REMEDIAL INVESTIGATION REPORT

for

BEACH 21ST STREET DEVELOPMENT
10-47 Beach 21st Street
Far Rockaway, Queens, New York
Block 15705, Lot 69

Prepared For:

Beach 21st Limited Partnership
c/o The Community Builders, Inc.
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LANGAN

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AGV	Air Guideline Values
ASP	Analytical Services Protocol
AST	Aboveground Storage Tank
ASTM	ASTM International
BCP	Brownfield Cleanup Program
bgs	below grade surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
btoc	below top of casing
CAMP	Community Air Monitoring Plan
CEQR	City Environmental Quality Review
COC	Contaminant of Concern
CSM	Conceptual Site Model
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
el	Elevation
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
eV	electron volt
FEMA	Federal Emergency Management Agency
FWRIA	Fish and Wildlife Resources Impact Analysis
GPR	Ground-Penetrating Radar
HASP	Health and Safety Plan
IDW	Investigation-Derived Waste
L/min	liters per minute
mg/kg	milligrams per kilogram
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAPL	Non-Aqueous Phase Liquid
NAVD88	North American Vertical Datum of 1988
NYC	New York City
NYCRR	New York Codes, Rules, and Regulations
NYSDOH	New York State Department of Health
NYSDEC	New York State Department of Environmental Conservation
OER	NYC Mayor's Office of Environmental Remediation

Acronym	Definition
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PFC	Perfluorinated Chemical
PID	Photoionization Detector
PPE	Personal Protective Equipment
ppm	parts per million
ppt	parts per trillion
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RAWP	Remedial Action Work Plan
REC	Recognized Environmental Condition
RI	Remedial Investigation
RIR	Remedial Investigation Report
RL	Reporting Limit
RRU	Restricted-Residential Use
SCO	Soil Cleanup Objective
SGV	Standards and Guidance Values
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
1,1,1-TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TCL	Target Compound List
TOGS	Technical and Operational Guidance Series
UN/DOT	United Nations / Department of Transportation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UU	Unrestricted Use
VOC	Volatile Organic Compound

CERTIFICATION

I, Ryan Manderbach, CHMM, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report 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) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Ryan Manderbach, CHMM

1.0 INTRODUCTION

This Remedial Investigation Report (RIR) was prepared on behalf of Beach 21st Limited Partnership (the Requestor) for the Beach 21st Street Development at 10-47 Beach 21st Street in the Far Rockaway, Queens, New York (the site). This RIR is being submitted to the New York State Department of Environmental Conservation (NYSDEC) as part of a New York State Brownfield Cleanup Program (BCP) application. The Requestor intends to remediate the site in conjunction with redevelopment.

This RIR presents environmental data and findings from the December 2018 through February 2019 Remedial Investigation (RI) conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan). The RI was conducted in accordance with Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 375-1, 3.8, 6.8, NYSDEC Division of Environmental Remediation (DER) Program Policy: Technical Guidance for Site Investigation and Remediation (DER-10), and applicable New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006. The objectives and goals of this RI are:

- Define the nature and extent of contamination in all media at or emanating from the site
- Generate sufficient data to evaluate the remedial action alternatives and prepare a Remedial Action Work Plan (RAWP) to be implemented concurrent with site redevelopment
- Generate sufficient data to evaluate the actual and potential threats to human health and the environment

The remainder of this report is organized as follows:

- Section 2.0 describes the setting and physical characteristics of the site
- Section 3.0 describes the site background including results of previous investigations and identified areas of concern (AOCs)
- Section 4.0 presents the investigation field procedures
- Section 5.0 describes the field observations and analytical results
- Section 6.0 presents an assessment of the exposure risks of site contaminants to human, fish, and wildlife receptors
- Section 7.0 presents the nature and extent of contamination in site media as determined through the field investigation and analysis of environmental samples
- Section 8.0 summarizes the results of the investigation and presents conclusions based on field observations and analytical results
- Section 9.0 presents the references used in preparation of this report

