.
2. Collection of soil, water and wipe samples.
3. Decontamination of non-dedicated equipment (conducted using Alconox[1]).

Hazard	Monitoring	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)
Inhalation	PID	Adequate ventilation, dust suppression, if necessary	Only trained personnel will be allowed, air monitoring will be conducted in confined areas	None
Dermal	None	Restricted access to impacted areas	Only trained personnel will be allowed	Disposable gloves will be worn. Disposable boot covers will be worn, as necessary.

Note:

1. Alconox cleaner (or similar) will be brought to the site to decontaminate non-dedicated tools and equipment coming into contact with potentially impacted materials. All cleaning fluids will be collected, containerized and properly disposed with all other PCB remediation wastes.

6.2 Fugitive Dust

Fugitive dust can be an issue of concern during work in all areas of the Site. Real-time quantitative measurement of particulate levels in the work area under this program shall be conducted if soil disturbance activities are taking place. If Site activities or weather conditions cause a significant volume of dust to be suspended in the air, work will be suspended and appropriate engineering controls and/or dust suppression measures will be implemented prior to commencing work.

6.3 Physical Hazards

Safeguards to general Site dangers include:

- All utilities will be marked by appropriate authorities prior to intrusive work.
- Hard hats and safety vests shall be worn. White-colored hard hats are not permitted in the work area.
- Personal flotation devices (PFDs) are required to be worn while working near open waters (i.e., on a dock, boat or barge).
- The work area will be clutter-free to minimize trip hazards.
- All contractor tools will be maintained in a safe condition and used properly.
- Only workers who have been trained in the use of a particular tool/equipment may operate that tool/equipment.
- All tools will be inspected prior to use to ensure proper operation and structural integrity.
- All hand tools that are damaged will be removed from the job site until they are repaired.
- Removing any guards from a power tool is prohibited and operating a power tool with any guards removed is prohibited.

- Physical barriers will be provided around the work area.

In addition to exposure to potential chemical hazards, there are also inherent physical hazards associated with conducting Site spill investigation and remediation, and dock replacement activities. Due to the heavy equipment required to conduct the activities, including cranes, excavators/backhoes, vactor/guzzler trucks and vacuum trucks, physical hazards will be present during the Site spill investigation and remediation, and dock replacement programs. Therefore, all personnel must be cognizant of activities surrounding them while working at the Site. Hard hats (non-white) are required to be worn during all field activities. All work must be performed in strict accordance with OSHA and National Grid requirements.

6.4 Electrical Hazards

Due to the nature of the Site location, portable power generation equipment may be required. The following guidelines will be followed during Site activities:

a. National Grid personnel will be informed of all activities and the locations of proposed activities prior to their commencement. In addition, all National Grid Work Permits will be obtained prior to the commencement of any intrusive work activities (if required).
b. All field personnel will be aware of the location and hazard involved with nearby electrical circuits and protective measures taken.
c. All vehicles/equipment operating within the Site area shall be grounded once stopped/placed for operation/used.
d. All subsurface utilities within the Work Zone will be identified, located and cleared of the presence of underground utilities prior to any groundbreaking activities;
e. Lockout/Tagout will be implemented as necessary in accordance with applicable guidances, rules and regulations.

6.5 Underground Utility Clearance

Subsurface utilities may be present at the Site. Not only do these utilities potentially provide preferential pathways for contaminants to migrate, they pose a serious safety concern associated with the performance of intrusive investigation and remediation activities that must be addressed. Therefore, the utility clearance process set forth in National Grid's Environmental Health and Safety Remediation Program document entitled: *Utility Clearance Process for Intrusive Activities,* will be implemented prior to performing any intrusive field activities at the Site.

The key activities that comprise the process are listed below. Additional details are provided in National Grid's *Utility Clearance Process for Intrusive Activities*.

a. Request Code 753 Utility Mark-Out as per the State of New York requirements at least 72 hours prior to the commencement of any intrusive field work;

b. Conduct a Site walk with participation from National Grid Construction Management; contractors (i.e., drillers, excavators, etc.), National Grid facility managers, and private facility managers/property owners. The purpose of the Site walk is to review all planned locations were intrusive activities will be performed, adjust the locations of planned borings away from utilities as marked out (as necessary) and collectively determine the appropriate utility clearance activities that will be performed at each location. All decisions and/or concerns will be documented.

c. Performance of utility clearance activities including any utility clearance actions that are deemed necessary during the Site Walk.

d. If any intrusive activities are being performed within seven (7) feet of a critical utility (e.g. electric feeder, gas transmissions line, fiber optic cables, etc.), or within two feet of other subsurface utilities, those utilities shall first be exposed by manual or vacuum excavation methods.

6.6 Aboveground Utility Clearance

Due to the proximity of the site to overhead utilities, precautions will be taken to ensure safety for on-Site personnel. The following guidelines will be followed during Site activities:

a. All field personnel will be aware of the location and hazard involved with nearby overhead power lines.

b. All vehicles/equipment operating within the Site area shall be grounded once stopped/placed for operation/used.

c. A clearance of 35 feet will be maintained between the electrical lines and all equipment and machinery, during both use and storage.

d. Lockout/Tagout will be implemented as necessary in accordance with applicable guidances, rules and regulations.

e. Any anomalies regarding the overhead power lines (i.e. sparking, new potential hazards) will be reported to National Grid.

6.7 Hearing Conservation

The scope of work at the Site may require the use of heavy machinery, such as vacuum equipment and trucks. In addition to being a physical hazard, this equipment can also pose a noise hazard that can lead to hearing loss, as well as prevent on-Site personnel from being able to hear Site alarms and communication devices, such as wireless phones and radios. Excessive noise is also a nuisance to the surrounding community and efforts will be taken to minimize unnecessary noise. In order to conserve hearing and minimize noise hazards, the following guidelines will be followed during Site activities:

a. When possible, quieter equipment will be utilized;

b. Workers will be rotated to minimize the length of exposure to high noise activities;

c. OSHA-approved PPE will be worn to mitigate the amount of noise exposure (i.e., ear plugs and muffs).

d. If sound levels are above 75 decibel A (dB[A]) hearing protection will be used.

All work will be conducted in accordance with applicable guidance, rules and regulations.

6.8 Bloodborne Pathogens Exposure Control Plan

The purpose of the Bloodborne Pathogens Exposure Control Plan is to minimize the occupational risk of exposure to bloodborne pathogens and to maintain a safe working environment. If an injury does occur, PPE will be used to minimize exposure (i.e. gloves and safety glasses) to bloodborne pathogens. In addition, a first aid kit will be provided to H2M staff for field activities.

6.9 Confined Space

Confined space is defined as any space (i.e. piece of equipment, sump, tank, tanker, rail car, sewer, vault, pit, etc.) that is entered through a restricted opening and has poor natural ventilation with a potential for having within it, hazardous air contaminants or a lack of oxygen or any other serious safety or health hazard. Exit in an emergency could be difficult. This may be summarized as follows:

- Limited means of entry or exit (limited by configuration, location, size, number, etc.).
- Poor natural ventilation that could contain, retain or produce oxygen deficient, flammable, or toxic atmosphere.
- Not intended for continuous worker occupancy.
- More than four feet deep (trench).

As part of the spill investigation work, H2M may need to access manholes and/or underground vaults under the direction of National Grid. Manholes and vaults, or any other type of confined space, will be opened by National Grid or the owning utility, and H2M will observe and conduct investigative activities from the above grade area. Only if deemed necessary, only H2M personnel who are trained and certified in confined space entry shall enter a confined space and must follow the safety protocols outlined below. If a manhole cover has been removed from ANY type of manhole, a manhole cage (guard rail on three sides with chains on the fourth) must be immediately set up about the opening.

Confined spaces may only be entered by contractors or agents when the following conditions are met:

1. Training – The foreman must have current training on confined space entry and rescue techniques. Participating workers must have been trained as either an Attendant or an Entrant. If petroleum tank entry or excavation of petroleum contaminated material or other hazardous waste is required, all employees must also have completed 40-hour OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training.
2. Cardiopulmonary resuscitation (CPR) / First aid – A minimum of two subcontractors working for H2M within the operation must maintain current (within a year), valid CPR/first aid training. One of these individuals must remain outside of the confined space at all times.
3. Monitoring – Appropriate monitoring equipment must be available for continuous monitoring of the space by the Attendant and/or Entrant for ambient air and hazard conditions including

by not limited to percent oxygen, combustible gases as measured by lower explosive level, carbon monoxide, and hydrogen sulfide.

4. Permit – A Confined Space Entry Permit (and any other required permits such as a hot work permit) is properly and thoroughly completed and valid for appropriate time periods.
5. Energy Isolation – The space is isolated from all mechanical, pneumatic, hydraulic, electrical, etc. forms of energy that may be inadvertently or unexpectedly introduced to the confined space.
6. Emergency Procedure – Emergency procedures have been established and will be discussed with all crew members and other appropriate parties (i.e., property owners, general contractors, subcontractors, etc.) prior to the start of work each day.
7. Communication Systems – A Communication System will be established and understood by all workers involved in the activities.
8. Non-Entry Rescue Equipment – Non-entry rescue or rescue entry are selected based on the scope of work and site conditions.
9. Safety Meeting – A mandatory safety meeting will be held at the start of each workday to discuss appropriate information and will be documented.

The following procedures will be followed during confined space entry by all subcontractors when a confined space entry is required in a facility which does not have a written permit required confined space entry program or that program is considered to be inadequate. The following procedures must be followed for each confined space that is entered even if a single job requires entering several spaces.

1. Conduct a safety meeting after the space has been characterized and acceptable entry conditions have been identified and prior to entry. Additional safety meetings shall be completed whenever new tasks are initiated and/or different Attendants/Entrants are engaged. At a minimum, the following information must be discussed:
    - Chemical and physical hazards of the space and surrounding areas
    - Emergency procedures
    - Work assignments
2. Inform the owner or general contractor and/or other contractors of the location of the confined space, the hazards therein and the date and duration of the planned entry and document.
3. Isolate the space to eliminate non-atmospheric hazards using the Lockout/Tagout procedures. Note: If there are no atmospheric hazards, the confined space can be re-classified as non-permit required confined space.
4. Purge, inert, flush, or ventilate the space as necessary to eliminate or control atmospheric hazards.
5. Monitor air quality and verify that atmospheric conditions are acceptable. If atmospheric hazards cannot be controlled to safe levels without the use of atmospheric supplying respirators or eliminated, workers who are not part of an entry rescue team will not enter the space.
6. Ensure that a means of communication has been established (e.g. two-way radios, hand signals, etc).
7. Ensure that PPE, lighting, barriers and shields, means of entry/exit (e.g. ladder) and non-entry rescue equipment is present.

8. Ensure that an emergency entry rescue service is available, has been notified, is capable of responding, and is on call. The emergency entry rescue service may be a subcontractor team or another vendor.
9. Ensure that an attendant is present and capable of periodic or continuous air monitoring.
10. Ensure that at least one of the crew involved in the entry is certified for First Aid, CPR and an Automated External Defibrillator (AED) use.
11. Complete subcontractor's Confined Space Entry Permit. Before the Supervisor allows entry to proceed, the Supervisor, Attendants and all Entrants must sign the form indicating that they understand all operational aspects and health and safety issues relating to the assigned work.
12. Post the completed entry permit at the entrance to the confined space with a warning sign containing the following information:
    "Danger – Permit-Required Confined Space- Authorized Personnel Only"
13. Install barriers to protect Entrants from external hazards presented by pedestrians and vehicles.
14. Proceed with entry.
15. Conduct air monitoring periodically or continuously, as needed based on the type of confined space entered and its characterization.
16. Evacuate and re-evaluate the space if:
    - There is a change in the configuration or use of, or the type of work conducted or materials used in, the confined space;
    - New information regarding a hazard in or near a confined space is identified;
    - An employee or authorized representative provides a reasonable basis for believing that the initial hazard determination was inadequate;
    - An unauthorized entry into the confined space occurs;
    - Detection of a hazard in or near the confined space that is not addressed by the entry permit;
    - Detection of a hazard level in or near a Permit Required Confined Space that exceeds the planned conditions specified in the entry permit; and
    - The occurrence, during an entry operation, of an injury, fatality or near-miss.
17. The Supervisor shall terminate the entry and cancel the permit when:
    - The task which required entry is complete.
    - An unacceptable condition occurs in or near the space.
    - There is a shift change.

6.9.1 Air Monitoring

All air monitoring must include percent oxygen, combustible gases as measured by lower explosive level, carbon monoxide, hydrogen sulfide and other toxins if known to be present within the atmosphere. The air monitoring should be done from outside of the confined space initially and continued while work is being performed. A representative number of sampling

locations must be utilized to properly characterize the space including but not limited to: remote locations, space volume, sumps, low spots, etc.

Generally, air monitoring for the contaminants identified during the hazard evaluation stage should be conducted by the Attendant continuously. If acceptable concentrations are found at each location upon initial evaluation, and concentrations remain acceptable for the first fifteen minutes of entry and no hazard increasing activities are being performed, the frequency of monitoring may be reduced to once every 15 minutes.

6.10 COVID-19 Awareness

In wake of the COVID-19 pandemic, all on-Site personnel will be taking the following precautionary measures to keep healthy, and reduce the risk of exposure and transmission of COVID-19. Additional safety precautions and guidelines are outlined in **Appendix C**.

1. Heighten situational awareness and good housekeeping practices.
2. Frequently disinfect frequently touched surfaces on equipment.
3. Use disposable nitrile gloves as needed. When necessary, use disinfecting wipes to clean surfaces prior to handling when working with gloves is not required.
4. Practice social distancing, maintaining minimum distances of 6 feet from other personnel. When social distancing practices cannot be followed, and assuming available, utilize PPE including but not limited to the use of P100 half-face respirators, N95 respirators, surgical masks and cloth face covers as needed.
5. Continue to practice good hygiene, including washing hands with soap and water after handling materials. If soap and water is unavailable, the use of a hand sanitizer containing at least 60% alcohol should be utilized, if available.

7.0 DESIGNATED WORK ZONES

Work zones will be determined prior to commencement of specific field activities. The area encompassing the activity and a sufficient offset distance will be demarcated as the Work/Exclusion Zone. The Work/Exclusion Zone will be demarcated with temporary barriers, of special consideration will be those areas to be located in or near the public right of way. Only qualified and necessary field personnel with the proper PPE and training will be allowed into the designated zone. An upgrade to the appropriate level of PPE for field personnel will be evaluated using the procedures identified in previous sections before personnel are allowed to re-enter the Work/Exclusion Zone.

8.0 DECONTAMINATION STATIONS

Decontamination stations will be located within a Contaminant Reduction Zone to be used for the cleaning of all heavy equipment, vehicles, tools and supplies required for the completion of Site activities. Personnel decontamination procedures for the appropriate levels of protection are described in Section 5.0. All tools and equipment shall be decontaminated before they are brought on site.

9.0 SITE ACCESS CONTROL

Designated Work Zones will be limited only to those personnel with the proper training and PPE required for the performance of field activities. Only personnel associated with the spill investigation and remediation, and dock replacement work will be allowed in the Work Zone.

Appropriate traffic controls and barricades will be utilized in areas of vehicular and pedestrian traffic. Local requirements for traffic control will be adhered to (e.g., obtaining appropriate permits, and provisions for a flagman), as may be warranted.

10.0 VEHICLE AND MECHANICAL EQUIPMENT CONTROL

10.1 Vehicle Control

All vehicles used on-Site will be maintained and operated in a safe manner for the protection of the operator, Site personnel and the surrounding community. Accordingly, vehicles will only be operated by trained personnel with applicable licenses and training. Vehicles will be registered and inspected as per New York State requirements. Any vehicle left on-Site overnight will be in a secured area and/or will have appropriate warning devices. All vehicles will be fully lowered and blocked during repair and when not in use. All equipment will have functional backup warning signals.

While working, all vehicles and mechanized equipment that contain liquid reservoirs (e.g., hydraulic tanks, gas tanks) will be underlain with plastic. Each vehicle will be equipped with spill containment and cleanup material on location (e.g. sorbent pads, spill packs) to contain potential releases from the vehicles.

10.2 Mechanical Equipment Control

All hand and power tools utilized on-Site by H2M personnel will be used and maintained in a safe and appropriate manner in accordance with applicable OSHA regulations and National Grid Health and Safety Guidelines.

11.0 CHEMICAL SAFETY

Chemicals used and encountered on-Site must be handled carefully to ensure worker safety and prevent spills. To ensure proper chemical management, the following guidelines have been established:

- Safety Data Sheets (SDSs) for every chemical brought on-Site will be maintained on-Site throughout the duration of work and will be made available to all personnel;
- All chemical delivery and storage containers and/or equipment will be in good condition and clearly labeled;
- All personnel will be familiar with and have access to the appropriate PPE for the chemicals or hazards present;
- Spill containment equipment, such as absorbent pads, will be stored on-Site;
- Any chemical spill will be reported to the National Grid authorized representative immediately;
- All unused chemicals used by H2M or our contractors will be removed from the Site at the end of the day and upon completion of work.
- Any chemical brought onto the Site that is not National Grid-approved will be immediately removed from the Site, once discovered.

12.0 PERSONAL HYGIENE

The following personal hygiene rules must be followed while performing work at the Site:

1. Eating, drinking, chewing gum or tobacco, smoking, or any other practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work area.
2. Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activities.
3. Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.
4. No facial hair (i.e., beards), which interferes with a satisfactory fit of the mask-to-face seal, is allowed on personnel required to wear respiratory protective equipment.
5. Contact with contaminated or suspected contaminated surfaces will be avoided. Whenever possible, walking through puddles, mud and discolored surfaces; kneeling on ground; leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground will be avoided.
6. Medicine and alcohol can increase the effects from exposure to toxic chemicals. Prescribed drugs will not be taken by personnel on-Site where the potential for absorption, inhalation, or ingestion of toxic substances exists unless specifically approved by a qualified physician.
7. All workers are required to abstain from the consumption of alcohol for the 5 hour period preceding their scheduled tour of duty, unless special exceptions are made associated with call-out requests. In these cases the worker is required to notify the company if they are fit-for-duty when they are called out for unscheduled work. If the decision is made for the worker to report, additional program requirements may need to be satisfied. Under no circumstances are covered workers permitted to consume alcohol during any tour of duty. Workers must be aware that abstaining from alcohol consumption for 5 hours may not be sufficient to ensure that they are fit for duty.

13.0 CONTINGENCY PLAN

Section 13.0 shall serve as the Site Contingency Plan. It has been developed to identify precautionary measures, possible emergency conditions, and emergency procedures. This plan shall be implemented by the Site Health and Safety Officer.

13.1 Emergency Medical Care and Treatment

This section addresses emergency medical care and treatment of field personnel, resulting from possible exposures to toxic substances and injuries due to accidents. The following items will be included in emergency care provisions:

a. Name, address and telephone number of the nearest medical treatment facility, as well as directions for locating the facility, plus the travel time, will be readily available (**Appendix B**).

b. Names and telephone numbers of ambulance service, police and fire departments, and procedures for obtaining these services will be readily available (**Appendix B**).

c. Procedure for prompt notification of the H2M Site Health and Safety Officer and National Grid's field manager.

In addition, the following emergency equipment will be available, if necessary, at the project Site at all times when any field activities are being performed:

1. Emergency eyewash fountains and first aid equipment will be readily available on-Site and located in an area known to all personnel. Eyewash stations shall be American National Standards Institute (ANSI)-approved portable emergency eye wash station.
2. Readily available dry-chemical fire extinguisher. The extinguisher must have an annual inspection tag/ring. Additionally, there must be a monthly inspection tag that is completed by an inspector (with initials and date) and the inspections must be no more than 30 days apart.