2.0 SITE PHYSICAL CHARACTERISTICS

2.1 Site Description

The site is located at 10-47 Beach 21st Street in Far Rockaway, Queens, New York, and is currently identified on the Queens Borough Tax Map as Block 15705, Lot 69 and portion of Lot 59. Following the completion of tax lot apportionment, the proposed site boundaries will correspond to Block 15705, Proposed New Lot 69. The about 42,500-square-foot (±0.98 acre) site is used for a bus stop and a municipal parking lot that contains a temporary bus shelter. All surfaces, except for an approximately 2,000-square-foot unpaved area in the southwest corner, are covered with pavement. The unpaved area is separated from the bus stop area by a NYC DOT-controlled parking area. The site is located mid-block, on the city block bound by Mott Avenue to the north, Beach 21st Street to the east, Cornaga Avenue to the south, and Beach 22nd Street to the west. A Site Location Map is included as Figure 1.

The site was assigned an E-Designation (E-415) for Air Quality – HVAC (fuel limited to natural gas) and Window Wall Attenuation and Alternate Ventilation. The New York City (NYC) Mayor's Office of Environmental Remediation (OER) is aware of the Requestor's plans to redevelop the site under the BCP.

2.1.1 Description of Surrounding Properties

The site is located in an urban setting characterized by commercial and industrial buildings. The following is a summary of adjoining and surrounding property usage:

Direction	Adjoining Properties			Surrounding Properties
	Block No.	Lot No.	Description	
North	15705	59	Northern portion of Lot 59 (off-site portion) that includes the remainder of the bus station and parking facility	Auto service facility followed by Mott Avenue
East	15704	26, 30, 36, 53, 57, 60, 66	Mixed use commercial and residential lots	Beach 21st Street followed by commercial businesses
South	15705	81	Land under development	Parking and auto repair shop followed by Cornaga Avenue
West	15705	30 through 37, 140	One- and two-story family residential buildings and multi-family residential building	Mixed use residential and commercial lots, vacant land, Beach 22nd Street and MTA Mott Avenue – Far Rockaway Subway station

Land use within a half mile of the site is primarily residential and commercial, but also includes industrial uses, public parks, and schools. The New York City Transit Authority (NYCTA) 'A' subway line is about 300 feet to the west across Beach 22nd Street. Motts Basin, which is a section of Jamaica Bay, is about 2,400 feet north-northwest of the site. Sensitive receptors, as defined in NYSDEC DER-10, located within a half mile of the site are listed in the following table.

Number	Name (approximate distance from site)	Address
1	Peninsula Preparatory Academy (1,030 feet southeast)	611 Beach 19th Street Far Rockaway, NY 11691
2	Talmud Torah Siach Yitzchok (1,040 feet northeast)	1513 Central Avenue Far Rockaway, NY 11691
3	Reishis Chochma Preschool (1,040 feet north)	1525 Central Avenue Far Rockaway, NY 11691
4	Challenge Charter Middle School (1,050 feet north)	15-26 Central Avenue Far Rockaway, NY 11691
5	Kid's Time Childcare (1,050 feet west)	10-50 Beach 22nd Street Far Rockaway, NY 11691
6	MS 53 Brian Piccolo Village Academy (1,100 feet east)	Nameoke Street and Cornaga Avenue Far Rockaway, NY 11691
7	Success Academy Far Rockaway (1,100 feet east)	10-45 Nameoke Street, Floor 3 Far Rockaway, NY 11691
8	Tiny Tykes Day Care (1,600 feet west)	1061 Gipson Street Far Rockaway, NY 11691
9	Church of God Christian Academy (1,620 feet northeast)	1332 Central Avenue Far Rockaway, NY 11691
10	Sorrentino Recreation Center (1,800 feet southeast)	18-40 Cornaga Avenue Far Rockaway, NY 11691
11	PS 215 Lucretia Mott (1,810 feet southwest)	535 Briar Place Far Rockaway, NY 11691
12	Wave Preparatory Elementary School (1,820 feet southwest)	535 Briar Place Far Rockaway, NY 11691
13	Lovable Kids Day Care (1,830 feet west)	1070 Dickens Street Far Rockaway, NY 11691
14	Early Bird Family Day Care, Inc. (1,850 feet south)	439 Beach 22nd Street, Apt. 3P Far Rockaway, NY 11691
15	P.S. 253 (2,000 feet north)	1307 Central Avenue Far Rockaway, NY 11691
16	Our Precious Angels (2,060 feet west)	2402 Ocean Crest Boulevard Far Rockaway, NY 11691
17	Little Treasures Daycare (2,110 feet east)	1418 Mott Avenue Far Rockaway, NY 11691
18	Kiddies Care Corner (2,110 feet south)	2117 Elk Drive Far Rockaway, NY 11691
19	Alleluia Day Care (2,115 feet south)	443 Beach 22nd Street Far Rockaway, NY 11691
20	Bowen's Unique Headstart (2,115 feet south)	449 Beach 21st Street Far Rockaway, NY 11691

Number	Name (approximate distance from site)	Address
21	Our Kids Daycare, Inc. (2,115 feet south)	429 Fernside Place Far Rockaway, NY 11691
22	Hebrew Kindergarten and Infants (2,115 feet south)	310 Beach 20th Street Far Rockaway, NY 11691
23	Sunshine Daycare (2,115 feet south)	13-81 McBride Street Far Rockaway, NY 11691
24	Bnos Bais Yaakov/Tichon Meir Moshe (2,500 feet east)	613 Beach 9th Street Far Rockaway, NY 11691
25	Fredrick Douglas Academy VI High School (2,500 feet southwest)	8-21 Bay 25th Street Far Rockaway, NY 11691
26	Yeshiva Darchei Torah (2,500 feet south)	257 Beach 17th Street Far Rockaway, NY 11691
27	Knowledge and Power Preparatory Academy VI (2,500 feet southwest)	8-21 Bat 25th Street Far Rockaway, NY 11691
28	Lovable Kids Daycare (2,500 feet west)	1070 Dickens Street Far Rockaway, NY 11691
29	Queens High School for Information, Research, and Technology (2,530 feet southwest)	8-21 Bay 5th Street Far Rockaway, NY 11691
30	Far Rockaway High School (2,600 feet southwest)	821 Bay 25th Street Far Rockaway, NY 11691

A map showing the surrounding land uses and the locations of sensitive receptors adjacent to the site is included as Figure 2.

2.1.2 Topography

According to Langan's December 31, 2018 site survey, the site elevation[1] [el] ranges from about el 24.65 to 25.6 and was observed to gently slope down to the northwest.

2.1.3 Surface Water and Drainage

With the exception of an approximately 2,000-square-foot unpaved area in the southwest corner, the site footprint is covered by paved asphalt and concrete and the majority of runoff from the site is expected to drain to on-site storm drains or the city sewer. If rainwater was to infiltrate the ground, it would percolate downwards toward the water table and join the anticipated regional flow, which is estimated to flow north, northwest toward the Motts Basin and Jamaica Bay.

[1] Elevations are referenced to the North American Vertical Datum of 1988 (NAVD88) unless otherwise noted.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) effective November 16, 1983 and revised September 5, 2007, (Map Number 3604970382F) and the Preliminary FIRM dated January 30, 2015 (Map Number 3604970382G), the site is located within the area of minimal flood hazard.

2.1.4 Wetlands

Wetlands on or near the site were evaluated by reviewing the National Wetlands Inventory and NYSDEC regulated wetlands map. There are no wetlands on or adjacent to the site. The nearest wetland is associated with Motts Basin, about 2,400 feet to the north-northwest.

2.2 Geology and Hydrogeology

2.2.1 Regional and Site Geology

Geological surface features (e.g., rock outcroppings) were not observed at the site. Based on the historical "Geological Map of Long Island, New York" (Fuller, 1913), identified the site is located within the Manhasset Formation which is composed of upper Pleistocene deposits of glacial sand and gravel. Underlying the Manhasset Formation, a clay layer, known as the Wantagh Clay is found. The Wantagh clay layer is interglacial and interstadial marine clay that is located along the south shore of Long Island. The depth to the Wantagh Clay varies from about 40 to 80 feet below existing grade, with an average thickness of about 20 to 40 feet. Deposits of Jamaica gravels and Gardiner's clay is typically encountered underlying the Wantagh Clay layer in the Far Rockaway region. Precambrian bedrock is located below the aforementioned layers/formations in this portion of Queens and is believed to be greater than 600 feet below site grade.