13.2 Off-Site Emergency Medical Care

The Site Health and Safety Officer shall establish emergency communications with emergency response services.

13.3 Personnel Accidents

Any bodily injuries occurring as a result of an accident during the operation at the Site will be handled in the following manner:

a. First aid equipment will be available on-Site for minor injuries. If the injuries are not considered minor, proceed to the next step. At least one person on Site will have a current First Aid/CPR certification if the Site is more than 5 miles from the nearest hospital.

b. The local first aid squad rescue unit, a paramedic unit, the local hospital and the Site Health and Safety Officer shall be notified of the nature of the emergency.

c. The injured employee shall be transported by emergency vehicle to the local hospital.

d. National Grid shall be notified of the nature of the emergency immediately.

e. A written report shall be prepared by the Site Health and Safety Officer detailing the events and actions taken during the emergency within 24 hours of the accident. A copy of this report will be provided to National Grid.

f. See **Appendix B** for a list of emergency contacts in Site area and a route to the hospital.

The National Grid representative will be notified immediately regarding any injury, accident, spill, fire, explosion, etc. involving any member of the project team (including subcontractors) and members of the public. If an injury or Close Call does occur, H2M will complete the National Grid Contractor Injury Report and provide it to National Grid within 24 hours. Additionally, an investigation report which describes the incident, root cause determination, and preventative actions to be taken to prevent a reoccurrence will be provided to National Grid. Work will not re-commence on the task where the injury or Close Call occurred until National Grid considers H2M's preventative action plan to be acceptable. The National Grid Construction EH&S Project Specialist shall be provided with any accident/incident investigation reports that may be prepared.

H2M embraces National Grid's ideal of empowering all workers on site to be able to call a Time Out if a heretofore-unanticipated safety and/or environmental concern develops on a project.

13.4 Personnel Exposure

In the event that any person is splashed or otherwise excessively contaminated by chemicals, the following procedure will be undertaken:

a. Disposable clothing contaminated with observable amounts of chemical residue is to be removed and replaced immediately.

b. In the event of direct skin contact in Level D, the affected area is to be washed immediately with soap and water, or other solutions as directed by medical personnel. These materials will be located within the immediate work area.

c. The Site Health and Safety Officer or other individuals holding a current first aid certificate will determine the immediate course of action to be undertaken. This may involve using the first aid kit and/or eyewash stations.

13.4.1 Weather

Adverse weather conditions are an important consideration in planning and conducting Site operations. Hot or cold weather can cause physical discomfort, loss of efficiency, and personal injury. Of particular importance is heat stress resulting when protective clothing decreases natural body ventilation. One or more of the following will help reduce heat stress:

a. Provide plenty of liquids to replace body fluids (water and electrolytes) lost because of sweating. The commercial mixes may be preferable for those employees on a low sodium diet.

b. Provide cooling devices to aid natural body ventilation. These devices, however, add weight, and their use should be balanced against worker efficiency. Long cotton underwear help absorb moisture and protect the skin from direct contact with heat absorbing protective clothing.

c. Install mobile showers and/or hose down facilities to reduce body temperature and cool protective clothing.

d. In extremely hot weather, conduct operations in the early morning or evening.

e. Ensure that adequate shelter is available to protect personnel against heat, cold, rain, snow, etc.

f. In hot weather, rotate shifts of workers wearing impervious clothing.

g. In the event of thunder or lightening, work will be suspended until lighting and thunder has subsided for a minimum of 30 minutes.

13.4.2 Heat Stress

If field operations are conducted in the warm summer months, heat-related fatigue will be closely monitored. Monitoring of personnel wearing impervious clothing or wearing respiratory protection shall commence when the ambient temperature is 70 degrees Fahrenheit (°F) or above. Frequency of monitoring should increase as the ambient temperature increases or as slow recovery rates are indicated. When temperatures exceed 85°F, workers should be monitored for heat stress after every work period. The following screening mechanism will be used to monitor for heat stress:

Heart rate (HR) will be periodically measured by the radial pulse for 30 seconds during a resting period. The HR should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 33 percent. If the pulse rate is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33 percent.

Heat-related illnesses range from heat fatigue to heat stroke, the most serious. Heat stroke requires prompt treatment to prevent irreversible damage or death. Protective clothing may have to be cut off. Less serious forms of heat stress require prompt attention or they may lead to a heat stroke. Unless the victim is obviously contaminated, decontamination should be omitted or minimized and treatment begun immediately. Heat-related problems can be categorized into:

Heat Rash:	Caused by continuous exposure to hot and humid air and aggravated by chafing clothes. Decreases ability to tolerate heat as well as being a nuisance.

Heat Cramps: Caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen.

Heat Exhaustion: Caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.

Heat Stroke: The most severe form of heat stress. The body must be cooled immediately to prevent severe injury and/or death. Signs and symptoms are: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Some of the symptoms of heat stress are: hot dry skin, fever, nausea, cramps, red or spotted skin, confusion, lightheadedness, delirium, rapid pulse, convulsions, and unconsciousness. For workers suffering from heat stress, the following actions should be taken:

1. Remove the victim to a cool area;
2. Loosen clothing;
3. Thoroughly soak the victim in cool water or apply cold compresses;
4. Call for medical assistance.

13.4.3 Cold Stress

If field operations are conducted in the cold winter months, cold stress will be monitored. Two factors influence the development of a cold injury: ambient temperature and the velocity of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10°F air with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at -18°F.

As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus, the body cools suddenly when chemical-protective equipment is removed if the clothing underneath is perspiration soaked.

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of damage. Frostbite of the extremities can be categorized into:

Frost Nip or Incipient Frostbite: Characterized by suddenly blanching or whitening of skin.

Superficial Frostbite: Skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.

Deep Frostbite: Tissues are cold, pale and solid; extremely serious injury.

Hypothermia: Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperatures. Its symptoms are usually exhibited in five stages: (1) shivering; (2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body temperature to less than 95°F; (3) unconsciousness, glassy stare, slow pulse, and slow respiratory rate; (4) freezing of the extremities; and (5) death.

13.5 Fire

The telephone number to the local fire department will be posted along with other emergency numbers conspicuously on-Site at all times (**Appendix B**). In the event of a fire occurring at the Site, the following actions will be undertaken by the Site Health and Safety Officer:

a. Evacuate all unnecessary personnel from the area of the fire and Site, if necessary.
b. Contact the local fire and police departments informing them of the fire and any injuries, if they have occurred.
c. Contact the local hospital of the possibility of fire victims.
d. Contact the Health and Safety Manager and the H2M Project Manager.

13.6 Personnel Protective Equipment Failure

If any Site worker experiences a failure or alteration of PPE that affects the protection factor, that person and his/her buddy shall immediately leave the Work/Exclusion Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced to the satisfaction of the Site Health and Safety Officer.

13.7 Spill Prevention and Containment

Personnel on-Site shall be adequately trained in the operation and maintenance of equipment used on-Site. Equipment shall be inspected on a daily basis to minimize the potential for spillage of equipment related fluids. Personnel shall also be adequately trained to recognize and respond to a spill situation. Absorbent materials will be maintained on-Site for potential spill containment and mitigation. Sewers, manholes, and underground vaults shall be effectively protected from water and soil generated from excavation activities and oils and other chemicals that may be released during the course of work.

13.8 Marine Operations

Spill response, delineation and remediation, and dock replacement activities will likely require riding or traveling in boats, or working on docks and barges. H2M employees and subcontractors shall follow all National Grid and US Coast Guard requirements for marine safety. Personal Flotation Devices (PFDs) shall be worn at all times when working alone near open waters (i.e., on a dock, boat or barge).

14.0 CALLING A TIME OUT

The purpose of this guideline is to outline how a “Time Out” or work stoppage is called by a National Grid Contractor’s employee due to a safety, health and/or an environmental concern and how the “Time Out” is to be resolved prior to proceeding with work.

14.1 Introduction

National Grid’s Contractor employees are encouraged to call a “Time Out” if they are unsure of how to proceed on a job because of a safety, health, and/or environmental concern.

H2M’s commitment to safety, health, and environmental excellence requires that all work proceed only after it is safe and environmentally sound. The responsibility for ensuring that this takes place rests with every worker performing on National Grid projects. Effectively meeting these responsibilities depends upon open communication between individuals and their supervisors prior to work beginning, and – in certain cases – after safety, health and/or environmental issues are identified. All jobs should begin with a pre-job briefing in which all safety, health, and environmental issues are addressed.

14.2 Time Out Guidelines

When a safety, health or environmental concern arises on a job, National Grid’s Contractor employees are encouraged to call a “Time Out.” Upon calling a “Time Out,” the worker must immediately notify his/her supervisor and provide him/her with information regarding the nature of the safety, health or environmental concern. When a “Time Out” is called, work stops.

The supervisor should contact or meet with the worker with the intent of resolving the worker’s concerns. If the concerns are resolved to the satisfaction of the worker and the supervisor the “Time Out” is over and work proceeds. If the concerns are not resolved to the satisfaction of the worker and/or the supervisor, work does not proceed, and the following process should be followed to resolve the concerns:

- The National Grid site representative is to be contacted to obtain assistance in resolving the concerns. Using his/her expertise, safety, health, and environmental rules, regulations, and procedures, the National Grid site representative will attempt to resolve the matter. The National Grid site representative may call upon his/her project EH&S representative and/or subject matter experts from other areas of National Grid, as necessary, including, but not limited to Engineering, Corporate EH&S, the work rules committee, or operations.
- In emergency and other situations where extensive job and procedural reviews are necessary to resolve the concerns, an alternate work plan, where practical, will be

implemented to complete the job, pending resolution of the "Time Out." In this instance, before proceeding with any work prior to the resolution of this "Time Out," it is the responsibility of the Contractor's Site Supervisor, the National Grid site representative and his/her project EH&S representative to ensure that the work will be performed in full accord with safety, health, and environmental procedures, that all rules and regulations are followed and that the work also satisfactorily minimizes safety, health, and environmental risks.

When a "Time Out" has been called, and the worker and supervisor resolve the issue themselves and the work proceeds, the supervisor should notify the National Grid site representative. In all "Time Out" situations, the National Grid project EH&S representative will review the incident in a timely manner, determine if the "Time Out" has implications outside the specific project, and take steps, as appropriate, to communicate and work to prevent its reoccurrence.

15.0 SUMMARY

The Health and Safety Plan establishes practices and procedures to be followed so that the welfare and safety of workers and the public are protected. It is important that personal equipment and safety requirements be appropriate to protect against the potential or known hazards at a Site. Protective equipment will be based upon the type(s), concentration(s), and routes of personal exposure from substances at the Site, as well as the potential for hazards due to heavy equipment use, vision impairment, weather, etc. All Site operation planning incorporates an analysis of the hazards involved and procedures for preventing or minimizing the risk to personnel. The following summarizes the rules that must be obeyed:

a. The Health and Safety Plan will be made available to all H2M personnel doing field work on-Site. All personnel must sign this plan, indicating they have read and understood its terms.
b. All H2M personnel will be familiar with standard operating safety procedures and additional instructions contained in the Health and Safety Plan.
c. All H2M personnel going on-Site will be adequately trained and thoroughly briefed on anticipated hazards, equipment to be worn, safety practices to be followed, emergency procedures, and communications.
d. Any H2M personnel protection equipment (e.g., respiratory protection, protective clothing) determined to be appropriate for certain Site activities shall be required to be worn by all personnel entering the work areas.
e. Based on present knowledge and conditions, Level D protection will be the required PPE. PFDs will be required when working or traveling in a boat or working on a dock or barge.

APPENDIX A

HASP ACKNOWLEDGEMENT FORM

SITE WORKER

HEALTH AND SAFETY STATEMENT FORM

I have read the Health and Safety Plan (HASP) for the National Grid Gas Condensate Release Site (Site) and I have reviewed and understand the potential hazards and the precautions/contingencies of each potential hazard.

I agree to abide by the stipulations of this HASP and further agree to hold H2M, National Grid (and all subsidiaries), harmless from, and indemnify against, any accidents which may occur as a result of activities at the Site regardless of whether or not they were covered in the HASP.

Name:_____Representing:_____

Print:_____Date:_____

Sign:_____

Name:_____Representing:_____

Print:_____Date:_____

Sign:_____

Name:_____Representing:_____

Print:_____Date:_____

Sign:_____

Name:_____Representing:_____

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Sign:_____

Name:_____Representing:_____

Print:_____Date:_____

Sign:_____

Name:_____Representing:_____

Print:_____Date:_____

Sign:_____

APPENDIX B

EMERGENCY TELEPHONE NUMBERS AND HOSPITAL DIRECTIONS

EMERGENCY TELEPHONE NUMBERS

NATIONAL GRID

William Ryan	Office: (516) 545-2586 Cell: (516) 790-1660
Jessica Phillips	Cell: (516) 581-7313

HOSPITALS (Both approximately 3 miles from Site)

Brookdale Hospital Medical Center
1 Brookdale Plaza
Brooklyn, NY 11212
(718) 240-5000

Mount Sinai Brooklyn
3201 Kings Highway
Brooklyn, NY 11234
(718) 252-3000

URGENT CARE CENTERS (Both located in the same building)

First MedCare Inc
8707 Flatlands Avenue
Brooklyn, NY 11236
(718) 257-7777

Community Urgent Care
775 E 87th Street
Brooklyn, NY 11236
(718) 257-2648

NYC POLICE (NYPD) **Emergency:** 911

FIRE DEPARTMENT (FDNY) **Emergency:** 911

NYC POISON CONTROL CENTER: 1-800-222-1222

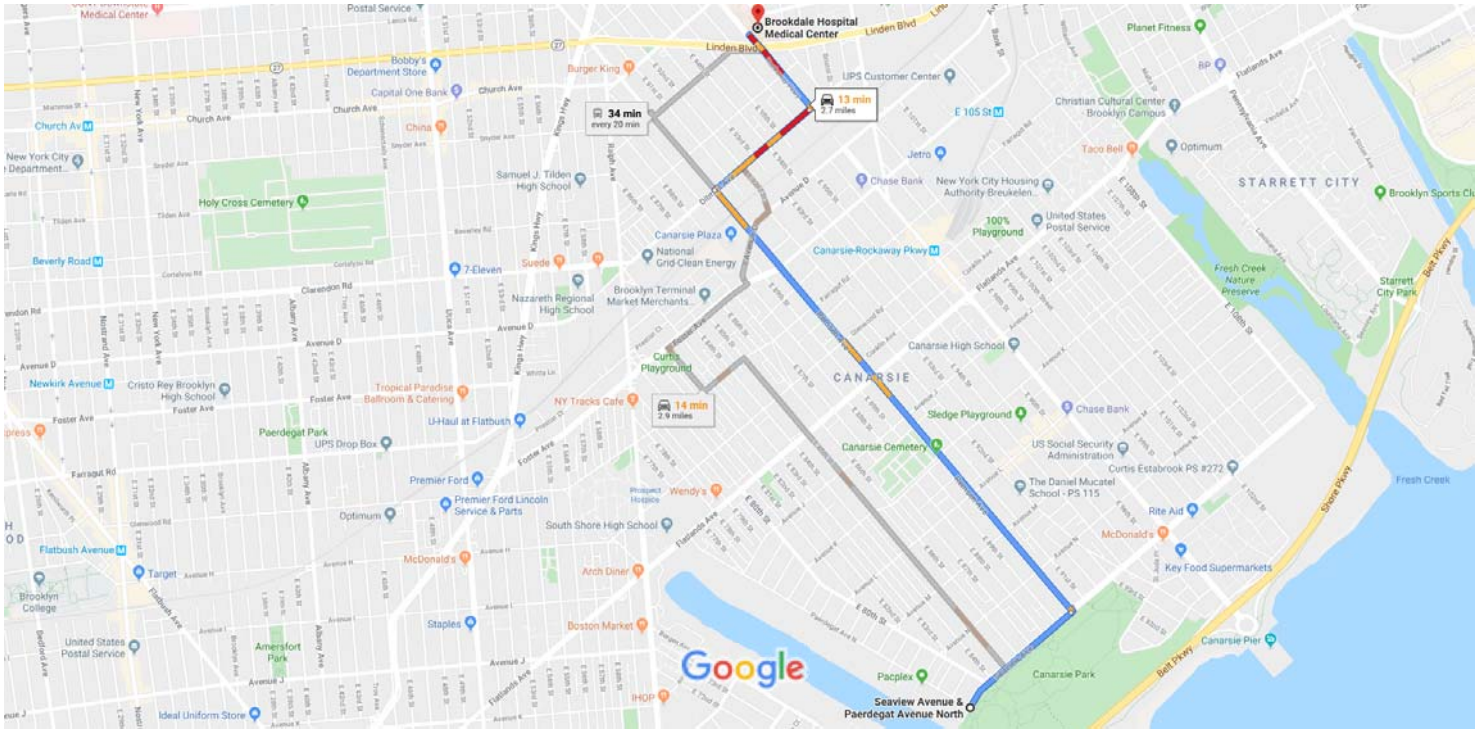
NYSDEC Spill Hotline: 1-800-457-7362

H2M	(631) 756-8000
Project Director	Paul R. Lageraaen, P.E., P.G. (Ext. 1483) Cell: (631) 806-5008
Project Manager	Lily Wu, P.G. (Ext. 1611) Cell: (917) 846-9900
Corporate Health & Safety Director	Thomas King, C.I.H. (Ext. 1605) Cell: (917) 250-0953
Site Safety Officer	Kevin Taylor, P.E., P.G. (Ext. 1014) Cell: (516) 322-4543

Google Maps

Seaview Avenue & Paerdegat Avenue North to Brookdale Hospital Medical Center

Drive 2.7 miles, 13 min



Map data ©2019 Google 1000 ft

Seaview Ave & Paerdegat Ave N

Brooklyn, NY 11236

1. Head northeast on Seaview Ave toward E 80th St — 0.4 mi
2. Turn left onto Remsen Ave
   - Pass by Dollar Tree (on the left in 1.5 mi) — 1.6 mi
3. Turn right onto Ditmas Ave
   - Pass by Wendy's (on the left) — 0.4 mi
4. Turn left onto Rockaway Pkwy
   - Destination will be on the right — 0.3 mi

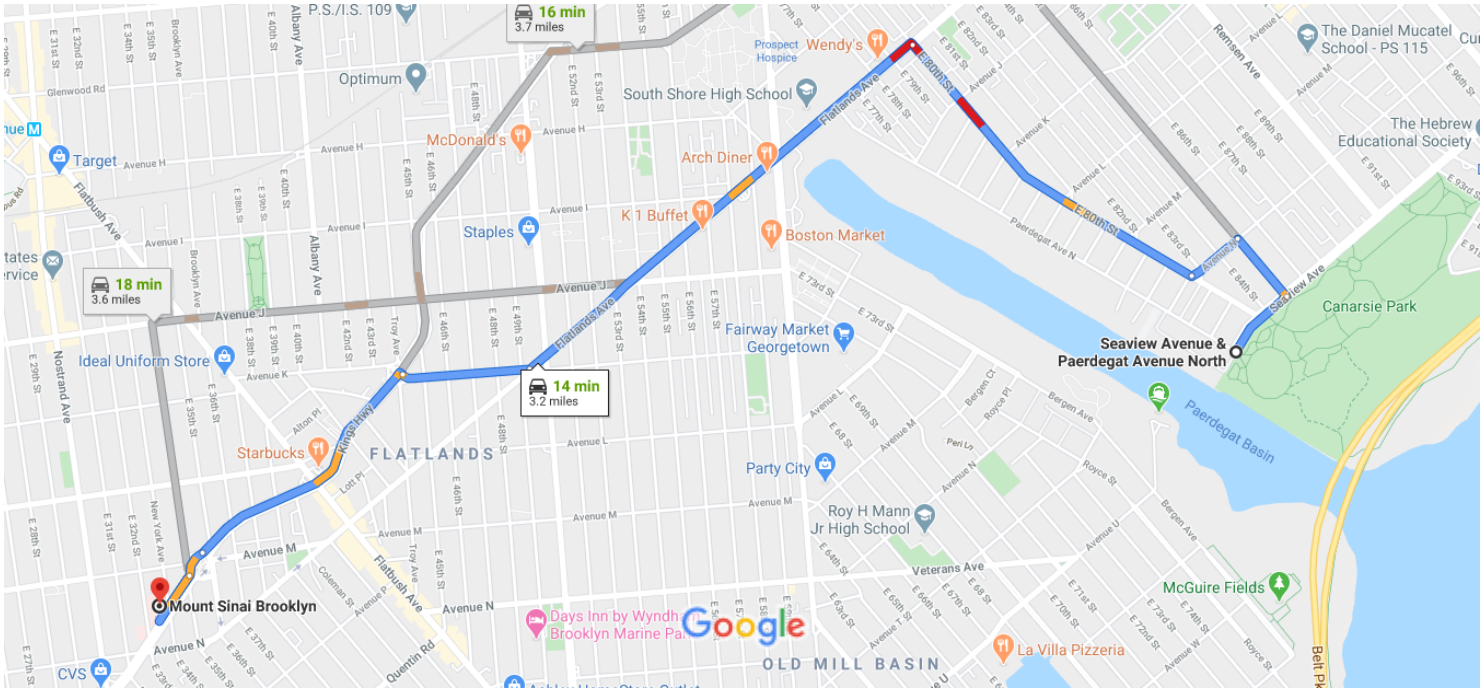
Brookdale Hospital Medical Center

1 Brookdale Plaza, Brooklyn, NY 11212

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Google Maps Seaview Avenue & Paerdegat Avenue North to Mount Sinai Brooklyn

Drive 3.2 miles, 14 min



Seaview Ave & Paerdegat Ave N

Brooklyn, NY 11236

Take Seaview Ave and E 85th St to E 80th St

2 min (0.4 mi)

1. Head northeast on Seaview Ave toward E 80th St

0.2 mi

2. Turn left onto E 85th St

0.2 mi

3. Turn left at the 1st cross street onto Avenue N

0.1 mi

Take Flatlands Ave to Avenue K

8 min (1.8 mi)

4. Turn right onto E 80th St

0.8 mi

5. Turn left onto Flatlands Ave

1.0 mi

6. Turn right onto Avenue K

1 min (0.3 mi)

Continue to Kings Hwy

4 min (0.6 mi)

7. Turn left onto Kings Hwy

0.6 mi

8. At the traffic circle, take the 2nd exit and stay on Kings Hwy

305 ft

9. Slight right to stay on Kings Hwy

Destination will be on the right

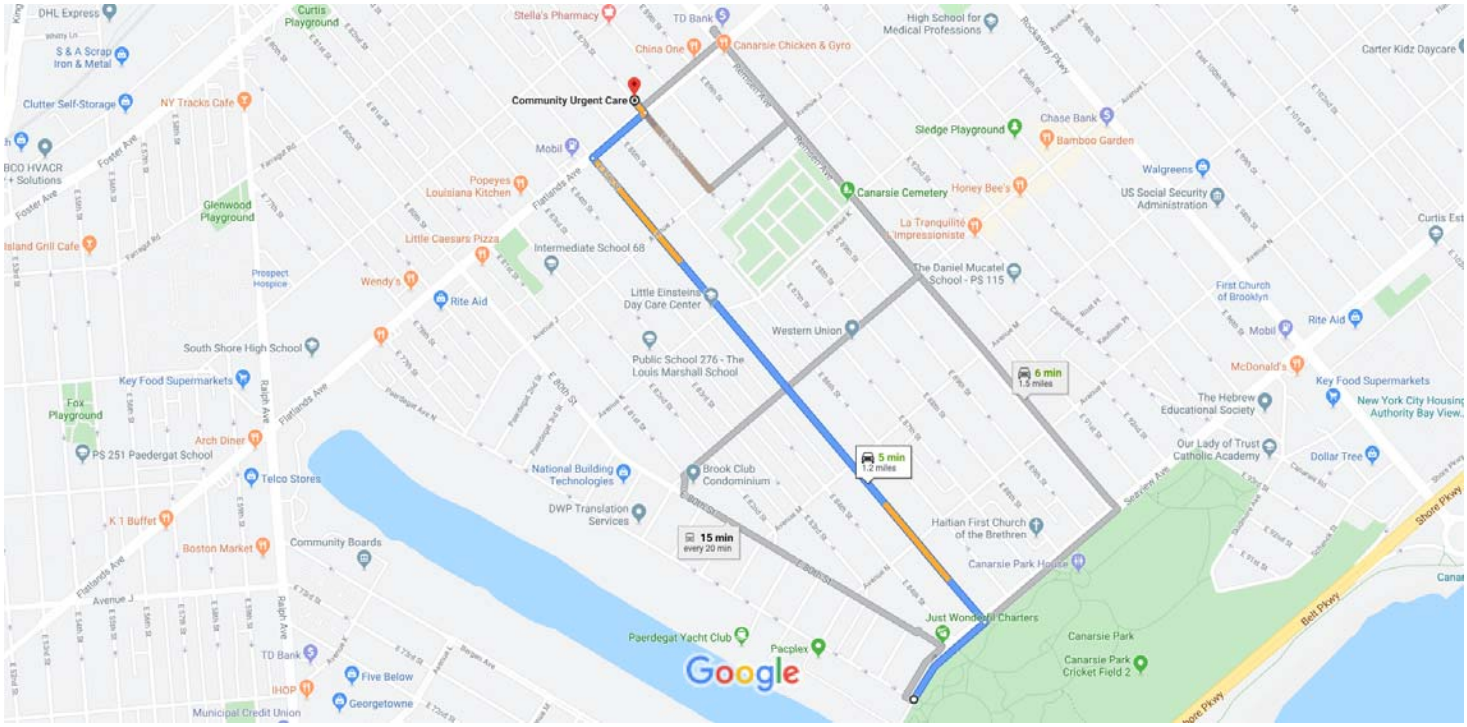
40 s (0.1 mi)

Mount Sinai Brooklyn

3201 Kings Hwy, Brooklyn, NY 11234

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Google Maps Seaview Avenue & Paerdegat Avenue North to Community Urgent Care Drive 1.2 miles, 5 min



Map data ©2019 500 ft

Seaview Ave & Paerdegat Ave N

Brooklyn, NY 11236

1. Head northeast on Seaview Ave toward E 80th St — 0.2 mi
2. Turn left onto E 85th St — 0.9 mi
3. Turn right onto Flatlands Ave — 0.1 mi
4. Turn left onto E 87th St — 128 ft

Community Urgent Care

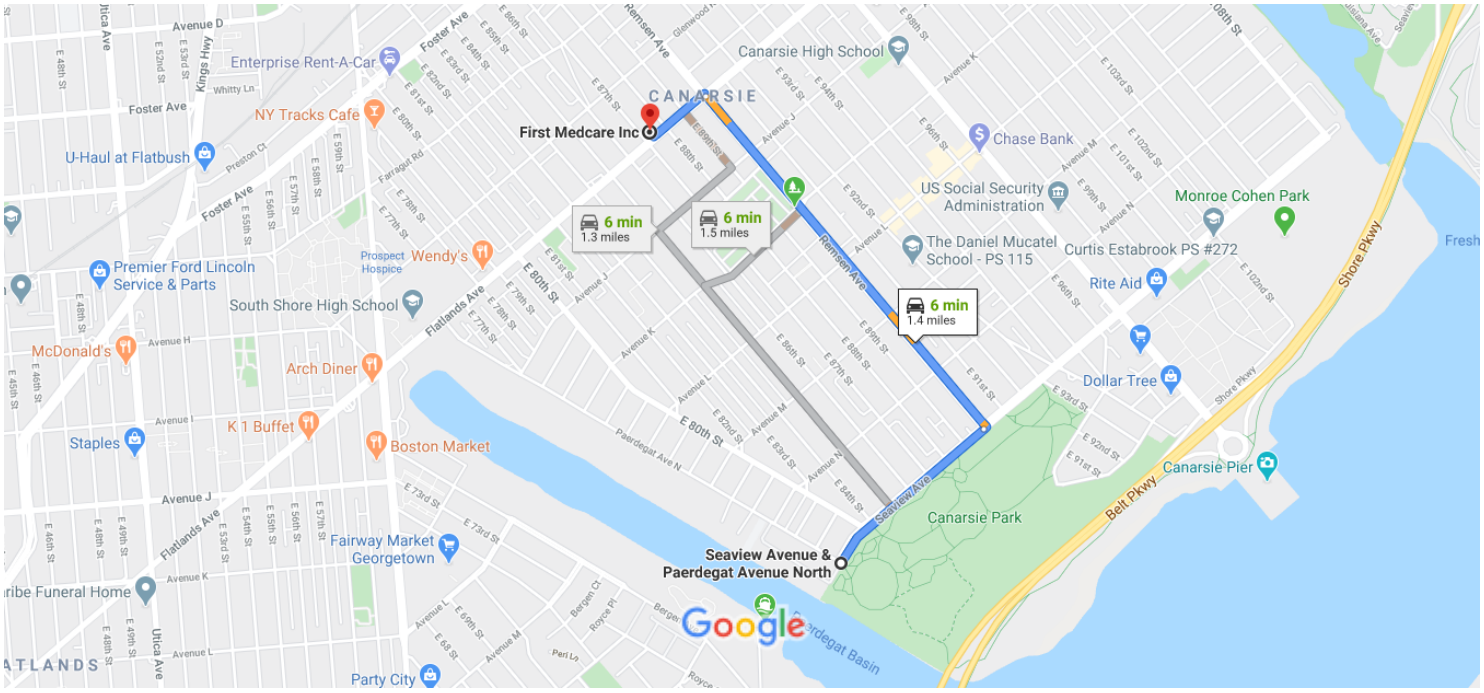
775 E 87th St, Brooklyn, NY 11236

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Google Maps

Seaview Avenue & Paerdegat Avenue North to First Medcare Inc

Drive 1.4 miles, 6 min



Map data ©2020 1000 ft

Seaview Ave & Paerdegat Ave N

Brooklyn, NY 11236

1. Head northeast on Seaview Ave toward E 80th St — 0.4 mi
2. Turn left onto Remsen Ave — 0.9 mi
3. Turn left onto Flatlands Ave — 0.1 mi

Destination will be on the right

First Medcare Inc

8707 Flatlands Ave, Brooklyn, NY 11236

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

APPENDIX C

COVID-19 AWARENESS

APPENDIX C. COVID-19 AWARENESS

During this time, it is important to take precautionary measures to keep yourselves and others healthy. The following precautions and tips as identified by the Center for Disease Control and World Health Organization are designed to reduce the potential for transmission of COVID-19:

Here are some tips on how to help stop the spread of and decrease your likelihood of contracting COVID-19:

- Avoid personal contact with others (e.g., Do not shake hands, fist bump or elbow bump).
- Practice social distancing (even with crew members), by standing at least six feet away from others during the performance of work.
- Wash your hands frequently for at least 20 seconds with warm water and soap. Get in-between your fingers and under your nails. Use hand sanitizer (with at least 60% alcohol) when soap and warm water are not readily available. If you have wipes available, use hand sanitizer and wipes for the best results.
- Cover your mouth when coughing or sneezing with either a disposable tissue, or within the crook of your elbow.
- Properly dispose all used tissues immediately. Do not place used tissues in your pocket. Do not use handkerchiefs.
- Wash clothes frequently. Clothes can be a source of contamination that gets bought into, homes, stores, cars, office, trailer etc.
- Frequently sanitize touched surfaces in your vehicle: Inside/outside/trunk handle, steering wheel, turn signal, media/air control knobs, glove/mid console handles, window buttons and any other surfaces you touch frequently.
- Sanitize your phone, laptop, tablets.
- Use separate writing utensils to sign the daily briefing and other documentation.
- Clean and disinfect surfaces before, and after touching anything. As cleaning products are limited during this pandemic, we will provide all crews with personal and equipment sanitizing wipes. If your crew is in desperate need for sanitizing equipment, please contact your supervisor or safety and we will ensure we get them to you as soon as possible. Keep in mind, stores generally stock up overnight/early morning. You may be able to get sanitizing supplies from Target/ Walmart/ Home Depot/ Lowes/ Walgreens etc. Many stores placed an item limit on these supplies to avoid a supply shortage and resale/price gouging.
- Keep extra over-the-counter medical supplies, household items and groceries.

Safety Precautions and PPE

All Employees are required to take the necessary precautions to protect themselves and other from the spread of COVID-19. We have taken many steps to strengthen our best work practices through personal hygiene. All employees are required to use hand sanitizer and wipe down all frequently touched surfaces before work, at the end of the day and throughout the day as needed. We have provided the necessary sanitizing supplies to protect our workforce as well as members of the public. Everyone has the responsibility and the obligation to reduce exposure by practicing social distancing. An employee that is not feeling well must be fully transparent as soon as they feel any symptoms of illness. If the symptoms appear to be COVID-19 related, the employee is required to stay home and self-isolate. He/she will be allowed to return to work after receiving a medical clearance that has been reviewed and accepted from the Human Resource department.

Disinfecting wipes shall be used to wipe down equipment and all frequently touched surfaces before work and at the end of the day. Some of these surfaces include, cell phones, door handles, steering wheel and controls, trunk latches, air condition controls, bin doors, locks, keys, punch codes and yard access phones, credit cards, ATM surfaces, gas pumps, etc. Other supplies will include:

- Instant hand sanitizer, such as Purell: Used for sanitizing hands frequently.
- Hygiene Gloves: Used for gas pumps, ATMs, handling money, picking up material in stores, etc.
- Disposable plastic bags: Used to properly discard potentially contaminated material.
- Disinfectant spray: Used to disinfect potentially contaminated areas.
- Disposable dust masks are available for voluntary use.

DAILY Morning Job Brief Questions

These questions must be answered every day prior to the start of work by EVERY SINGLE crew member until further notice. Employees are asked to ask these questions of themselves prior to reporting to work within H2M's offices and jobsites.

The questions are:

1. Are you feeling ill in any way? For instance, do you have any of the following symptoms: **A fever? A cough? Shortness of breath?**

2. Have you recently traveled (within the last 14 days) to a CDC level or higher travel advisory area?

3. Have you had close contact with a symptomatic (e.g., fever, cough, and/or shortness of breath) traveler (within the last 14 days) to a CDC level 2 or higher travel advisory area?

4. Have you had close contact, such as a household member, with a person who was tested with results pending or positive for coronavirus within the last 14 days?

In an effort to prevent cross contamination we have suspended the need for each employee to physically sign the daily job brief. However, each employee MUST review this document, and verbally answer all of the questions DAILY. These answers shall be logged by the employee filling out the daily job brief.

Instructions to answer questions: Next to the employee's name, write "Low Risk" if all the answers are "NO". If any employee responds "YES" to any of the questions, write "At Risk" next to their name and contact your direct supervisor and safety manager immediately.

APPENDIX D

QUALITY ASSURANCE PROJECT PLAN (QAPP)

QUALITY ASSURANCE PROJECT PLAN

PAERDEGAT BASIN GAS CONDENSATE RELEASE
SEAVIEW AVE AND PAERDEGAT AVE N
BROOKLYN, NEW YORK 11236

NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

MAY 25, 2021

Prepared for:

National Grid
175 East Old Country Road
Hicksville, New York 11801

Prepared by:

H2M architects + engineers
290 Broad Hollow Road, Suite 400E
Melville, New York 11747

H2M Project No.: NGRD1221

H 2 M architects + engineers

PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

QUALITY ASSURANCE PROJECT PLAN

MAY 25, 2021

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MAY 25, 2021

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PAERDEGAT BASIN GAS CONDENSATE RELEASE
BROOKLYN, NEW YORK
NYSDEC SPILL NO. 1206391
NYSDEC SITE NO. 224167

QUALITY ASSURANCE PROJECT PLAN

MAY 25, 2021

1.0 PROJECT DESCRIPTION

On behalf of National Grid, H2M architects + engineers prepared this Quality Assurance Project Plan (QAPP) to address sampling activities that will be performed as part of the Interim Remedial Measure Work Plan (IRM WP) for Operable Unit 2 (OU-2) associated with the Paerdegat Basin Gas Condensate Release (Spill No. 1206391) located near the intersection of Seaview Avenue and Paerdegat Avenue North in Brooklyn, NY.

This QAPP presents procedures to be followed during the sampling and analysis program as well as project organization and personnel responsibilities necessary to carry out these practices. Quality Assurance / Quality Control (QA/QC) and data validation requirements are also summarized in this plan. The gas condensate release OU-2 remediation will be performed in accordance with New York State Department of Environmental Conservation (NYSDEC) requirements and guidance incorporated herein, and with the Department's approval.

The scheduled work will occur in the vicinity of a former standpipe pit that was initially installed as part of a gas line abandonment project and which is considered to be the origin of the release. Remediation under the IRM WP will involve excavation of an approximately rectangular shaped area of 10 to 13 feet wide by 115 feet long and 7 feet deep on Seaview Avenue near the intersection with Paerdegat Avenue North. The excavation will span a distance of about 60 feet northeast of the former standpipe pit and approximately 55 feet southwest of the pit. The extent of excavation is shown in **Figure 1**.

During gas line abandonment services on September 27, 2012, cement grout was pumped into the retired gas main beginning from the south side of Paerdegat Basin near the Hudson River Yacht Club, running beneath Paerdegat Basin towards the northeast, along the east side of Seaview Avenue, and terminates at the former standpipe pit. As a result of the cement grout filling operation, residual gas condensate within the retired gas line was inadvertently forced through a vent at the former standpipe pit location. Natural gas condensate that was contaminated primarily with polychlorinated biphenyls (PCBs) impacted soils within the former standpipe pit and the surrounding area.

Gas condensate was released onto the roadway (i.e., Seaview Avenue) and impacted a nearby stormwater catch basin that ultimately directed gas condensate to an outfall that discharges into Paerdegat Basin. Upon being notified of the release, National Grid notified the National Response Center (NRC) and the NYSDEC. Emergency response activities were conducted under the direct supervision of the United States Coast Guard (USCG), NYSDEC and NYCDEP and other Agencies. To date, most of the impacted facilities and areas have been successfully remediated with only the soils associated with OU-2 remaining to be remediated. This QAPP has been developed to provide quality assurance measures for the final step of the Paerdegat Basin Gas Condensate Release remediation described in the IRM WP.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITY

H2M has been retained by National Grid to provide environmental consulting services during the implementation of the IRM WP including all sampling services. An organization chart for the field sampling program is provided as **Figure 2**.

For projects involving a field sampling program, a project team is assembled with each team member responsible for specific elements of the work. To ensure that every project is completed with the highest degree of quality, each member of the project team must be aware of the quality assurance objectives for his/her specific element of the work. Resumes of the project team members are provided as **Appendix A**.

As indicated in **Figure 2**, the Principal-in-Charge is the direct contact between H2M and the client. The Principal-in-Charge is responsible for overall project technical direction and quality assurance, including:

- Defining project objectives,
- Allocation of resources,
- Establishing chains of command, and
- Periodic evaluation of project.

H2M's Project Manager is responsible for directing and overseeing all technical and administrative elements of the project. This includes:

- Day to day direction, communication and coordination with the project team,
- Review of all project documents,
- Monitoring overall work progress, schedules, project costs, and
- Day to day direction of QA/QC activities.