The site is underlain by historic fill material predominantly consisting of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, vegetation, glass, clay, and brick. The fill was observed to depths varying between about 1.2 to 10.6 feet below grade surface (bgs) (about el 23.4 to el 15). The historic fill layer was underlain by a sand layer predominantly consisting of fine- to coarse-grained sand with varying amounts of gravel, and pockets of trace silt and clay. A clay layer was observed at depths ranging from 55 to 70.5 feet bgs (about el -30 to -45.5) in geotechnical borings. Bedrock was not encountered during the RI or geotechnical borings.

2.2.2 Regional and Site Hydrogeology

Groundwater flow is typically hydraulically influenced, as shallow groundwater tends to originate in areas of topographic highs and flow toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are

also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, and extent of impervious cover. Other factors influencing groundwater include depth to bedrock, the presence of fill, and variability in local geology and groundwater sources or sinks.

Synoptic groundwater measurements were collected on December 31, 2018 from three environmental monitoring wells (MW05, MW09, and MW12) installed during the RI and three geotechnical observation wells (B-1(OW), B-3(OW) and, B-12(OW)) installed in November 2018. Based on groundwater measurements and observations, an overburden aquifer exists beneath the site and groundwater elevations ranged from el 6.3 to 5.93 (about 18.43 to 18.7 feet bgs). The recorded elevations indicate site groundwater flows north, northwest. Underground utilities and other subsurface structures may locally influence the direction of groundwater flow.

Groundwater in Far Rockaway is not used as a potable source. Drinking water throughout New York City is derived from surface reservoirs in the Catskills, not groundwater near the site.

3.0 SITE BACKGROUND

This section describes historical site use, the proposed redevelopment, and Langan's Phase I Environmental Site Assessment (ESA) findings. AOCs were developed based on this information and are detailed at the end of the section.

3.1 Historical Site Use

Historical Sanborn Fire Insurance Maps indicate that a LIRR right of way traversed the western portion of the site from 1886 to 1996. Other site uses include a coal/lumber yard (1890 to 1933), paint shop/storage (1912 to 1951), manufacturing facilities (1912 to 1951), woodworking (1912 to 1962), carpet cleaning (1912), and a tin shop (1951). The 1912 Sanborn map reveals a 100-gallon underground gasoline tank (UST) on the site that is not shown on subsequent maps. Based on aerial photos, the site appears to have been used for parking and a bus stop since 1975.

3.2 Proposed Redevelopment Plan

The proposed redevelopment project consists of a 10-story mixed-use building (commercial and affordable residential) with a cellar level. The cellar would be used for parking, storage, and mechanical rooms. The ground floor would include retail and a daycare center. Upper floors would include residential units and indoor and outdoor communal spaces for residents. An approximately 2,900-square-foot area in the southwest corner of the site would be a grade-level play yard (above the cellar level) associated with the day care. Concrete paving is proposed for the setback area along Beach 21st Street and a landscaped area is proposed around the daycare play yard. Excavation across the site footprint to 15 feet bgs would be needed to construct the cellar at mat slab.

3.3 Previous Environmental Reports and Documents

Two previous environmental reports were available for site. These reports are included as Appendix A and are summarized below.

June 2016 Phase I ESA for Far Rockaway Municipal Parking Field - Queens, New York, prepared by AKRF, Inc.

AKRF completed a Phase I ESA of the site and adjacent portions of Lot 59 in 2016. The Phase I ESA identified the following recognized environmental conditions (RECs):

- Two USTs – One UST is shown in the western part of the site on the 1912 Sanborn map and the second UST is shown in the portion of Lot 59 north of the site on the 1933 to 1951 maps. The status of the tanks is unknown and additional tanks may have been associated with other historical structures.

- Historical Property uses included a coal and wood yard, a furniture factory, auto repair, paint storage, a tin shop, an upholsterer, a lumber yard, a screen manufacturer, a publishing company, a roofing works, and a sheet metal works.
- A rail spur was historically located along the west part of the site and may have been associated with spills and the use of creosote and/or other oils.
- Historical and current uses of surrounding properties included nearby rail tracks, auto repair shops, filling stations, factories, paint and oil shops, printers, a sign painter, dry cleaners, registered Petroleum Bulk Storage (PBS) facilities, and a vacant lot with an abandoned 55-gallon drum.
- Potential dry wells may be located on-site based on a survey provided by NYC Department of Transportation indicating some on-site storm drains may not be connected to the municipal sewer system and may discharge into the subsurface.