Reporting directly to the Project Manager is the Field Team Supervisor, who is responsible for directing all field sampling activities. Depending upon the specific project requirements, the field sampling work is carried out by staff engineers and scientists, and/or environmental field technicians.

The Field Team Supervisor is responsible for ensuring that the work performed by the field sampling staff is carried out in a manner consistent with the project QA requirements. Project QA requirements are specified by the NYSDEC and/or the approved IRM WP. The Field Team Supervisor is also responsible for direction and coordination with remedial contractors, who may be utilized for assisting sample acquisition, and who also acts as an intermediary between the field sampling and the analytical laboratory.

The Quality Assurance Officer (QAO) operates independently of the Project Manager, reporting directly to the Principal-in-Charge. The primary responsibilities of the QAO are as follows:

- Assist in the development of the IRM WP and evaluate its effectiveness,
- Monitor work to ensure conformance with the requirements of the IRM WP,
- Evaluate the need for and, if necessary, conduct field and laboratory QA audits, and
- Supervise data validation and review all report deliverables.

3.0 QA OBJECTIVES FOR DATA MEASUREMENT

The primary aim of this plan is to establish the procedures to be followed by project personnel when conducting field sampling and analysis. Quality assurance requires careful planning, organization and the dedication of every member of the firm to the concepts of QA/QC. This must be accompanied by the understanding and coordination of the roles of all personnel involved in a particular project, if this quality objective is to be met. The overall QA objective is to provide acceptable and appropriate quality assurance for the endpoint data produced by execution of the IRM WP. These data will be employed to ultimately enable NYSDEC spill closure and issuance of a release of liability pursuant to the Administrative Order on Consent (Index No. R2-0811-13-08) associated with the site.

4.0 FIELD SAMPLING

The field sampling plan associated with the gas condensate release OU-2 remediation includes the collection and analysis of soil samples from the rectangular area delineated in the Site Characterization Report (SCR) prepared for this site dated June 26, 2020 and approved by the NYSDEC on September 30, 2020. Soil samples will be taken by H2M field personnel from the bottom of the excavation area. Analysis of these samples will be utilized to confirm the removal of soil contamination associated with the release and enable backfilling and site restoration.

4.1 Sampling Methodology

Subsurface bottom soil samples will be collected manually. A Vactor/Guzzler truck, an excavator or similar piece of heavy equipment will be used to excavate the delineated contamination area to an approximate depth of seven (7) feet below grade surface (bgs). The work will require extensive sheeting on all sides to protect an adjacent active high-pressure gas main and secure excavation. The open excavation will allow the soil samples to be collected in a timely manner as the work progresses. The removal of soil to a measured depth will allow field screening, soil characterization and sampling. Field screening will include an inspection for visual and olfactory evidence of contamination and field testing with a portable photo-ionization detector (PID).

All IRM work activities will be recorded by the on-site H2M field personnel in a Daily Field Report (DFR). All sampling methods and characteristics will be documented using preprinted DFRs, as shown in **Appendix B**, and will include the following:

- Project name, location and job number,
- Date of the work (start, finish),
- Field inspector/Sampler name and identification,
- Sample location,
- Sample number and depth,
- Method/equipment used to acquire sample,
- Type and size of sample,
- Description of soil or fill,
- Sample preservation, if any, and
- Identification of laboratory for analysis.

Subsurface soil descriptions will be made in accordance with the Unified Soil Classification System (USCS).

Non-dedicated sampling equipment that requires re-use will be cleaned and decontaminated using the following procedure:

1) Detergent wash (e.g., Alconox®) and potable tap water rinse,
2) Triple rinse with distilled deionized water (certified PFAS-free).

All decontamination fluids and rinse water will be collected and characterized for proper disposal.

4.2 Sampling Plan

The extent of contamination was delineated during the site investigations performed in May 2014, November-December 2014 and June-July 2015 and documented in the approved SCR. During the implementation of this IRM WP, only limited confirmatory endpoint soil sampling is proposed, as a noted deviation from NYSDEC DER-10 5.4(b)(5)(ii). Endpoint sampling is proposed to be limited to bottom sampling of the excavation only since shoring will be utilized for sidewall stabilization and will limit sidewall accessibility. Since the remedial work will be bid out as a performance-based contract, the precise means and methods to be employed are not established. Should the remedial excavation be completed in sections, one bottom soil sample will be collected from each section. For example, if the total length of the excavation will be 115 feet and the Contractor will be completing the excavation in 15-foot length sections, a total of approximately eight (8) bottom samples will be collected. The actual length of each section will be based on the Contractor's discretion. Alternatively, should the Contractor complete the remedial excavation in a different method, rather than sampling every 900 square feet for an excavation measuring 20 to 300 feet in perimeter (as per DER-10), bottom sampling is proposed on an approximate 300-400 square foot basis which equates to one sample approximately every 30 linear feet along the length of the excavation area; a total of four (4) samples. In either situation, the number of samples will exceed that required by DER-10.

Additional QA/QC samples, i.e., blank, duplicate and spike samples, will also be collected to satisfy the NYSDEC Category B standards for Data Quality Assessments, see Section 6.0 below.

All environmental soil samples, including QA/QC samples, will be submitted to the analytical laboratory for the full suite of 6 NYCRR Part 375 parameters (i.e., metals, including hexavalent chromium and mercury, total cyanide, PCBs, pesticides, VOCs and SVOCs) and emerging contaminants (i.e., 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS)). A list of the PFAS analytes is provided in **Table 1**. These samples will be submitted for analysis in accordance with NYSDEC ASP Category B protocols.

Lastly, samples will be taken of the material to be used to backfill the excavation. In order to ensure the quality of the backfill material, each load of material will be inspected by H2M upon arrival at the site. It is anticipated that samples of the backfill material will be collected for laboratory analysis in accordance with NYSDEC DER-10 5.4(e). Analytical results will be compared to 6 NYCRR Part 375 Restricted-Residential Use standards for acceptability.

4.3 Sampling Procedures for PFAS

Sampling procedures for PFAS in soil will be followed in accordance with the sampling protocols outlined in Appendix B of the NYSDEC guidance document "Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs," January 2021. Soil samples will be collected utilizing a pre-cleaned steel hand auger or shovel without any coatings, or other acceptable PFAS-free equipment. Nitrile gloves will be worn by the sampling personnel. Materials such as aluminum foil, low density polyethylene, glass or polytetrafluoroethylene (PTFE) will not come into contact with the sampling equipment components or the sample containers. Any clothing containing PTFE material or that have been waterproofed with PFAS materials will not be worn at the sampling event. Decontamination of the sampling equipment utilizing detergent (Alconox®) and certified PFAS-free deionized water will be performed in between each sample. Regular ice will be used for sample preservation during transport to the analytical laboratory.

5.0 DOCUMENTATION AND CUSTODY

Sample preparation, documentation and custody are important elements of any QA/QC program. Without proper sample preparation and accurate documentation and tracking of sample custody, even well planned and properly implemented field sampling programs can generate data open to interpretation. For the purposes of this QA Plan, sample preparation and custody include containerization, preservation, container transfer to field personnel, field handling and sample custody, sample transfer to the laboratory, and internal laboratory custody during sample analysis.

Sample custody is initiated at the National Grid-approved laboratory where appropriate sample containers and preservatives, if required, are initially prepared for use for field personnel.

5.1 Sample Containers

Sample containers will be provided by the designated laboratory. The wide scopes of analyses performed during field sampling necessitate the use of several different types of sample containers. Container materials are selected so that there will be no interference with the analysis to be performed on the given sample. Each sample container will have a label that contains the information necessary to identify the sample. The information to be provided on the container label will include the following, at a minimum:

- A unique laboratory identification number,
- Sample identification,
- Sample location (and depth, if appropriate),
- Sampler's name,

- Date and time of collection, and
- Identification of any preservatives, if applicable.

Sample bottles, as used during this sampling effort, are prepared using only Contract Laboratory Program (CLP) approved cleaning techniques with quality control certified by the vendor. The bottles used are verified as non-contaminated by filling representative bottles with distilled water and analyzing the bottles for the parameters that would be analyzed using the specific bottle type. If any analytes are detected, the entire affected lot will be discarded and not used until the source of contamination is identified and remedied. Verification data is maintained on file at the laboratory.

5.2 Sample Preservation

Sample preservation is dependent upon the specific type or suite of analyses to be performed. A summary of sample container types and preservation methods is presented in Section 7.2. If necessary, sample preservatives will be added at the laboratory prior to shipment and identified on the sample bottle labels. Field personnel are responsible for verifying the addition of preservatives by visually examining the sample bottles, sample bottle labels, and the chain of custody. Any discrepancies will be reported immediately to the laboratory and field personnel will not use the bottles in question.

After samples are collected and transferred into their respective sample bottles by field personnel, the samples are packed on ice, maintained at 4°C, and delivered to the laboratory within twenty-four hours of collection. Samples will be maintained in a refrigerator (4°C) in the laboratory prior to analysis.

5.3 Preparation of Sample Bottles and Coolers

Coolers used for sample transport will be scrubbed clean prior to use with a non-contaminating detergent followed by a thorough rinse with organic-free distilled water. Coolers will then be dried before packing and use. All sample bottles are purchased new and specially cleaned and certified by the vendor. As per CLP requirements, the sample bottles for this sampling program will be used once for the specific job intended. Non-CLP projects permit the sample bottles to be re-used after thorough cleaning and verification of non-contamination as discussed earlier. All glass containers to be used will be individually packaged in “bubble-wrap” to prevent breakage during transport.

5.4 Custody Transfer to Field Personnel

A standard chain of custody form is utilized for documenting the receipt, tracking and compilation of sample data. The chain of custody (COC) procedure begins with the preparation of the sample bottles. After the

sample bottles have been prepared, the cooler to be used will be sealed with custody tape and an external chain of custody form prepared. At a minimum, the following information will be included on the COC at the time of shipment to field personnel:

- Container types including preservatives, if required,
- Number of containers required at each sample location for each analysis, including matrix spike/matrix spike duplicates (MS/MSD), trip blanks and field blanks,
- Any distinctive sample identification requirements,
- Sample custodian's signature with a date and time of relinquishment,
- Receiver's signature with a date and time of receipt.

Sample coolers will be picked up by field personnel at the laboratory. At this point, field personnel are in custody of the sample bottles.

5.5 Custody Transfer to Laboratory

Upon completion of field sampling, field personnel pack sample bottles, including any blank or duplicate samples, and seal the cooler with custody tape. Any breakage of bottles must be noted on the comment section of the COC. If lab prepared glassware is not to be submitted back to the laboratory for analysis, the line designating the unused sample bottles must be crossed-out with a single line through the entry, and the correction initialed by the person in custody of the samples. All corrections to the COC must be made with a single line through the incorrect entry and must be accompanied by the initials of the person in custody of the samples.

Field personnel must verify that the identification labels on the sample bottles and the COC are identical, and that all sample bottles are accounted for. Any discrepancies must be resolved before relinquishing custody of the samples. Once the field personnel are satisfied that the samples are ready for submittal to the lab, the cooler will be returned to the laboratory.

Upon receipt of the sample cooler at the laboratory, the sample custodian examines the exterior of the cooler to ensure that sample integrity has not been impacted. Once the laboratory is satisfied that the sample integrity has not been compromised, a lab sample custodian signs and dates the COC to acknowledge receipt of the samples. The field personnel, when hand delivering samples, shall also sign and date the COC acknowledging that they have transferred custody of the samples to the laboratory.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SAMPLES

There are generally three (3) types of QA/QC samples collected during field sampling programs: blank samples, duplicate samples, and spiked samples. Each of these types of samples serves a specific purpose. Blank samples provide a measure of contamination that may have been introduced into a sample set in either of two ways:

- in the field while the samples were being collected or transported, or
- in the laboratory during sample preparation or analysis.

Duplicate samples provide a quantitative measurement of the reproducibility of sample results and as such, provide a mechanism for measuring the accuracy of sample collection and laboratory analysis procedures. Spiked samples can be used in several ways; the most common of which are the determination of parameter recoveries and reproducibility of results. Parameter recoveries are important in discussing data usability and the possible use of pseudo-correction factors for site sample results.

6.1 Blanks

There are five basic types of blank samples: trip blanks, field blanks, equipment blanks, laboratory calibration blanks, and laboratory reagent (or method) blanks. Only trip blanks and equipment blanks are utilized by field sampling personnel.

Trip blanks are used to indicate potential contamination due to migration of volatile organic compounds (VOCs) from the air on the site or in the sample shipping containers into the sample. A trip blank consists of laboratory distilled and deionized water in a 40 ml glass vial sealed with a Teflon septum. The blank accompanies the empty sample bottles to the field as well as the samples returning to the laboratory for analysis.

Equipment blanks are used to determine if certain field sampling or cleaning procedures (e.g., decontamination of field equipment) result in cross-contamination of site samples. Like the trip blank, the equipment blank is a sample of distilled and deionized water taken to the field with empty sample bottles and analyzed with the site samples. However, unlike the trip blank, the equipment blank sample is prepared in the field. The equipment blank will be poured through or over the sampling equipment after the equipment has been decontaminated. The equipment blank is collected after cleaning the equipment and before next use. The equipment blank will be containerized and labeled in the same manner as other site samples. One (1) equipment blank per 20 field samples will be collected for each matrix type and submitted to the laboratory for the same analysis parameters as the field samples.

6.2 Duplicate Samples

Duplicate samples are used to assess the accuracy and repeatability of field procedures and laboratory analytical procedures. Duplicate site samples are generally collected so that the laboratory is “blind” to the source of the duplicate. Duplicate samples should be collected by sampling the given matrix in accordance with the procedures established for the project, except that approximately double the quantity of sample should be collected. Since sample recoveries are often a limiting factor as to which samples can be collected as duplicates, initial planning is important to ensure that sufficient sample volume is available for an accurate duplicate.

After collection of the sample, the sample will be divided evenly so that each 'half' sample is representative of the whole (i.e., the two samples should be as close to identical as possible). Each sample will then be labeled. The first sample will be labeled with the actual sample location and description. The second sample will be labeled with a fictitious sample identifier known only to the sampler and those responsible for data interpretation. The laboratory should not be informed of the presence of a duplicate sample. Both samples will then be submitted in an identical manner and documented on the COC. Analysis should include all parameters required for the original site sample. One (1) duplicate sample per 20 field samples will be collected over the course of the field sampling program.

6.3 Matrix Spiked Samples

Spiked samples are utilized to potentially improve combined sampling and analytical accuracy. The two spiked samples are identified as matrix spike and matrix spike duplicate (MS/MSD). For matrix spiked samples, a selected field sample is collected in triplicate following the same procedure as used for duplicate samples, discussed in section 6.2. In the laboratory, two of the field samples are spiked with a known concentration of a contaminant of interest. The recovery of the spiked compound is determined after laboratory analysis. The recovery serves as an indicator of the efficiency of the laboratory analysis, and more importantly from the standpoint of the field sampling personnel; the percent recovery can be used as a pseudo-correction factor for other sample results. Sample recoveries outside of a pre-determined control limit can also be used by the personnel responsible for data interpretation to assess the usability of site data. One (1) set of MS/MSD samples will be collected per 20 field samples as part of the field sampling program.

A summary of spiking compounds, method, low and high QC limits for spike recovery and relative percent difference values (RPD) for all matrices are included in **Appendix C**. Tables listing surrogate compounds, method, and acceptability QC limits for all sample matrices are also included.

7.0 ANALYTICAL PROCEDURES AND LABORATORY TESTING

7.1 Analytical Laboratory

Environmental samples will be analyzed by Pace Analytical Services, LLC, a National Grid-approved laboratory and New York State ELAP-certified.

7.2 Sample Analysis

All environmental samples will be analyzed by the laboratory and will include a NYSDEC ASP Category B data package that documents the quality of the analytical work. A summary of the desired parameters, methods of analyses, required sample container, preservative and maximum holding time is shown in **Table 2** for water matrices and **Table 3** for soil and solid matrices. The sample containers required for VOC analysis will be filled so that there is no headspace in the sample container. Water sample containers for VOCs will be sealed with Teflon lined septum caps. An Analytical Methods/Quality Assurance summary including information pertaining to all environmental, performance evaluation and quality control samples is provided in **Table 4**.

8.0 CALIBRATION PROCEDURES

8.1 Calibration Practices

Instruments and equipment to be used in the analytical laboratory are controlled by a formal calibration program. The program verifies that equipment is of the proper type, range, accuracy and precision to provide data compatible with the desired requirements. All instruments and equipment that measure a quantity with performance expected at a stated level are subject to calibration. Calibration may be performed by lab personnel using reference standards or externally by calibration agencies or equipment manufacturers.

Implementation of the laboratory calibration program is the responsibility of the Laboratory Manager and Analysts. The Laboratory QA Manager shall review the implementation of the program.

There are two types of calibration pertinent to the laboratory procedures to be utilized during the analysis of samples from the standpipe pit area. These are operational and periodic.

1.) Operational calibration which is routinely performed as part of the instrument usage, such as the development of a standard curve for use with an Atomic Absorption (AA)

Spectrophotometer or Inductively Coupled Plasma (ICP) Spectrophotometer. Operation calibration is generally performed for instrument systems.

2.) Periodic calibration is performed at prescribed intervals for equipment such as balances and controlled ovens. In general, equipment that can be calibrated periodically is considered a distinct single purpose unit and is relatively stable in performance.

Whenever possible recognized procedures, such as those published by ASTM, USEPA, or the equipment manufacturers shall be utilized.

8.2 Calibration Frequency

Instruments and equipment shall be calibrated at prescribed intervals and/or as part of the operational use of the equipment. Frequency shall be based on the type of equipment, inherent stability, manufacturer's recommendations, values provided in recognized standards, intended use, effect of error upon the measurement process, and prior experience.

8.3 Calibration Reference Standards

Two (2) types of reference standards are used by the laboratory for calibration. These are physical and chemical.

1.) Physical Standards, such as weights for calibrating balances and certified thermometers for calibrating working thermometers and ovens, are generally used for periodic calibration.

2.) Chemical Standards are primarily used for operational calibration.

Whenever possible, physical and chemical reference standards shall have known relationships to nationally recognized standards (e.g., National Bureau of Standards) or accepted values of natural physical constants. If national standards do not exist, the basis for the reference standard shall be documented.

8.4 Calibration Failure

Equipment that fails calibration or becomes inoperable during use shall be removed from service and segregated to prevent inadvertent use or shall be tagged to indicate it is out of calibration. Such equipment shall be repaired and satisfactorily recalibrated before reuse.

8.5 Calibration Records

Records shall be prepared and maintained for each piece of equipment subject to calibration. Records demonstrating accuracy of reference standards shall also be maintained.

For instruments and equipment that are calibrated on an operational basis, calibration generally consists of determining instrumental response against compounds of known composition and concentration or the preparation of a standard response curve of the same compound at different concentrations. Records of these calibrations can be maintained in several ways:

1.) The calibration data can be kept with analytical sample data.

2.) A logbook can be prepared for each instrument that contains all calibration data.

Method 1 provides response factor information, etc., directly with the analytical data so that the data can be readily processed and verified. Also, the raw data package is completed as a unit.

Method 2 provides an on-going record of calibration undertaken for a specific instrument. However, to process and verify the analytical data, the log must be used in conjunction with the raw data.

For operational calibration of instrumentation used for this project, calibration data will be included with the raw analytical data and maintained in project files.

9.0 DATA REDUCTION, VALIDATION AND REPORTING

9.1 Data Reduction

Laboratory data reduction and analysis for organic analyses involves relating a "peak area" to the mass of a constituent. This is accomplished by digital computers. The computer hardware and software are designed to allow the analyst to create libraries or files of calibration standards, and then compare raw sample data against these libraries to produce a report that contains the identification and qualification of constituents present in the sample. The analysts manually check the computer-reduced data.

Inorganic analyses are performed with instruments of varying electronic sophistication, but in all instances, data reduction and analysis involve essentially the generation of a standard calibration curve, and then comparing the instrument readout against the calibration curve to obtain a "Quantity" of constituent. The concentration is then manually calculated. The calculated results are manually entered into the computer system.

9.2 Data Validation

Data validation is a process in which field and analytical data quality is assessed relative to the data quality objectives. The validation process examines the acceptability or validity of data and assesses data usability. Although data validation usually refers to analytical laboratory data, the same review process is applied to all field-generated data.

In order to ensure that data collected in the field is consistent and accurate, standard reporting forms are utilized. These forms are then checked by the Field Team Supervisor to confirm that the information is complete and that any calculations are correct. A minimum of 20% of the field data reports is checked in this manner. If, during the initial review process, errors are identified, the remaining 80% of the data set are reviewed. Items to be checked by the reviewer will be dependent on the type of data being reported, but in general include the following:

- Proper sampling methods and equipment were employed,
- Proper sample preservation methods were followed,
- Chain of custody information is complete,
- Proper QA/QC samples were utilized,
- Equipment decontamination procedures were followed, and
- Instruments were properly calibrated.

The final analytical laboratory Category B data package generated as part of the gas condensate release OU-2 remediation will be evaluated for data validation by a third-party data validator. For this project, validation services will be provided by Vali-Data of WNY, LLC. A copy of the resume for Ms. Jodi Zimmerman of Vali-Data of WNY, LLC is provided as **Appendix D**. A Data Usability Summary Report (DUSR) will be prepared by the validator.

9.3 Data Reporting

The following are applicable to data presentation:

1.) The final presentation shall be checked in accordance with data verification requirements and approved by the Laboratory QA Manager.

2.) Data presentation will include:

a) Sample identification number used by Pace Analytical Services, LLC and/or the sample identification provided to the laboratory (if different).

b) Chemical parameters analyzed reported values, and units of measurements.

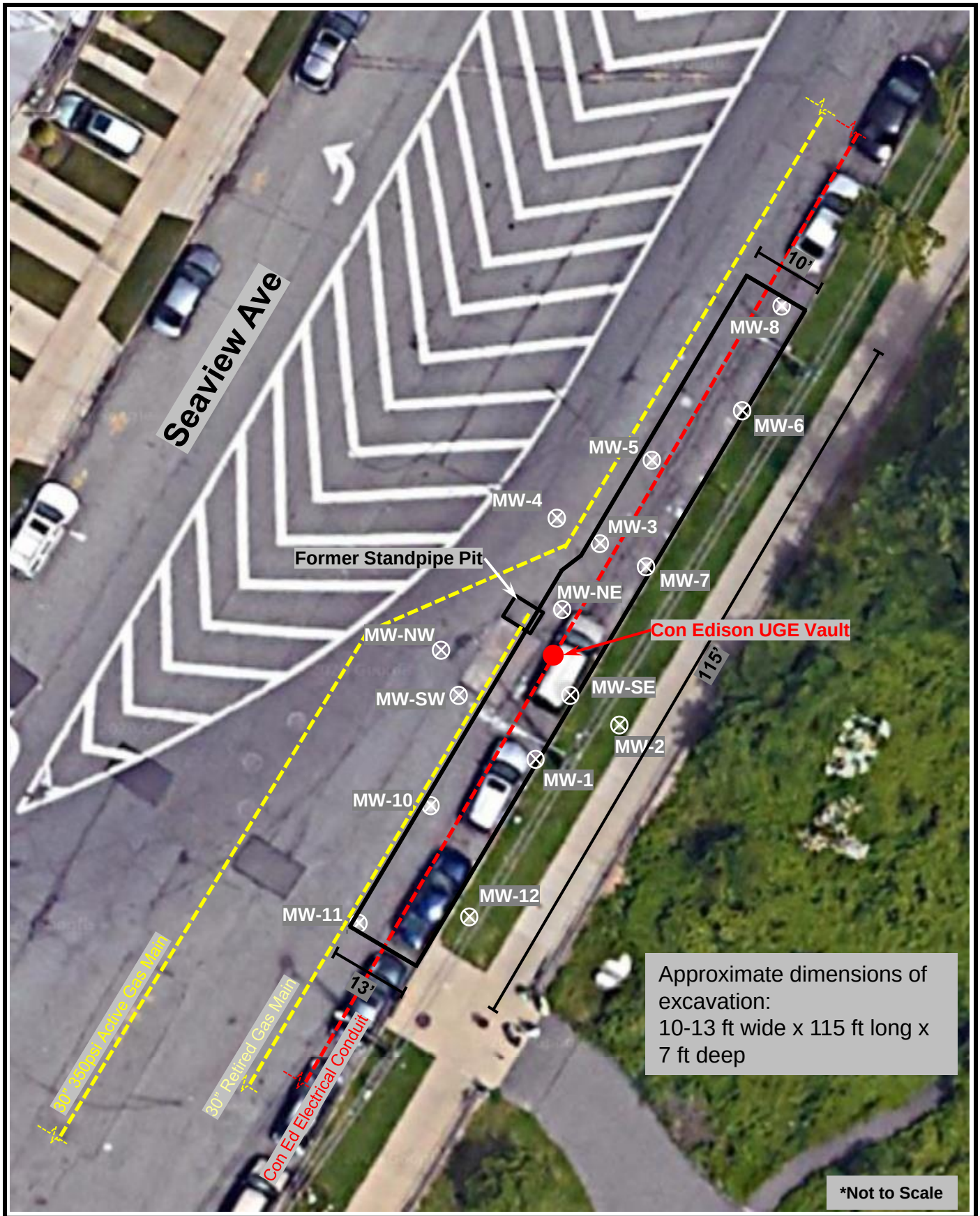
c) Detection limit of the analytical procedure, if the reported value is less than the detection limit.

d) Data for a chemical parameter are reported with consistent significant figures for all samples.

e) Results of QA/QC sample analysis, if appropriate.

f) Footnotes referenced to specific data, if required to explain reported values.

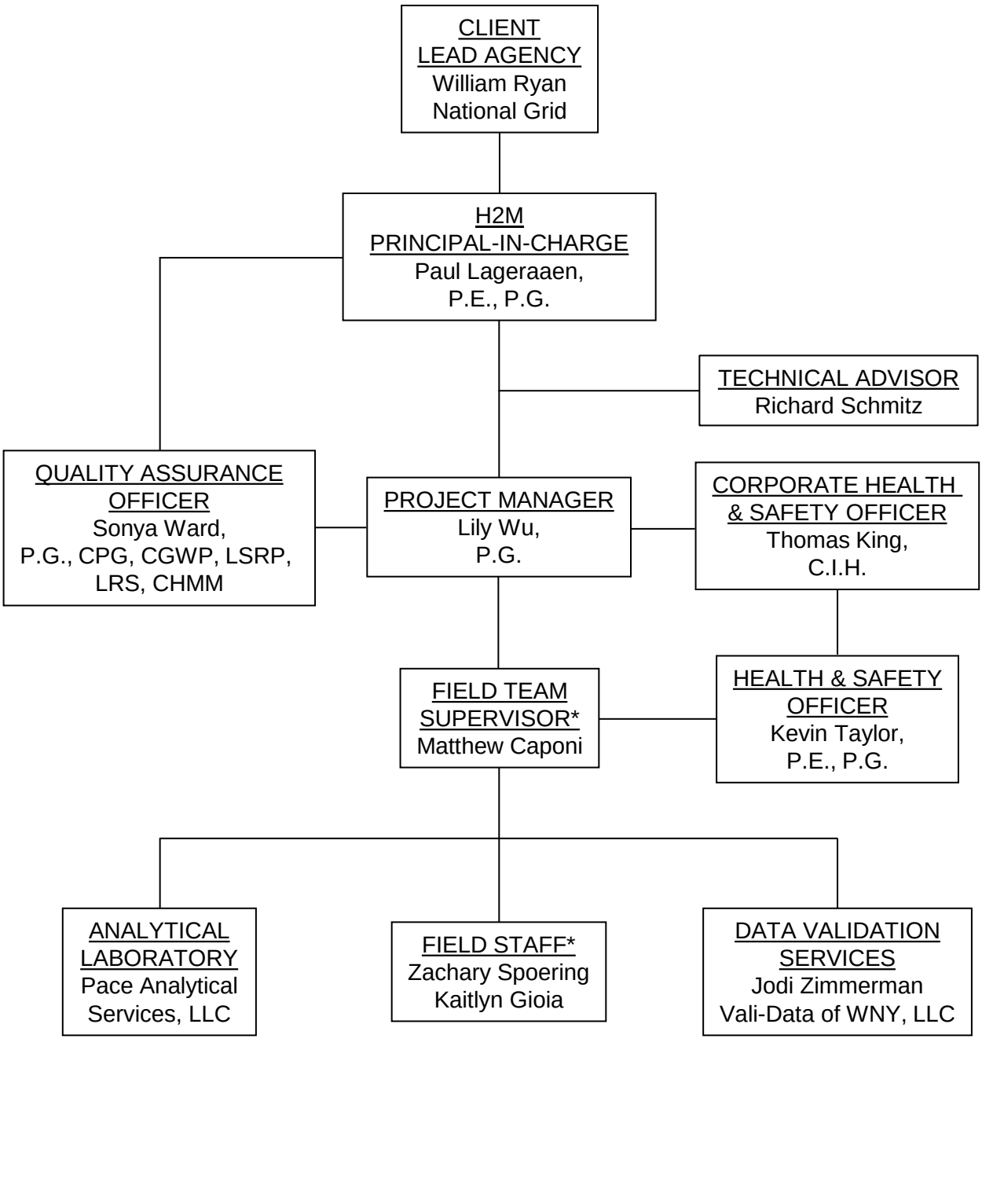
The format for reporting will follow the NYSDEC ASP Category B data package. All data will be made available in EQuIS Electronic Data Deliverable (EDD) Format.



QAPP Figure 1. Site Plan - Extent of Excavation
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

N

H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747



*Field team may be subject to change depending on availability at the time of IRM implementation

QAPP Figure 2. Organization Chart for Field Sampling and Analysis Program
Paerdegat Basin Gas Condensate Release
Paerdegat Ave North & Seaview Ave, Brooklyn, NY

H2M architects + engineers
290 Broad Hollow Rd, Suite 400E
Melville, NY 11747

Table 1. PFAS Analyte List

Group	Chemical Name	CAS Number	Laboratory Reporting Limit (RL) (ng/l)	Laboratory Method Detection Limit (MDL) (ng/l)
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.089	0.020
	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.091	0.024
	Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.095	0.018
	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.093	0.017
	Perfluorodecanesulfonic acid (PFDS)	335-77-3	0.097	0.018
Perfluoroalkyl carboxylates	Perfluorobutanoic acid (PFBA)	375-22-4	0.100	0.021
	Perfluoropentanoic acid (PFPeA)	2706-90-3	0.100	0.023
	Perfluorohexanoic acid (PFHxA)	307-24-4	0.100	0.032
	Perfluoroheptanoic acid (PFHpA)	375-85-9	0.100	0.028
	Perfluorooctanoic acid (PFOA)	335-67-1	0.100	0.019
	Perfluorononanoic acid (PFNA)	375-95-1	0.100	0.022
	Perfluorodecanoic acid (PFDA)	335-76-2	0.100	0.030
	Perfluoroundecanoic acid (PFUA/PFUdA)	2058-94-8	0.100	0.019
	Perfluorododecanoic acid (PFDoA)	307-55-1	0.100	0.031
	Perfluorotridecanoic acid (PFTriA/PFTrDA)	72629-94-8	0.100	0.020
	Perfluorotetradecanoic acid (PFTA/PFTeDA)	376-06-7	0.100	0.013
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate (6:2 FTS)	27619-97-2	0.095	0.031
	8:2 Fluorotelomer sulfonate (8.2 FTS)	39108-34-4	0.097	0.018
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide (FOSA)	754-91-6	0.100	0.028
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	2355-31-9	0.100	0.012
	N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	2991-50-6	0.100	0.022

Table 2. Water Matrix Analysis Requirements and Methods

Parameter	Method	Container	Preservative	Max. Holding Time*
Metals / Hg	EPA 6010 / 7470	250 ml Plastic	HNO_3 to pH<2	Metals: 6 months / Hg: 28 days
Hexavalent Chromium	EPA 7196	250 ml Plastic or Glass	Cool, 4°C	24 hours
Total Cyanide	SM 4500	250 ml Plastic or Glass	Cool, 4°C; NaOH to pH>12, plus 0.6 g Ascorbic Acid	14 days
PCBs / Pesticides	EPA 8082 / 8081	(2) 1L Amber	Cool, 4°C	Extraction within 7 days. Analysis within 40 days of extraction.
VOCs	EPA 8260	(2) 40 ml Vial	Cool, 4°C; HCl to pH<2	14 days
SVOCs	EPA 8270	(2) 1L Amber	Cool, 4°C	Extraction within 7 days. Analysis within 40 days of extraction.

*All holding times from time of sample collection.

Table 3. Soil and Solid Matrix Analysis Requirements and Methods

Parameter	Method	Container	Preservative	Max. Holding Time*
Metals / Hg	EPA 6010 / 7471	2 oz Jar	Cool, 4°C	Metals: 6 months / Hg: 28 days
Hexavalent Chromium	EPA 7196	2 oz Jar	Cool, 4°C	24 hours
Total Cyanide	EPA 9014/9010	2 oz Jar	Cool, 4°C	14 days
PCBs / Pesticides	EPA 8082 / 8081	4 oz Jar	Cool, 4°C	Extraction within 14 days. Analysis within 40 days of extraction.
VOCs	EPA 8260 / 5035	40 ml vials	Cool, 4°C; 2 vials with H_2O (freeze within 48 hours); 1 vial with MeOH; 1 vial unpreserved	14 days
SVOCs	EPA 8270	4 oz Jar	Cool, 4°C	Extraction within 14 days. Analysis within 40 days of extraction.
PFAS	EPA 537M	4 oz HDPE	Cool, 4°C	Extraction within 14 days. Analysis within 28 days of extraction.

* All holding times from time of sample collection.

Table 4. Analytical Methods/Quality Assurance Summary

Sampling Location	Matrix	No. of Samples	Analysis	Methods
1. Gas Condensate Release OU-2 Remediation				
a. Excavation Area	Soil	TBD*	Metals / Hg	6010 / 7471
			Hex. Chromium	7196
			Total Cyanide	9014/9010
			PCBs / Pesticides	8082 / 8081
			VOCs	8260
			SVOCs	8270
			PFAS	537M
2. QA/QC Sampling				
a. Trip Blank [1]	Aqueous	1 per day	VOCs	8260
b. Equipment Blank [2]	Aqueous	TBD*	Metals / Hg	6010 / 7471
			Hex. Chromium	7196
c. Duplicate [2]	Soil		Total Cyanide	9014/9010
			PCBs / Pesticides	8082 / 8081
d. MS/MSD [2]			VOCs	8260
			SVOCs	8270
			PFAS	537M

[1] One trip blank per day.

[2] Minimum of one set of QA samples per sample delivery group (SDG), i.e., 1 per 20.

*Number of samples depends on Contractor's means and methods of excavation.

QAPP APPENDIX A

RESUMES OF PROJECT TEAM MEMBERS

Paul R. Lageraaen P.E., P.G.

Vice President, Discipline Director of Environmental/ Forensics/Industrial Hygiene

Mr. Lageraaen is a Vice President with 28 years of experience in environmental engineering. His current roles and responsibilities include serving as H2M's Director of Environmental/Engineering, Forensics and Industrial Hygiene, which comprises approximately 60 staff members including engineers, scientists, forensic architects, technicians, and other professionals. Mr. Lageraaen oversees the technical execution of all projects within the Discipline serving the Education, Energy/Utility, Industry, Insurance, Municipal, Real Estate and Water/Wastewater Markets. Mr. Lageraaen is also the Director of H2M's Health & Safety Program with the responsibility to implement policies, procedures, practices and written plans to promote and ensure a safe work environment for all staff from administration and designers to field engineers and construction inspectors.

Mr. Lageraaen's diverse experience includes environmental due diligence, site investigation and remediation, spill response, stormwater and wastewater permitting, treatment and compliance, air emission permitting, regulatory compliance auditing, remedial design, petroleum and chemical bulk storage, tank and containment design, CERCLA and RCRA-driven compliance, indoor air quality, exposure assessments and evaluations, risk management, and damage assessments. Mr. Lageraaen has prepared many site investigation related documents as well as Spill Prevention Control and Countermeasure (SPCC) Plans, Stormwater Pollution Prevention Plans (SWPPPs) for industrial activity, RCRA and Facility Closure Plans, Hazardous Waste Contingency Plans, Spill Prevention Reports (SPRs), Best Management Practices (BMP) Plans, Health and Safety Plans (HASPs), and Quality Assurance Project Plans (QAPPs). Mr. Lageraaen also has extensive experience and training with hazardous materials, universal wastes, radioactive materials, accountable nuclear materials, mixed wastes and waste minimization planning.

Mr. Lageraaen serves as Program Director for multiple electric and gas utility blanket contracts for environmental services. Hundreds of projects have been successfully completed under these multi-task contracts including but not limited to: environmental permitting, environmental monitoring, oil and PCB spill response and long-term management, property asset management, facility closure, facility demolition and construction, industrial hygiene, worker exposure, waste treatment design, field construction oversight and regulatory compliance.

Selected project experience

- Directed Remedial Action projects under the NYC Brownfield Cleanup Program for sites in Brooklyn and the Bronx. Received a Big Apple Brownfield Award for the Bronx commercial redevelopment project on 125th Street.
- Directed a RCRA Closure Project at an Inactive Hazardous Waste Site and served as design engineer for the installation of a remedial soil vapor extraction system for chlorinated solvent contamination.
- Managed a comprehensive trace mercury sampling program at NYC power generation facilities for the local electrical utility.
- Engineer of Record for a NYS Brownfield Cleanup Program site in Astoria, NY with groundwater, soil vapor and historic fill contamination issues.
- Directed and provided engineering certification for the recent closure and demolition of electric power generating stations in Glenwood and Far Rockaway, NY. Closure services were required for or included Major Oil Storage Facility (MOSF) licensure, NYSDEC RCRA Closure, NYSDEC SDPES permitting and NYCDEP sewer connection permitting.
- Managed the environmental sampling components of Manhattan District Attorney and NYSDEC Police Investigations.

Next ⟶

Experience

H2M

Brookhaven National Laboratory

Stone & Webster, Environmental Services Division

Education

M.E., Chemical Engineering, McGill University

B.S., Chemical Engineering, State University of New York at Buffalo

Licenses/ Certifications

Professional Engineer: NY

Professional Geologist: NY

OSHA HAZWOPER

OSHA 30- and 10-hour Construction Safety

Roadway Protection Training, MTA/LIRR

Memberships

American Institute of Chemical Engineers

Articles/Papers

Full-Scale Technology Demonstration of a Polyethylene Encapsulation Process for Radioactive, Hazardous, and Mixed Wastes. Journal of Environmental Science and Health, Part A: Environmental Science and Engineering and Toxic and Hazardous Substance Control, Volume 31, No. 7, 1996.

Polyethylene Encapsulation of Depleted Uranium Trioxide. Emerging Technologies in Hazardous Waste Management 8, May 2000.