The Phase I ESA also identified Spill No. 0408292 (October 2004), regarding two 55-gallon drums that were abandoned on the property, as a de minimis condition. It is not clear if this incident happened within the limits of the site or the larger city-owned area. The spill was closed in December 2004.

A subsurface investigation was recommended prior to redevelopment as well as proper closure of any encountered USTs in accordance with applicable regulations. The report also recommended that suspect demolition debris, possibly containing asbestos containing material (ACM), lead-based paint (LBP) or polychlorinated biphenyl (PCB) containing material, should be handled and disposed of in accordance with applicable regulations.

September 2018 Phase I ESA, for Beach 21st Street Development – Queens, NY, prepared by Langan

The Phase I ESA identified the following RECs:

- Historical uses at the site included: LIRR railroad tracks (1886 to 1996), coal/lumber yard (1890 to 1933), manufacturing facilities (1912 to 1951), woodworking (1912 to 1962), carpet cleaning (1912), tin shop (1951), and painting facilities (1912 to 1951).
- A 1912 Sanborn Map shows an UST on the site. Additional records related to the tank were not available; therefore, it is possible that the tank is still in place.
- Current and historical use of adjoining and surrounding up- and cross-gradient properties included: gasoline filling stations (1933 and 2006), dry cleaners (1951 to 1981), auto repair facilities (1933-present), a manufacturing company (1950 to 1970), and battery service (1934).

These RECs may have adversely affected soil, groundwater, or soil vapor beneath the site.

The following were identified as business environmental risks (BERs):

- Presence of historic fill material
- Potential dry wells
- E-designation for noise and air quality

3.4 Summary of Areas of Concern

Based on site observations, site development history, and the findings of the Phase I ESAs, five AOCs were identified. An AOC location map is included as Figure 3, and the AOCs are summarized below.

AOC 1: Historic Fill

Material from an unknown source was used to fill in the site during historical development. The fill extends from below the surface cover to elevations ranging from about el 23.2 to el 14.4 (1.2 to 10.6 feet bgs) and is predominantly comprised of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, roots, glass, clay and brick. Historic fill material in NYC typically contains contaminant concentrations above current regulatory levels.

AOC 2: Historical Site Use

From 1890 to 1951, the site operated with the following uses: a coal/lumber yard, paint shop/storage, manufacturing facilities, woodworking, carpet cleaning, and a tin shop. The site was occupied by multiple multi-story buildings with a vacant western perimeter that was used for storage until 1961. Inadvertent releases of petroleum products, solvents, or other hazardous substances related to these former site uses may have impacted soil, groundwater, and/or soil vapor.

AOC 3: On-Site Petroleum Bulk Storage

The 1912 Sanborn Map shows an UST on the site. Additional records related to the tank were not available; therefore, it is possible that the tank is still in place. Potential undocumented petroleum releases may have adversely impacted soil, groundwater, and/or soil vapor.

AOC 4: Historical Use of Adjoining and Surrounding Properties

Historical uses of the adjoining and surrounding properties include gasoline filling stations, dry cleaners, auto repair facilities, a manufacturing company, and battery service. Inadvertent releases of petroleum products, solvents, or other hazardous substances associated with historical use of surrounding properties may have adversely affected groundwater and/or soil vapor beneath the site.

4.0 REMEDIAL INVESTIGATION

The RI was completed between December 11, 2018 and March 13, 2019 to investigate RECs and to determine, to the extent practical, the nature and extent of contamination in soil, groundwater, and soil vapor at the site. The RI included a geophysical survey, advancement of soil borings, installation of groundwater monitoring wells and soil vapor probes, and collection of soil, groundwater, and soil vapor samples. A sample summary is included as Table 1.

The RI consisted of the following:

- A geophysical survey
- Installation of 23 soil borings and collection and analysis of 45 grab soil samples (including three duplicate samples)
- Installation of three groundwater monitoring wells and collection of seven groundwater samples (including one duplicate sample) from three new and three existing site wells
- Surveying and synoptic gauging of groundwater monitoring wells to determine local groundwater flow direction
- Installation of ten soil vapor points and collection of ten soil vapor samples

Langan completed the RI in accordance with 6 NYCRR Part 375-3.8, NYSDEC DER-10 (May 2010), the NYSDEC Draft BCP Guide (May 2004), and the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006 and subsequent updates).