DUPoly Process for Treatment of Depleted Uranium and Production of Beneficial End Products. U.S. Patent 6,030,549. ESI Groundwater Flow & Contaminant Transport Modeling Course, Washington D.C, 2001

Paul R. Lageraaen
P.E., P.G.

Vice President, Discipline Director of Environmental/Forensics/Industrial Hygiene

- Directed and served as lead engineer for the design, installation and operation of an AS/SVE system required to address residual contamination that could not be excavated due to structural undermining concerns at a municipal maintenance garage. Project also included the replacement of gasoline and diesel USTs and a fueling island.
- Project Director for a $20 million soil remediation program involving approximately 175,000 tons of contaminated soil and debris including RCRA Hazardous and TSCA Regulated material.
- Served as the Project Manager for a part of an indefinite delivery, on-call contract during the initial spill response and currently as the director for the long-term remediation of a high-concentration PCB gas condensate release in Brooklyn, NY that implicated soil, groundwater, and surface water. Managed an environmental assessment for approximately 13 miles of an underground electrical distribution system as part of an asset transfer to a local utility.
- Designed a soil vapor intrusion mitigation system and a separate soil vapor extraction system to address 1,1,1-trichloroethane contamination beneath an existing commercial building.
- Managed an environmental investigation and the NYSDEC- approved remedy selection for lead contamination from a former rifle range in a public school basement.
- Prepared remedial design alternatives for groundwater contamination from a 24,000 gallon oil release that occurred beneath a busy intersection in a populated residential community.
- Project manager for multiple spill response investigations and remediation of transformer and dielectric cable fluid releases.
- Project manager for a groundwater remediation system to hydraulically control and remediate a subsurface 42,000 gallon oil release.
- Managed the remediation of a gasoline spill from a 4,000-gallon UST requiring excavation through the shallow groundwater table and beneath an existing building foundation.
- Managed multiple RCRA facility closure projects including a large circuit board manufacturing facility, three hazardous waste management units for a local utility, an industrial shop towel reclamation facility, and a plastic manufacturing facility.
- Developed a soil vapor mitigation system for a planned residential development to address chlorinated solvent contamination in groundwater and shallow soil vapor.
- Project manager responsible for the design and permitting of a 20,000 gallon underground storage tank used as secondary containment for flammable chemicals.
- Managed air compliance and auditing for a State Facility Air Emission Permit for two boilers associated with a steam plant at a Government Owned-Contractor Operated (GOCO) facility on Long Island.
- Managed indoor air quality and mold consultation projects for insurance companies, public and private companies, and school districts. Projects involve initial testing, preparation and review of remediation specifications, clearance testing, preparation and review of final reports.
- Managed an environmental compliance audit of a large pathology laboratory including air emissions, waste management (solid, universal, hazardous and medical wastes), wastewater and community right to know.
- Managed an environmental compliance audit of a generic pharmaceutical manufacturer including air emissions, waste management (solid, universal and hazardous wastes), wastewater and community right to know.

Sonya Y. Ward P.G., CPG, CGWP, LSRP, LRS, CHMM

Department Manager - Environmental Services

Ms. Ward has experience in site evaluation and remediation (soil, groundwater, surface water, sediment, and soil gas/indoor air), Phase I and II ESAs for numerous utility, manufacturing, petroleum, solid and hazardous waste disposal companies, foundries, and chemical facilities. She has experience in evaluating the environmental liabilities for sites ranging from residential to defense facilities. Ms. Ward assists clients in quantifying and presenting liabilities so they can easily be incorporated into a company's evaluation criteria for the transaction or EHS program. She also assists the client in prioritizing implementing compliance programs to bring facilities into compliance or closing/eliminating/limiting environmental liabilities. Her experience includes work throughout the United States (including NY, NJ, CT, PA, DE, MD), Canada, South America, and Europe.

Selected project experience

- NY Manufacturing Facility Site Investigation and Remediation. Managed the investigation and soil remediation for VOCs, PAHs, metals and PCBs at a pump foundry. Prepared work plans for investigation of soil, groundwater, surface water, sediment, soil gas, and indoor air at power house, petroleum and hazardous chemical and waste storage, storage tanks, and spill and transformer areas. Conducted soil remediation to address VOCs, petroleum, PCBs, and metals.
- NJ Utility UST No. 2 Fuel Oil Release. Managed the rapid response and site investigation and remediation of soil and groundwater impacts from UST piping and historic facility releases. Interim remedial measures were implemented immediately. The site investigation included soil, groundwater, soil gas and indoor air sampling, ecological evaluation, receptor evaluation, and public notification.
- Transformer Area PCB Investigation and Remediation, South Hackensack, NJ. Oversaw the site investigation and remediation of PCB-impacted soil in the area of a transformer pad. The work included surface soil sampling to characterize a soil excavation, preparation of all reports and forms, and regulatory negotiation.
- Pennsylvania Farm Show Expansion Project. Harrisburg, PA. Managed the asbestos and lead-based paint survey and abatement for the building during renovation and new construction. Prepared bid specifications, managed the third-party oversight contractor. This work was conducted under a strict schedule in order for Governor Tom Ridge to open the newly-renovated Farm Show Complex prior to leaving office and was completed on time and within budget.
- Industrial, Utility, and Real Estate Phase I and II ESA. Conducted over 100 worldwide. Phase I and II ESAs including (as needed) flood plain evaluation, wetlands evaluation, lead-based paint survey, asbestos survey, seismic survey, industrial hygiene evaluation, radon assessment, safety evaluation, compliance assessment, and mold evaluation.
- PA Utility Maintenance Yard UST Closure Program. Conducted UST Closure and site characterization for site heating and waste oil USTs at several facilities. Excated impacted soil and managed off-site disposal. Sampled soil for closure and site characterization, and prepared the UST Closure reports. No Further Action Letters were received for all sites.
- PA Utility MGP Investigation and Remediation Program. Managed a utility investigation and remediation program. The investigations included: evaluation of soil, groundwater, surface water, soil gas, and sediment; statistical data evaluation; groundwater modeling; and human health and ecological risk assessments. Assisted the client in remediating and achieving closure of one site under Act 2, and approval of a comprehensive Remedial Investigation Work Plan and Remedial Action Workplan for in-situ stabilization of coal tar for a second site. Conducted initial investigations of five former MGP sites, and completed a comprehensive program of prioritization of MGP sites for cleanup based on risk-based criteria. Created a program dashboard report for the client that provided program regulatory, deadline, work status, and financial status at a glance.

Next ⟶

Experience

H2M

AECOM (formerly ENSR)

PMC Environmental

Powell-Harpstead, Inc.

Triegel & Associates, Inc.

Education

M.S., Environmental Studies, Baylor University

B.S., Geology, University of Louisiana at Monroe

Licenses/Certifications

Professional Geologist: NY, PA, DE, TX, LA

Certified Professional Geologist, AIPG

Certified Ground Water Professional, NGWA

Certified Hazardous Materials Manager

Licensed Remediation Specialist

Licensed Site Remediation Professional

Offices Held

LSRPA Aspiring Professionals Committee Co-Chair

Society of Women Environmental Professionals, Chairperson

Memberships

Alliance of Hazardous Material Professionals

American Institute of Professional Geologists

Chemistry Council of New Jersey

New Jersey Society of Women Environmental Professionals

Project Management Institute

Society of Women Environmental Professionals of Greater Philadelphia

Sonya Y. Ward

P.G., CPG, CGWP, LSRP, LRS, CHMM

Department Manager -
Environmental Services

- PA Railroad Former Roundhouse and Active Rail Yard LNAPL Remediation. Investigated soil and groundwater at the site and designed a remediation system to remove four feet of diesel from groundwater in the unconsolidated aquifer directly above the soil/bedrock interface. Prepared bid specifications for the extraction system, conducted bid walk, reviewed contractor proposals, prepared permits, oversaw system installation and modification during installation, start up, shakedown; and conducted ongoing operations and maintenance.

- Mercury and Asbestos Investigation and Investigation and Remediation. Managed demolition and mitigation of mercury-impacted controls testing room in an active manufacturing building. Included notification of site personnel, removal of walls and structural support of walls and mezzanine, removal of ceiling, floor, and drain lines; industrial hygiene monitoring; and reconstruction of the walls and ceiling. Also included testing in accordance with PADEP Act 2 to demonstrate attainment of soil and groundwater standards for impacts below the floor slab. The site received liability relief for this area of concern through Act 2.

- Utility Multi-site Agreement (MSA) Program for MGP Sites, Northcentral and Northeastern PA. Prepared the Master Plan, Annual Plan, Sampling and Quality Assurance Project Plans (QAPP) for 11 former MGPs under Consent Order and Agreement PADEP. Work included site investigation of soil, soil gas, indoor air, surface water and groundwater, sediment, ecological and human health risk assessment. Included preparation of bid specs, management of bid specs, management of laboratory contractors and consultants, and peer review all reports, and management of an extranet for centralized document storage. All sites were investigated by December 31, 2006, as required by PADEP. Negotiated scope of work and represented client to agency and property owners.

- Remediation Design and Cost Evaluation for In Situ Chlorinated VOC Remediation at Industrial Facility, NJ. Evaluated remedial strategies, conducted pilot test and reviewed results, feasibility, and costs for dissolved chlorinated VOCs and dense non-aqueous phase liquid remediation in a fractured bedrock aquifer. Implemented injection of sodium lactate was selected as the remediation system based on the availability of biota, ease of injection, efficacy, and cost.

- PA Utility Environmental Liability Risk Evaluation and Prioritization, Multiple Sites in PA, MA, MD, TX, and IL. Managed a project to evaluate and identify power plant and hydroelectric plant EHS compliance issues. Assisted the client in creation of a matrix for prioritization, and prepared cost estimates to mitigate EHS liabilities. Created dashboard summary of EHS issues and range of costs, including Best Case, Most Likely Case, and Reasonable Worst Case costs for use by EHS managers and legal counsel.

Richard Schmitz

Senior Discipline Engineer

Mr. Schmitz has over 40 years of professional environmental experience and has spent 32 years working in the utility industry in the New York Metro Area. His experience includes site investigation and remediation, gas operations emergency and construction support, electric generation plant demolition, corporate environmental asset liability assessment and management, manufactured gas plant site management, corporate real estate due diligence and property transactions, hazardous and utility waste management, industrial hygiene, and water and wastewater engineering.

Experience

H2M

National Grid/Keyspan Energy

Ebasco Services Inc.

City University of New York

Florida Institute of Technology

City of Stuart Public Works Department

Oceanographic and Environmental Control Services Corporation

Martin County Planning and Zoning Department

Education

M.S., Environmental Engineering; Florida Institute of Technology

B.S., Oceanographic Technology; Florida Institute of Technology

Publications

"Introduction to Water Pollution Biology." Gulf Publishing Company, Houston, London, Paris, Zurich, Tokoyo, 1996. ISBN 0-88415-927-2

Encyclopedia Britannica entry "Water Pollution," Millennium Edition (2000), signed under City University of New York affiliation.

"Ozonation as a Polish Technology for In-Situ Bioremediation," M.C. Leahy, C.H. Nelson, A.M. Fiorentine, and R. J. Schmitz. Proceedings from the Fourth International

Selected project experience prior to H2M

- Environmental lead on many site investigations ranging from manufactured gas plant sites, spill incidents, waste disposal sites, Federal and state superfund sites, to a US weapons' production facility.
- Environmental project manager for two large electric generation plants and one internal combustion site demolition project. Responsibilities encompassed all phases of plant demolition including management and disposal of all hazardous and non-hazardous waste materials, environmental input on specifications and work plans, testing and investigations, decommissioning of RCRA storage areas, remediation of fuel storage areas, PCB decontamination of gas supply and cleaning of fuel oil supply lines, closure of all environmental permits, and final site capping, grading, and closure.
- Provided lead environmental support for many real estate transactions from standard due diligence, site assessments, development of Letters of Intent, P&S Agreements, leases and easements; as well as telecommunication master lease agreements and property supplements. Some of these transactions were negotiated and executed before, during, and after remedial actions.
- Provided environmental management for various utility construction projects particularly for natural gas regulator stations, building construction and renovation, fuel and storage tank removals, facility drainage systems, and new gas main installation.
- Lead engineer for Gas Operations for environmental support for utility gas line repairs, offsets and relocations, leak repairs, field maintenance, and needed response to emergency situations for any type of contamination issues that were encountered in the field. Also served as lead for gas infrastructure maintenance work such as gas scrubber filter replacement where filters were spontaneously combustible.
- Participated in development of corporate environmental liability assessment for over 100 manufactured gas plant sites, five steam electric generating stations, two coke plant sites and multiple internal combustion generation facilities. This involved historic reviews, site records reviews, data analysis, remedial costing, liability modeling, and site prioritization.
- Worked on various green initiatives including the siting, planning, and construction of four solar farms on environmentally compromised sites, and the planning, development, and construction of a single geothermal system designed to simultaneously serve multiple separate residential units.
- Directed and worked on many aspects associated with state and federal superfund sites from site investigations, 104E requests, general and special notice letter responses, data search and mining, PRP group participation and chairmanship, liability allocation negotiation and assessment, direct support to Legal on litigation, and regulatory agency interfacing and negotiating.
- Responsible for environmental regulatory compliance for utility corporation, as well as compliance of individual power plants and operations facilities.
- As an emergency responder, directed utility spill response for hundreds of spills of fuel, dielectric, and hydraulic oils, PCBs, natural gas condensate, mercury, and other hazardous materials. Participated as a first responder as "electric survey" for storm restoration, particularly Superstorm Sandy, for damage identification and assessment and repair coordination.

Next ⟶

Richard Schmitz

Senior Discipline Engineer

Symposium on "In-Situ and On-Site Bioremediation." Battelle Press, Columbus, OH. April 1997.

"Biosparging for In-Situ Treatment of Manufactured Gas Plant Residuals," M.C. Leeahy, A.M. Fiorentine, and R.J. Schmitz. Proceedings from the Fourth International Symposium on "In-Situ and On-Site Bioremediation," Battelle Press, Columbus, OH. April 1997.

"Combining Oxidation and Bioremediation for the Treatment of Recalcitrant Organics," R.A. Brown, C.H. Nelson, W. Leonard, P. Hicks, and R.J. Schmitz. Proceedings from the Ninth International Symposium on Oil, Gas, and Environmental Biotechnology, sponsored by the Institute of Gas Technology (IGT). 1996.

"Case Study of Cost Effective Solution to Hazardous Waste Problem at the State Level," presented at the Fifth National Energy Bureau Conference on Hazardous Waste Management, Arlington, VA, April 1983.

Teaching

Full Time and Adjunct Professor at Florida Institute of Technology and City University of New York at York College; Courses include: Environmental Science and Engineering, Water Pollution Biology, Water and Wastewater Engineering, Marine Biology, Energy Technology, and Waste Management.

Lily Wu P.G.

Project Scientist

Ms. Wu's responsibilities include spill-related response and remediation; soil, wastewater and groundwater sampling; supervision of groundwater monitoring programs; preparation of spill closure reports, Discharge Monitoring Reports (DMR); and Phase I and Phase II Environmental Site Assessments. Ms. Wu also supervises, mentors, and assists staff scientists with their project activities.

Experience

H2M

EMSL Analytical, Inc.

Education

B.S., Geology; State University of New York at Stony Brook

Licenses/ Certifications

Professional Geologist: NY

Hazardous Waste Operations and Emergency Response, OSHA 40-hour

OSHA 10-hour Construction Safety and Health

DOT HazMat General & Security Awareness

H2M Project Management Training

Selected project experience

- Project Manager for a PCB-contaminated gas condensate spill release in a NYC residential/public park area which impacted a surface water body. Responsibilities included emergency spill response, investigation of impacted boats and marinas, subsurface soil and groundwater investigation and remediation, and preparation of work plans and investigation reports.
- Supervised staff scientists in performing lead in water sampling and carbon monoxide monitoring for various school districts on Long Island.
- Managed and performed Phase I Environmental Site Assessments for numerous commercial, industrial, institutional, and residential properties located throughout Long Island, New York City, Upstate New York, and Connecticut. Clients have included homeowners, developers, utility companies, school districts, and municipalities.
- Project Manager for on-call sampling and consulting services for natural gas construction projects located in NYC and Long Island, providing support for soil management, performing soil characterization, soil screening, coordinating transportation, soil disposal, and manifesting. Performed hazardous waste characterization for liquid and soil samples.
- Project Manager for various site investigation and remediation projects throughout Long Island and NYC, including a NYS Superfund site undergoing a RCRA Closure and a marina redevelopment/subdivision for residential use. Prepared and implemented regulatory-approved closure plans and work plans.
- Conducted Phase II Environmental Site Assessments for various commercial properties throughout New York City and Long Island, which involved subsurface soil, groundwater and soil vapor investigations.
- Prepared Closure Plans and Quality Assurance Project Plans for the closure of Major Petroleum Facility Licenses, Hazardous Waste Generator permits, and SPDES permits for power stations.
- Oversight of spill response and remediation of multiple transformer oil releases at various electric substations in Nassau and Suffolk Counties.
- Oversight of remediation activities involving dielectric cable fluid releases.
- Implementation of Community Air Monitoring Programs (CAMPs) for a project overseen by the New York City Office of Environmental Remediation, and in support of the decommissioning and demolition of a power station in Glenwood Landing, NY.
- Prepared a Hazardous Waste Reduction Plan for a pharmaceutical client in Melville, NY.
- Conducted soil and groundwater investigations for the installation of a communication tower and the rerouting of overhead power lines.
- Wastewater monitoring and sampling for several power plants and pharmaceutical facilities.
- Performed sanitary system investigations at commercial and industrial facilities.
- Assisted in sampling and obtaining evidence for waste oil investigations for the Manhattan District Attorney and NYSDEC.
- State Pollutant Discharge Elimination System (SPDES) permitting and sampling for power plant facilities, and management of Underground Injection Well Inventories for municipalities in Suffolk County.

Thomas B. King CIH

Project Engineer

Mr. King is a Certified Industrial Hygienist (CIH) with 10 years of environmental consulting experience in New York and New Jersey. He holds a Bachelor's Degree in Environmental Science from the University of Limerick, Ireland; and a Master's Degree in Environmental Engineering from Chungbuk National University (CBNU), South Korea. His post-graduate research work at the Environmental Systems Engineering Laboratory at CBNU in South Korea for three years conducting hydrology, soil erosion, and space syntax research. He taught Environmental Science and English Language at CBNU for three years and also studied Korean language at CBNU and Seoul National University. Mr. King's work experience in Ireland includes working as an Environmental Scientist for Dairygold Co-operative Society involved in environmental reporting and wastewater treatment operations at their facilities in Mitchelstown, Co. Cork. Mr. King also worked on more than 10 archaeological excavations across Ireland and one in Albania.

Experience

H2M

M&M Environmental

Education

M. Eng Environmental Engineering, Chungbuk National Univeristy

BS, Environmental Science, University of Limerick

Licenses/ Certifications

Certified Industrial Hygienist (CIH) by ABIH

Qualified Environmental Professional (QEP) by IPEP

NY DOL Licensed Asbestos Inspector and Mold Assessor

NYCDEP Certified Asbestos Investigator

NYCOER Gold Certified Professional

40 Hour HAZWOPER Training

OSHA 10 Hour Construction Safety & Health

OSHA 30 Hour Construction Safety & Health

OSHA 8 Hour Confined Space Entry Training

EPA Method 9 Visible Opacity Reading Certificate

H2M Project Management Training

OSHA Authorized General Industry Safety Trainer

Selected project experience

- Working with multiple large utility companies and local municipalities to perform industrial hygiene surveys for the protection of employees from occupational hazards including exposure to silica, mercury, mold, VOCs, asbestos, PCBs, corrosive chemicals, noise, and ionizing and non-ionizing radiation.
- Serving as H2M's corporate health and safety manager has included annual employee respirator fit testing, instituting, and maintaining various health and safety plans, including respiratory protection, bloodborne pathogens, and hazard communications, annual and new hire safety training, building a corporate health and safety database, ensuring compliance, and contributing to the overall health and safety culture of the company.
- Serving Long Island based school districts with services including surveys of asbestos containing materials, indoor air quality, mold and hazardous materials, due diligence review of contractor health and safety plans, and survey of laboratory acid-neutralization tanks.
- Serving the Insurance, Real Estate, and general Industry Markets with technical review of industrial hygiene reports related to exposure to chemical vapors, mold, silica, asbestos, radon, VOCs, and other IAQ contaminants.
- Teaching health and safety classes, accredited by NYSDOH and NYSDEC, in such topics as respiratory protection, hearing conservation, hazard communication, personal protective equipment, toxicology, confined space entry, and lockout/tagout.
- Pre-construction building condition assessments related to the Gowanus canal superfund site remediation project.
- Hundreds of field investigations related to insurance claims involving property damage and indoor air quality issues.
- Performing community noise assessments in support of environmental impact assessments (EIAs).
- Soil Vapor investigations for the Real Estate Market.

Next ⟶

Thomas B. King
CIH

Project Engineer

Selected project experience prior to H2M

- Environmental project management including contaminated soil excavation and disposal from NYCOER E-designated properties and design and construction of sub-slab de-pressurization systems (SSDSs) including a six-story 2,500 square foot footprint commercial building in Long Island City.
- Hundreds of mold assessments, asbestos inspections, and indoor air quality (IAQ) surveys involving sampling for dust, silica, and VOCs for large commercial clients.
- IAQ management during construction of a new 150,000 square foot theater space in midtown Manhattan for credits toward LEED certification.
- Instituting and maintaining written safety plans including a respiratory protection program.
- Post-graduate research work at CBNU included research into the use of space syntax analysis models for use in conjunction with hydrology modeling software, analyzing local rainfall patterns in order to model climate change scenarios using Cligen (a stochastic weather generator) and the Water Erosion Prediction Project (WEPP), learning and tutoring other students in the use of hydrology software including the Surface Water Modeling System (SMS) and ArcGIS desktop.
- Work experience at Dairygold Co-Operative Society in Co. Cork, Ireland included day to day operations of the wastewater treatment plant (WWTP), sampling and laboratory analysis of wastewater at various stages of treatment and surface waters in the local watershed, analysis of various dairy byproducts such as waste whey destined for use as pig feed, labelling components (pipes, pumps, valves, etc.) of the WWTP and investigating releases of process water and other fluids to groundwater from the manufacturing areas of the facility.
- Archaeological sites that Mr. King has worked on include: various Neolithic settlements through Co. Wicklow and Co. Wexford encountered during the construction of the M11 motorway, Neolithic wetland settlements and trackways in Co. Longford and Co. Offaly, excavation documentation or remains in a medieval cathedral in Naas, Co. Kildare prior to the development of a new multi-story car park, and excavation of the Roman Triconch Palace at Butrint in modern Albania.

Kevin M. Taylor P.E., P.G.

Assistant Vice President, Department Manager

Mr. Taylor is the Department Manager of the Environmental Services discipline in the Melville, NY office. Mr. Taylor is actively involved in department management roles, client development, project scheduling, field work supervision, and providing mentoring and professional development opportunities to the Environmental Services group.

Environmental experience has included management of large and small scale site characterizations and remedial investigations, Phase I and II environmental assessments, 24-hour spill response services and program management, spill related site investigations, work plans, underground injection control structure remediation, groundwater sampling and monitoring, providing expert witness and litigation support services and forensic investigations. Mr. Taylor also has experience in providing training to clients in environmental remediation and testing related services. He also serves of H2M's Corporate Safety Committee, bringing expertise and perspectives in field work driven services and fire safety to the committee.

Experience

H2M

Laurel Environmental Associates, Ltd.

Education

M.S., Geosciences; State University of New York at Stony Brook

B.S., Biology; State University of New York at Stony Brook

Licenses/ Certifications

Professional Engineer: NY, NC, MD, VA

Professional Geologist: NY

OSHA 40-hour HAZWOPER

OSHA 8-hour HAZWOPER Supervisor

OSHA 30-hour Construction Safety and Health

OSHA 10-hour Construction Safety and Health

NAFI Certified Fire and Explosion Investigator

NAFI Certified Fire Investigation Instructor

NYSDEC Certified Class A/B Operator of Underground Storage Tank Systems

IAAI Fire Investigation Technician

LIRR Roadway Worker Protection

Selected project experience

- Directed a hazardous materials assessment and environmental impact study (HMA/EIS) prior to the rehabilitation of subsurface utilities within an 11-mile corridor in Nassau County, NY. The HMA/EIS included a review of regulatory database records and an analysis of recognized environmental conditions along the project corridor. In addition, soil and groundwater sample data was obtained and compared to the 6 NYCRR Part 375 Soil Cleanup Objectives and 360.13 Special requirements for pre-determined beneficial use of fill material. Based upon the HMA/EIS, plans were developed for the institution of SPCC Plans, Soils Management Plans, Pollution Prevention Plans and Permit Required Confined Space Entry Plans.
- Development and review of Spill Prevention, Control, and Countermeasure Plans, and Facility Response Plan for a power plant in Queens County, NY.
- Provided technical assistance during the remediation of petroleum impacted soils and groundwater at a New York City School Construction Authority property and adjoining sites. Tasks included the development of Health and Safety Plans, Community Air Monitoring Plans, Investigation and Remedial Workplans in addition to preparing specifications and designs for remedial work.
- Provided investigation and consulting services following the improper excavation of 70,000 cubic yards from a 2.1 acre site. Provided guidance regarding backfill specifications and routine sampling and analysis of soils for six NYCRR Part 375 list environmental parameters, sieve, and gradation analysis. Mobilized staff to witness and observe excavation activities on behalf of the local Town.
- Completion of air facility registrations and permit applications (NYSDEC Minor and State permits) and permit closures for various industrial and commercial facilities.
- Assessment of hydrogen generation during lead-acid battery charging activities during pharmaceutical facility operations. Comparison of data collected to the LEL and UEL of hydrogen and provided Best Management Practices for continued facility operations.
- Investigation of fire and explosion events to determine origin and cause at multiple locations in the five boroughs and surrounding area. Author of substantive revisions to NFPA 921 - Guide to Fire & Explosion Investigations - 2021 edition, specifically with regards to Chapter 13 Safety and asbestos.
- Initial site assessments to determine the potential for petroleum related impact. Review of site and spill incident history to determine potential for subrogation of claim costs. Technical assistance and monitor contractor during remedial activities. Hydrogeological Investigations. Reporting to regulatory agencies. Testimony given during arbitration hearings to assist with liability determinations referencing National Oilheat Research Alliance Recommendations and National Fire Protections Association codes.

Next ⟶

Kevin M. Taylor

P.E., P.G.

Assistant Vice President,
Department Manager

Presentations/ Publications

Revisions to NFPA 921 - Guide to Fire & Explosion Investigations - 2021 Edition

Webinar: "Understanding Safety Concerns: Asbestos at the Fire Scene." National Association of Subrogation Professionals, www.subrogation.org, May 2018.

"After the Fire - Asbestos and Other Hazards Pose Risk to Fire Investigators and Claims Personnel." CLM - Claims Litigation Management Alliance, February 2018.

Memberships

Claims Litigation & Management Alliance - Property Committee

International Association of Arson Investigations

IAAI NYS Chapter - Peer Review Committee

Long Island Association of Professional Geologists

- Evaluation of heating and fuel consumption records to assess if heat was maintained at various properties.
- Managed a 24-hour spill response program responding to petroleum releases to provide environmental consulting services when needed.
- Provided detailed analysis of contractor invoices for a sulfuric acid discharge in New Mexico.
- Based on Phase I ESA and Phase II ESA findings, generated various plans including In-Situ Soil Characterization Plans, Health and Safety Plans, Soils Management Plans, and Remedial Investigation and Remedial Action Plans for various contaminants at commercial and industrial properties. Provided technical oversight as necessary to facilitate remedial activities. The services included review of daily work logs, contractor equipment and rental charges for consistency with the scope of services provided and invoiced for.
- Phase I Environmental Site Assessments at properties of various usages. Phase II Subsurface Investigations at industrial, commercial, agricultural and residential properties.
- Assessment of an industrial park in Downers Grove, Illinois. Determined EPA mandated activities to be performed within the park, researching each property individually and assisted the insurance company with assigning a proportional risk based on number of activities to be performed at each site.
- Technical assistance during the removal of one 10,000-gallon underground fuel oil storage tank and excavation and disposal of approximately 1,500-tons of fuel oil impacted soil.
- Technical assistance during the removal of 1,000-cubic yards of petroleum impacted soils during excavation and installation of a building footprint. This project involved the coordination of contractors, regulatory authorities and clients. Collected confirmatory endpoint soil samples for future analysis and submission of a detailed closure report to NYSDEC.
- Technical assistance during the remediation of a minimal overfill from a 4,000-galllon vaulted basement aboveground fuel oil storage tank and the large volume discharge due to corrosion from beneath the tank. Collected forensic evidence for later subrogation events with a report documenting findings.
- Technical assistance during the removal of multiple underground fuel oil storage tanks at a condominium complex. Collected soil samples for age dating purposes. Evaluated groundwater flow direction and several fuel oil markers to determine the retardation and effective flow rates of select volatile and semi-volatile organic compounds in groundwater. Utilized these calculations to support the subrogation of claim costs against potentially responsible parties.
- Testimony in State Court as an expert regarding the investigation and subsequent remedial activities associated with a petroleum discharge.
- Conducted worker exposure assessments and flammability investigations at a pharmaceutical facility in Suffolk County, New York.

Prior to H2M, Mr. Taylor was an environmental consultant for a subsurface investigation company, a subsidiary of Laurel Environmental Associates, Ltd. As such, he was responsible for direct push equipment operation, billing and project management and performing Phase I and Phase II reports. Mr. Taylor has been involved in the collection of subsurface soils and groundwater at numerous properties throughout Long Island and the five Boroughs of New York City.

Matthew J. Caponi

Staff Scientist

Mr. Caponi's responsibilities include spill investigation and response, Phase I ESAs, Subsurface Investigations, NYC Petroleum Bulk Storage UST registrations, modifications, and closure related services, environmental remediation oversight, groundwater monitoring, and various environmental media sampling. Mr. Caponi's proficient with working with contractors and regulators alike, various field instrumentation including but not limited to photo-ionization detectors, water quality meters, and peristaltic and submersible pumping systems.

Selected project experience

- Lead field personnel and project management for semi-annual groundwater sampling and analysis for approximately 10 MTA/NYCT bus depots. Extracted groundwater from multiple wells for VOC and SVOC analysis and submitted samples to an approved laboratory. Interpretation of laboratory results relative to NYSDEC groundwater standards.
- Oversaw the functionality/hydrostatic testing of diesel/bulk fluid storage tank fueling systems for approximately 26 different NYCT/MTA Bus Depots consistent with NYS Petroleum Bulk Storage regulations.
- Performed Indoor Air Quality (IAQ) sampling, analysis, and reporting for multiple clients. Interpreted laboratory results to NYSDOH and other regulatory standards.
- Support utility companies with natural gas construction projects on an as needed basis. These projects include pre-construction soil characterization, coordination of soil loadout and off-site disposal of soils, environmental oversight during excavation, and potential exposure evaluations.
- Remediation oversight of multiple dielectric cable fluid spills throughout Nassau and Suffolk Counties. Also provided maintenance and diagnostic services for a high-volume pump and treatment system.
- Engineering analysis of remedial costs incurred for petroleum remediation sites. Evaluated costs relative to industry standards, scope of services provided and regulatory requirements, and a benefit analysis.

Experience

H2M

Preferred Environmental Services

Education

M.S., Environmental Sustainability; Long Island University - Post (LIU Post)

B.A., Environmental Studies; Stony Brook University

Licenses/ Certifications

OSHA 40-hour HAZWOPER

OSHA 10-hour Construction Safety

DOT HazMat General/Security Awareness

LIRR Roadway Worker Protection

Zachary J. Spoering

Staff Scientist

Mr. Spoering serves as a staff scientist for numerous fuel oil spill claims each year. His responsibilities include inspection of residential and commercial oil spill sites for insurance companies to evaluate subsurface soil and groundwater impacts, coverage and subrogation potential. He is also involved in review and revision of contractor invoices, proposals and provides consultation during remediation to ensure cost effectiveness as well as compliance with regulations mandated by the New York State Department of Environmental Conservation (NYSDEC). Mr. Spoering works with regulatory agencies, contractors and homeowners throughout the entire remedial process to attain spill closure.

Mr. Spoering also provides services as a wetland scientist for clients requiring permits from regulatory agencies for proposed projects impacting freshwater and tidal wetland habitats. He additionally provides delineation services in order to determine jurisdictional wetland boundaries in conformance with delineation methodologies approved by the regulatory agencies. Mr. Spoering has developed a strong knowledge on wetland project development over several years of experience working on numerous wetland projects.

Experience

H2M

B. Laing & Associates Inc.

New York State Department of Environmental Conservation (internship)

Education

B.A., Environmental Studies; Stony Brook University

Licenses/ Certifications

Hazardous Waste Operations and Emergency Response, OSHA 40-hour

OSHA 10-hour Construction Safety & Health

NYSDEC Certified Class A/B Operator of Underground Storage Tank Systems

Selected project experience

- Site inspections and evaluations on behalf of multiple national insurance companies with focus on determining liability, subrogation potential and delineation of environmental impact with respect to petroleum releases. Comprehensive reporting and communications with clients, property owners and regulatory agencies.
- Forensic investigation into petroleum releases, including meticulous collection of soil and groundwater samples, interpretation of GC/FID analytical results, detailed reporting to insurance clients with respect to the timeframe of long-term petroleum releases.
- Daily oversight on long term projects that require the removal of oil impacted soil. Works closely with contractors, environmental consultants, the NYSDEC, and property owners during environmental remediation projects.
- Responsible for maintaining communications with the NYSDEC to facilitate rapid spill closure. Coordinates well monitoring event schedules with contractors. His involvement with residential and commercial oil spill claims has resulted in the successful removal of a multitude of active spill files from the NYSDEC Spill Incident Database.
- Conducts freshwater and tidal wetland delineations to determine and establish jurisdictional wetland boundaries based on methodologies laid out by NYSDEC and the Army Corps of Engineers.
- Knowledgeable in environmental laws and regulations pertaining to wetland land use including, Articles 24 and 25 of the Environmental Conservation Law and Parts 661 through 664 of the New York Codes Rules and Regulations.
- Analyze the existing conditions of a wetland and evaluate proposed project impacts qualitatively and quantitatively. Propose practical and effective methods to alleviate and mitigate negative environmental project impacts.
- Assists in preparation and submittal of various wetland permit applications required by the NYSDEC and Army Corps of Engineers. Additionally, corresponds with with clients and applicable state agencies in order to expedite acquisition of permits for projects.

Prior to H2M, Mr. Spoering was a technical scientist for an environmental consulting firm primarily involved in freshwater and tidal wetland delineation and mitigation. He gained experience in regulatory compliance, SWPPP development as well as conducting Phase I and Phase II environmental assessments. He also corresponded regularly with government agencies including the NYSDEC and Army Corps of Engineers. Additionally, Mr. Spoering interned with the NYSDEC, further gaining experience in regulatory compliance, assisting in delineation of tidal/freshwater wetlands, carrying out Hurricane Sandy general permit compliance inspections and observing violation meetings.

Kaitlyn A. Gioia

Staff Scientist

Ms. Gioia serves as a Staff Scientist within the Environmental Group. Her responsibilities include inspection of residential and commercial petroleum spill sites for insurance companies to evaluate subsurface soil and groundwater impacts, coverage, and subrogation potential. She is also involved in review and revision of contractor invoices, proposals, and provides consultation during remediation to ensure cost effectiveness; as well as compliance with regulations mandated by the New York State Department of Environmental Conservation (NYSDEC). Ms. Gioia works with regulatory agencies, contractors, and homeowners throughout the entire remedial process to attain spill closure.

Ms. Gioia is also responsible for maintaining communications with the NYSDEC to facilitate rapid spill closure. She coordinates well monitoring event schedules with contractors. Her involvement with residential and commercial oil spill claims have resulted in the successful removal of a multitude of active spill files from the NYSDEC Spill Incident Database.

Selected project experience

- Site inspections and evaluations on behalf of multiple national insurance companies with focus on determining liability, subrogation potential and delineation of environmental impact with respect to petroleum releases. Comprehensive reporting and communications with clients, property owners, and regulatory agencies.
- Forensic investigation into petroleum releases, including meticulous collection of soil and groundwater samples, interpretation of GC/FID analytical results, detailed reporting to insurance clients with respect to the timeframe of long-term petroleum releases.
- Community air monitoring during paint removal for a natural gas conduit at a large government facility. Monitored for the presence of dust, lead, and volatile organic compounds in air at locations up-gradient and down-gradient from the work area.
- Collection of suspected sanitary contaminated water within electric vaults within the NYC area. Reviewed analytical reports and assessed for the presence of sanitary waste indicators. Provided recommendations as necessary for each vault location.
- Chatham, NY – Provided alternate potable water sources. Provided environmental consulting services to an insurance company regarding a petroleum spill at a residential property. During the investigation, it was determined no significant remedial activities were provided at the spill site, some 14 years prior to H2M's involvement. Reviewed geological and remedial summary reports to assess for the potential for subsurface impact remaining. Reviewed historical quarterly sampling and analysis reports that were monitoring for the presence of dissolved VOCs at the site. Based on the presence of long-term dissolved phase VOCs remaining in groundwater 14 years after the initial incident, determined a un-remediated source area remains. To alleviate potential for exposure to site residents, recommended the installation of a new potable well. Witnessed and observed the installation of a new well using air rotary drilling techniques.
- Provide monitoring services at spill sites contaminated with dielectric cable fluid on behalf of utility company clients.
- Asbestos Hazard and Emergency Response Act (AHERA) inspections and evaluations in schools.
- Conducted lead in drinking water assessments for lead in water at various school districts. Coordinated for district convenient sampling dates and times to ensure district operations were not interrupted. Sampling and analysis were conducted consistent with USEPA and NYSDOH guidance documents to evaluate for the presence of lead within piping and fixtures. Provided comprehensive reports detailing findings.

Next ⟶

Experience

H2M

Education

B.A., Environmental Studies; Adelphi University

Licenses/Certifications

Hazardous Waste Operations and Emergency Response, OSHA 40-hour

OSHA 10-hour Construction Safety Training Course

New York State Department of Labor, Asbestos Inspector License Certification

New York State Department of Environmental Conservation, Class A/B Operator of Underground Storage Tank Systems

Dig Safely New York, Inc. Excavator Safety and Buried Utilities Training 2017

Land Science A Division of Regenesis Training Webinar - Vapor Intrusion: Impact on Environmental Due Diligence April, June 2017

USEPA Lead Based Paint Inspector

LIRR Roadway Worker Protection

NYSDEC 4-Hour Erosion and Sediment Control Contractor Training

Publications

Dutton, J.; Gioia, K.A.; Fisher, N.S., Madigan, D.J.; (2016) Tissue distribution of mercury in female spiny dogfish (Squalus acanthias). Society of Environmental Toxicology and Chemistry South-Central Regional Meeting. Fort Worth, TX.