4.1 Geophysical Investigation and Utility Location

Prior to initiating intrusive RI subsurface activities, the New York One Call Center was contacted for Code 753 utility mark-outs. On December 12, 2018, a Langan field engineer documented the geophysical survey performed by NOVA Geophysical & Environmental, Inc. (NOVA) of Douglaston, New York. The survey was completed using electromagnetic and utility line locator instruments, a magnetometer, and ground-penetrating radar (GPR) to identify potential subsurface utilities, USTs, and other buried structures across the site and to clear boring, monitoring well, and soil vapor probe locations. A copy of the geophysical survey report is included in Appendix B.

4.2 Soil Investigation

4.2.1 Investigation methodology

A Langan field engineer documented the advancement of 23 soil borings (EB01 through EB23) by AARCO Environmental Services Corp. (AARCO) of Lindenhurst, New York. Boring locations

were selected to investigate the AOCs listed above in Section 3.4. Borings were advanced using either direct-push Geoprobe® 7822DT or Powerprobe 9580 VTR track-mounted drill rigs. Boring advancement elevations ranged from el 17 to el -7 (about 8 – 32 feet bgs).

Soil was recovered continuously from the surface to the bottom depth of each boring. Samples were collected into 4-foot or 5-foot long acetate liners, using a 2-inch diameter Macro-Core® sampler. The soil was screened for visual, olfactory, and instrumental evidence of environmental impacts, and was visually classified for soil type, grain size, texture, and moisture content. Instrument screening for the presence of organic vapors was performed using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. Following sample collection, borings were backfilled with soil cuttings that did not display evidence of environmental impacts and patched to match the surrounding surface cover, or borings were converted to groundwater monitoring wells. Boring locations are shown on Figure 3 and boring logs are included in Appendix C.

4.2.2 Sampling Methodology

Forty-four soil samples and three duplicate samples were collected, but two samples were held by the laboratory and not analyzed. During the December 2018 borings, samples were collected from the 0- to 3.5-foot depth interval (i.e., shallow fill) and from the interval below the proposed cellar depth. In boring EB02, a third sample was collected from the bottom of the historic fill layer. Samples collected in March were collected at various depths between 0 and 10 feet bgs within the historic fill material layer.

Samples submitted for volatile organic compound (VOC) analysis were collected directly from the acetate liner into laboratory-supplied TerraCore® soil samplers. The remaining sample volume was homogenized and placed in laboratory-supplied containers for all additional analyses. The sample containers were labeled, placed in a laboratory-supplied cooler, and packed on ice to maintain a temperature of about 4°C. Soil samples collected in December 2018 were picked up and delivered via courier service to Chemtech under standard chain-of-custody protocol. Chemtech is a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory located in Mountainside, New Jersey. Soil samples collected in February 2019 were shipped to York Analytical Laboratories Inc. (York), another NYSDOH ELAP-certified laboratory. Soil samples were analyzed for Part 375 VOCs, semivolatile organic compounds (SVOCs), PCBs, pesticides, herbicides, cyanide, and metals (including hexavalent chromium). Analysis for lead via Toxicity Characteristic Leaching Procedure (TCLP) was added to three samples from borings EB21 and EB22. A summary of samples collected and analysis is provided in Table 1.

4.3 Groundwater Investigation

4.3.1 Monitoring Well Installation and Development Methodology

A Langan field engineer documented conversion of three soil borings into groundwater monitoring wells (MW05, MW09, and MW12) by AARCO during the RI and installation of four geotechnical observation wells (B-1(OW), B-3(OW), B-8(OW), and B-12(OW)) by Craig Geotechnical Drilling (Craig) of Mays Landing, New Jersey during the November 2018 geotechnical investigation. One groundwater sample was collected from each of the wells to characterize groundwater conditions and to investigate potential groundwater impacts associated with the AOCs. Geotechnical well B-8(OW) was not sampled because the purged material appeared to contain drilling mud and did not clear up.