Dutton, J.; Gioia, K.A.; Fisher, N.S.; Madigan, D.J.; (2016) Maternal transfer of mercury in spiny dogfish. 12th International Congress on the Biology of Fish. San Marcos, TX.

Dutton, J.; Gioia, K.A.; Fisher, N.S.; Madigan, D.J.; (2017) Mercury Bioaccumulation and Maternal Transfer in Spiny Dogfish (Squalus acanthias). 33rd Annual Meeting of the American Elasmobranch Society/Joint Meeting of Ichthyologists and Herpetologists. Austin, TX.

Kaitlyn A. Gioia

Staff Scientist

- Conducted sampling and analysis of 30+ potable water fixtures for NYS Certificate of Occupancy parameters at the corporate headquarters of a major NY Metro area utility provider. Compared analytical results to the NYSDOH Maximum Contaminant Levels with guidance provided for mitigation responses.
- Phase II subsurface investigations at industrial and commercial properties, including monitoring of drilling activities, collection of soil, soil-gas and groundwater samples for submission to an ELAP-certified laboratory, usage of field screening tools, generation of soil boring logs, and submission of reports.
- Performed environmental monitoring during the upgrading of the electric distribution system circuit from 69kV to 138kV from Shoreham to Riverhead, NY. This was a 10.6 mile corridor upgrade bisecting residential and agricultural properties within the Towns of Brookhaven, Riverhead and Southampton. As part of services, Ms. Hastings was responsible for the identification of potential environmental impacts threatening sensitive environmental receptors as a result of contractor activities, identification of invasive plants and endangered species, oversight of contractors for conformance with all PSEG policies and NY Public Service Commission environmental regulations.
- Conducted an auditory study for a major utility provider. Monitored individual employees for noise exposure and analyzed data collected consistent with industrial hygiene and environment, health and safety standards.
- Conducts lead based paint inspections including collecting paint chips and using an XRF analyzer, then using the data to create a formal report including color, condition, and substrate.
- Conducted sampling and analysis of suspected lead-based paint samples within fire houses. Compared analytical results to EPA standards with guidance provided for mitigation responses.
- Performed State Pollutant Discharge Elimination System (SPDES) sampling for power plant facilities.
- Implementation and testing of multiple pilot systems utilizing advanced oxidation process (AOP) treatment systems for the removal of 1,4-dioxane for various water districts across Long Island. Duties include coordinating setup of pilot systems at each site, sampling to determine feasibility of AOP treatment system at each site, and sampling to collect 1,4-dioxane removal data for full scale system design. Water District's that were tested as part of this pilot program included Bethpage, NY; Plainview, NY; Hicksville, NY; West Hempstead, NY; Manhasset-Lakeville, NY; South Farmingdale, NY; Inc. Village of Garden City, NY; Roslyn, NY; and Garden City Park, NY.

QAPP APPENDIX B

DAILY FIELD REPORT FORM

DAILY FIELD OBSERVATION REPORT

H2M Project Number:		**Date:**		**Time On-Site:** **Time Off-Site:**	
Location/Address:		**H2M Inspector:**			
		Assigned By:			
Property Owner:		**Client Name:**			

HEALTH AND SAFETY

Potential Site-Specific Job Hazards (check all that apply):

_____ **Slips/Trips/Falls**
_____ Obstacles
_____ Slippery/Muddy Conditions
_____ Open Excavations/Trenches

_____ **Struck By/Caught Between**
_____ Machinery/Heavy Equipment
_____ Traffic/Roadway

_____ **Fire/Burns**

_____ **Ergonomics**
_____ Heavy Lifting
_____ Noise
_____ Vibration
_____ Ladders/Scaffolding

_____ **Confined Spaces**

_____ **Weather/Atmosphere**
_____ Inclement Weather
_____ Heat/Cold Stress
_____ Sun Exposure
_____ Low Oxygen/Poor Ventilation

_____ **Chemical Hazards**
_____ Contamination/Hazardous Materials
_____ Vapors/VOCs
_____ Diesel/Gas Fumes
_____ Concrete/Silica Dust
_____ Airborne Fibers (e.g., Asbestos)

_____ **Biological Hazards**
_____ Insects (Ticks, Bees, Mosquitos)
_____ Poison Ivy/Sumac/Oak

_____ **Radiological Hazards**

_____ **Electrical Hazards**

Pre-Departure Checklist (check all that apply):

1) Personal Protective Equipment:
_____ Respirator (Cartridge/Dust Mask)
_____ Hard Hat
_____ Safety Vest: _____
_____ Attire Requirements: _____
_____ Footwear Requirements:_____

_____ Safety Harness
_____ Ear Protection (Earmuffs or earplugs)
_____ Eye Protection (Safety Glasses/Goggles)
_____ Gloves (Nitrile, Latex, Rubber)

2) Supplies:
_____ First Aid Kit
_____ Roadway Kit (Cones/Jumper Cables)
_____ References/Safety Data Sheets

_____ Bugspray
_____ Sunscreen
_____ Drinking Water

3) Required Licenses/Certifications:
_____ NYSDOL Asbestos Certificate (D INSP)
_____ OSHA 40-hour HAZWOPER

_____ OSHA 10-hour Construction Safety and Health
_____ Other:_____

4) Required Training/Qualifications:
_____ Confined Space Entry
_____ AED/CPR/Fire Extinguisher Training
_____ LIRR Roadway Worker Protection Training
_____ Substation Training
_____ H2M General Safety Training

_____ Field Equipment Training
_____ Ladder Safety Training
_____ Sampling Procedures (detail below) _____
_____ Job-Specific Procedures (detail below)
_____

5) Specific Procedures/Special Precautions:_____

DAILY FIELD OBSERVATION REPORT

WEATHER CONDITIONS

Sky/Precip: ☐ Clear ☐ Partly Cloudy ☐ Cloudy ☐ Rainy ☐ Snow

Temperature: ☐ <32F ☐ 32-50F ☐ 50-70F ☐ 70-80F ☐ 80-90F

Wind: ☐ None ☐ Light ☐ Strong

Humidity: ☐ Low ☐ Medium ☐ High

SITE ACTIVITIES

Contractor Status: ☐ On-Site ☐ No Activity

Contractor(s): _____

Workers On-Site (indicate number of each):

_____ Foreman
_____ Equipment Operators
_____ Laborers
_____ Engineers
_____ Consultants/Scientists
_____ Project Manager
_____ Carpenters
_____ Electricians
_____ Masons
_____ Mechanics
_____ Plumbers
_____ Welders
_____ Roofers
_____ Millwrights
_____ Lathers
_____ Apprentices

Equipment and Machinery On-Site (indicate number of each):

_____ Industrial Vacuum Loader (Guzzler)
_____ Skid Steer/Bobcat
_____ Backhoe
_____ Mini Excavator (under 6-ton)
_____ Excavator (6-ton to 10-ton)
_____ Larger Excavator (over 10-ton)
_____ Hollow Stem Auger Drilling Rig
_____ Geoprobe
_____ 10-wheel Dump Truck
_____ 6-wheel Dump Truck
_____ Vacuum Truck
_____ Utility/Supply/Box Truck
_____ Crew Vehicle (Pickup)
_____ Air/Ventilation Equipment
_____ Generator

Other Equipment/Smaller Tools: _____

Materials Delivered/Expended: _____

Subcontractors/Other: _____

Regulatory Agencies (NYSDEC, DOH, DOL): _____

Other Personnel On-Site: _____

DAILY FIELD OBSERVATION REPORT

DESCRIPTION OF WORK PERFORMED

Attachments: _____

_____

_____

SIGNED BY: _____ **DATE:** _____

H 2 M

architects + engineers

practical approach. creative results.

JOB _____

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

QAPP APPENDIX C

QC LIMITS FOR SPIKING AND SURROGATE COMPOUNDS

Polychlorinated Biphenyls (PCBs) - Soil (ug/kg)

Lab Fortified Blank (LFB)/Matrix Spike/Matrix Spike Duplicate		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
Aroclor 1016	166	38	117
Aroclor 1221	166	40	160
Aroclor 1232	166	40	160
Aroclor 1242	166	40	160
Aroclor 1248	166	40	160
Aroclor 1254	166	40	160
Aroclor 1260	166	39	140

Polychlorinated Biphenyls (PCBs) - Water (ug/kg)

Lab Fortified Blank (LFB)/Matrix Spike/Matrix Spike Duplicate		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
Aroclor 1016	5	42	134
Aroclor 1221	5	42	134
Aroclor 1232	5	42	134
Aroclor 1242	5	42	134
Aroclor 1248	5	42	134
Aroclor 1254	5	42	134
Aroclor 1260	5	34	146

Volatile Organic Compounds (VOCs), Method 8260C - Soil (ug/kg)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
1,1,1-Trichloroethane	50	59	134
1,1,2,2-Tetrachloroethane	50	69	132
1,1,2-Trichloroethane	50	73	135
1,1-Dichloroethane	50	53	160
1,1-Dichloroethene	50	47	152
1,2-Dichloroethane	50	65	143
1,2-Dichloroethene (total)	50	60	140
1,2-Dichloropropane	50	72	131
2-Butanone	50	52	164
2-Hexanone	50	66	151
4-Methyl-2-pentanone	50	63	154
Acetone	50	23	196
Benzene	50	65	129
Bromodichloromethane	50	74	141
Bromoform	50	59	136
Bromomethane	50	32	182
Carbon disulfide	50	26	16
Carbon tetrachloride	50	57	135
Chlorobenzene	50	62	136
Chloroethane	50	50	159
Chloroform	50	71	135
Chloromethane	50	44	139
cis-1,3-Dichloropropene	50	74	140
Dibromochloromethane	50	71	133
Ethylbenzene	50	59	135
Methylene chloride	50	50	164
Styrene	50	73	133
Tetrachloroethene	50	10	176
Toluene	50	66	131
trans-1,3-Dichloropropene	50	66	144
Trichloroethene	50	62	130
Vinyl chloride	50	45	137
Xylene (total)	150	62	135

VOCs (continued), Method 8260C - Soil (ug/kg)

MS/MSD		QC Limits (%R)		RPD
Analyte	**Spike Concentration**	**Low**	**High**	
1,1-Dichloroethene	50	47	152	20
Benzene	50	65	129	20
Chlorobenzene	50	62	136	20
Toluene	50	66	131	20
Trichloroethene	50	62	130	20

Surrogates		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
1,2-Dichloroethane-d4	50	33	150
4-Bromofluorobenzene	50	34	145
Toluene-d8	50	43	157

Volatile Organic Compounds (VOCs), Method 8260C - Water (ug/l)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
1,1,1-Trichloroethane	50	65	118
1,1,2,2-Tetrachloroethane	50	74	121
1,1,2-Trichloroethane	50	80	117
1,1-Dichloroethane	50	83	151
1,1-Dichloroethene	50	45	146
1,2-Dichloroethane	50	74	129
1,2-Dichloroethene (total)	50	60	140
1,2-Dichloropropane	50	75	117
2-Butanone	50	44	162
2-Hexanone	50	32	183
4-Methyl-2-pentanone	50	69	132
Acetone	50	23	188
Benzene	50	73	119
Bromodichloromethane	50	78	117
Bromoform	50	65	122
Bromomethane	50	52	147
Carbon disulfide	50	41	144
Carbon tetrachloride	50	59	120
Chlorobenzene	50	75	113
Chloroethane	50	49	151
Chloroform	50	72	122
Chloromethane	50	46	144
cis-1,3-Dichloropropene	50	78	116
Dibromochloromethane	50	70	120
Ethylbenzene	50	70	113
Methylene chloride	50	61	142
Styrene	50	72	118
Tetrachloroethene	50	60	128
Toluene	50	72	119
trans-1,3-Dichloropropene	50	79	116
Trichloroethene	50	69	117
Vinyl chloride	50	43	143
Xylene (total)	150	71	109

VOCs (continued), Method 8260C - Water (ug/l)

MS/MSD		QC Limits (%R)		RPD
Analyte	**Spike Concentration**	**Low**	**High**	
1,1-Dichloroethene	50	45	146	30
Benzene	50	73	119	30
Chlorobenzene	50	75	113	30
Toluene	50	72	119	30
Trichloroethene	50	69	117	30

Surrogates		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
1,2-Dichloroethane-d4	50	68	153
4-Bromofluorobenzene	50	79	124
Toluene-d8	50	69	124

Semi-Volatile Organic Compounds (SVOCs), Method 8270D - Soil (ug/kg)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
Acenaphthene	250	45	109
Acenaphthylene	250	43	107
Anthracene	250	50	117
Benzo(a)anthracene	250	52	116
Benzo(a)pyrene	250	56	119
Benzo(b)fluoranthene	250	45	122
Benzo(g,h,i)perylene	250	30	107
Benzo(k)fluoranthene	250	54	124
Bis(2-ethylhexyl)phthalate	250	60	127
Butyl benzyl phthalate	250	54	130
Chrysene	250	48	121
4-Chloraniline	250	29	88
4-Chloro-3-methylphenol	250	45	118
2-Chlorophenol	250	36	109
Dibenzofuran	250	48	112
Dibenzo(a,h)anthracene	250	52	109
3,3'-Dichlorobenzidine	250	41	116
2,4-Dichlorophenol	250	41	117
2,4-Dinitrophenol	250	10	80
2,6-Dinitrotoluene	250	50	109
Diethyl phthlate	250	51	114
Dimethyl phthlate	250	49	112
Di-n-butyl phthalate	250	53	124
Di-n-octyl phthalate	250	46	141
Fluoranthene	250	45	126
Fluorene	250	47	108
Hexachlorobenzene	250	51	110
Indeno (1,2,3-cd) pyrene	250	50	108
Isophorone	250	14	129
2-Methylnaphthalene	250	31	135
2-Methylphenol	250	36	104
4-Methylphenol	250	37	137
Naphthalene	250	18	142
Nitrobenzene	250	36	119
2-Nitroaniline	250	42	118
2-Nitrophenol	250	36	117

SVOCs (continued), Method 8270D - Soil (ug/kg)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
4-Nitrophenol	250	26	118
3-Nitroaniline	250	40	95
Pentachlorophenol	250	22	115
Phenanthrene	250	47	124
Phenol	250	38	104
Pyrene	250	49	132
2,4,5-Trichlorophenol	250	45	111

Semi-Volatile Organic Compounds (SVOCs), Method 8270D - Water (ug/l)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
Acenaphthene	16	50	116
Acenaphthylene	16	50	109
Anthracene	16	54	117
Benzo(a) anthracene	16	31	128
Benzo(a) pyrene	16	30	146
Benzo(b)fluranthene	16	43	147
Benzo (g,h,i) perylene	16	25	153
Benzo (k) fluoranthene	16	28	148
Bis(2-ethylhexyl)phthalate	16	37	138
Butylbenzylphthlate	16	38	135
Chrysene	16	42	140
4-Chloraniline	16	25	133
4-Chloro-3-methylphenol	16	48	124
2-Chlorophenol	16	43	106
Dibenzofuran	16	53	117
Dibenzo(a,h) anthracene	16	22	147
3,3'-Dichlorobenzidine	16	20	132
2,4-Dichlorophenol	16	44	127
2,4-Dinitrophenol	16	11	101
2,6-Dinitrotoluene	16	56	121
Diethylphthlate	16	54	124
Dimethylphthlate	16	56	121
Di-n-butylphthalate	16	50	128
Di-n-octyl phthalate	16	32	148
Fluoranthene	16	50	123
Fluorene	16	51	118
Hexachlorobenzene	16	52	128
Indeno (1,2,3-cd) pyrene	16	26	156
Isophorone	16	46	118
2-methylnaphthalene	16	31	123
2-Methylphenol	16	41	131
4-Methylphenol	1670	15	141
Naphthalene	16	39	107
Nitrobenzene	16	41	122
2-Nitroaniline	16	48	124
2-Nitrophenol	16	41	128

SVOCs (continued), Method 8270D - Water (ug/l)

Lab Fortified Blank (LFB)		QC Limits (%R)	
Analyte	**Spike Concentration**	**Low**	**High**
4-Nitrophenol	1670	10	102
3-Nitroaniline	16	46	112
Pentachlorophenol	1670	12	124
Phenanthrene	16	52	126
Phenol	1670	10	99
Pyrene	16	41	137
2,4,5-Trichlorophenol	16	55	125

QAPP APPENDIX D

RESUME FOR DATA VALIDATION SERVICES

Jodi R. Zimmerman
20 Hickory Grove Spur
Fulton, NY 13069
716-289-0926

EDUCATION:

B.S. Chemistry, William Smith College, Geneva, NY
Graduated June 1990
Chemistry GPA 3.41, Overall GPA 2.94
Research Topic: 'Kinetics and Mechanism of Electrophilic Substitution Reactions Involving Fe, Co, Ni, Cu and Zn Ions in Meso-tetraphenylporphyrins.'

PhD Candidate in Chemistry, Pennsylvania State University,
University Park, PS
June 1990 – August 1991
Bioinorganic Chemistry
Research Topic: Energy Transfer of Europium Chelates Using Lanthanide Luminescence

PROFESSIONAL EXPERIENCE:

Owner/Data Validator – Vali-Data of WNY, LLC, West Falls, NY (February 2008 to present)

Formed a Limited Liability Corporation and became a Woman-Owned Business in September 2009.

Responsibilities include the assessment of project data, determination of its usability and documentation of the findings in accordance with project requirements. Have completed several projects for consulting firms and/or laboratories requiring the preparation of Data Usability Summary Reports (DUSRs) for NYSDEC projects. Analytical suites validated have included, but are not limited to, Volatile Organics, Semi-Volatile Organics, Pesticides/PCBs, Metals, PFA, Wet Chemistry for soil and water samples, and TO-15 and TO-17 Volatile Organics analysis for soil gas/vapor intrusion samples.

Analytical Chemist – Elf Atochem North America, Inc., King of Prussia, PA (1992 to 1994).

Responsibilities included chemical analysis of process samples via NMR Spectroscopy and the formulation of analytical methodologies. Performed analyses and provided QA/QC of process intermediates and products to manufacturing and research facilities.

GC Analyst/Laboratory Technician – Centre Analytical Laboratories, Start College, PA (1991 to 1992)

Analytical chemist performing analyses of environmental samples.

HONORS:

Honors in Chemistry

Bioinorganic chemistry research conducted from June 1988 – June 1990. Requirements included: one year of research, written and oral examinations and a written thesis.

APPENDIX E

PROJECT SCHEDULE GANTT CHART

Paerdegat Basin Gas Condensate Release
Interim Remedial Measure Work Plan

Project Start: Mon, 12/7/2020

Display Week: 1

TASK	PROGRESS	START	END	WEEKS
Work Plan Submittal and Regulatory Approval				
Plan Submittal and Regulatory Comments	100%	12/7/20	3/5/21	13
Plan Revisions and Re-Submittal	100%	3/5/21	5/25/21	11
Regulatory Review and Approval	0%	5/25/21	7/6/21	6
Project Out to Bid				
Bid Spec Preparation and Out to Bid	100%	12/30/20	3/3/21	9
Contractor Bid Submittal	90%	3/3/21	5/28/21	12
Bid Review	0%	5/28/21	6/30/21	5
Bid Award and Contract	0%	6/30/21	8/20/21	7
Field Activities				
Contractor Deliverables	0%	8/20/21	9/13/21	3
Mobilization and Soil Excavation	0%	9/14/21	10/12/21	4
Gas Main Cleaning and Grouting	0%	10/13/21	10/27/21	2
Restoration	0%	10/28/21	11/4/21	1
Final Reporting				
Laboratory Analysis	0%	10/5/21	10/26/21	3
Data Validation	0%	10/27/21	11/17/21	3
Construction Completion Report	0%	11/17/21	12/15/21	4