MW05, MW09, and MW12 were installed by inserting 15 feet of 2-inch-diameter, schedule 40, 0.01-inch-slotted polyvinyl chloride (PVC) screen extending from about el -5.56 to el 13.4 and attaching PVC riser to grade. The annulus of each groundwater monitoring well was filled with No. 2 sand to a depth of about 2 feet above the top of the screen followed by an at least 2-foot-thick bentonite seal. The remainder of the annulus was filled with soil cuttings that did not display evidence of environmental impacts and/or No. 2 sand.

Geotechnical observation wells were constructed by inserting 10 feet of 2-inch-diameter, schedule 40 PVC slotted screen, and 20 feet of solid riser pipe to a total depth of 30 feet bgs. The annulus of each well was filled with No. 2 sand to a depth of about 2 feet above the top of the screen followed by an at least 2-foot-thick bentonite seal. The remainder of the annulus was filled with soil cuttings that did not display evidence of environmental impacts.

Following installation, the groundwater monitoring wells were developed using a surge block and purged using a submersible pump until the water ran clear. Purged groundwater was containerized in a labeled 55-gallon drum and then transported by AARCO on May 3, 2019 to Dale Transfer Corporation in West Babylon, New York.

A Langan field engineer completed synoptic groundwater gauging on December 31, 2018. The top of casing of each well was surveyed by Langan on January 14, 2019. Monitoring well construction details and groundwater elevations from the December 31, 2018 synoptic event are included in Table 2, well locations are shown on Figure 3, and well construction logs are included in Appendix D.

4.3.2 Groundwater Sampling

Groundwater samples were collected one week following well development. Samples were collected in accordance with the United States Environmental Protection Agency (USEPA) low-

flow groundwater sampling procedure ("Low Stress [low-flow] Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", dated July 30, 1996 and revised January 19, 2010) to allow for collection of representative samples. Prior to sample collection, groundwater was purged from each well while monitoring physical and chemical groundwater parameters (i.e., pH, conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential). Turbidity at the time of sampling was below 5 Nephelometric Turbidity Units (NTU) in wells B-3(OW), B-1(OW), MW05, and MW09, but ranged from 85.4 - 181 in wells MW12 and B-12(OW). Groundwater sampling logs are included in Appendix E.

Six groundwater samples and one duplicate sample were collected into labeled, laboratory-supplied containers, placed in a laboratory-supplied cooler, and packed on ice to maintain a temperature of about 4°C. The samples were picked up and delivered via courier service to Chemtech under standard chain-of-custody protocol. Groundwater samples were analyzed for Part 375 VOCs, including 1,4-dioxane, SVOCs, PCBs, pesticides, herbicides, and metals, including hexavalent chromium and cyanide (total and dissolved). Groundwater samples were also analyzed for the 20-compound list of perfluorinated chemicals (PFCs) maintained by the NYSDEC. PFC analysis was performed by Eurofins Lancaster Laboratories of Lancaster, Pennsylvania, as sub-contracted by Chemtech.

4.4 Soil Vapor Investigation

4.4.1 Soil Vapor Probe Installation

A Langan field engineer documented installation of ten temporary soil vapor probes (SV01 through SV05, SV07 through SV09, SV10, and SV12) by AARCO. Soil vapor sample probes were installed using a Geoprobe® 7822DT track-mounted drill rig to a depth of about 10 feet bgs. The probes were installed in accordance with the 2006 NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York and consisted of polyethylene implants (1/2-inch diameter and 1-7/8-inch long) threaded into 3/16-inch-diameter polyethylene tubing. The annulus of each probe was filled with No. 2 sand to a depth of about 4 inches above top of screen followed by a hydrated bentonite seal to surface grade. Soil vapor probe locations are shown on Figure 3, and soil vapor probe construction logs are included in Appendix F.

4.4.2 Soil Vapor Sampling and Analysis

As a quality assurance/quality control (QA/QC) measure, an inert tracer gas (helium) was introduced into an above-grade sampling chamber to verify that the soil vapor probes were properly sealed above the target sampling depth, thereby preventing subsurface infiltration of ambient air. Direct readings of less than 10 percent helium in the sampling tube were considered sufficient to verify a tight seal at each sample point.

Each soil vapor probe was purged using a MultiRAE meter at a rate of 0.2 liters per minute (L/min) to evacuate a minimum of three sampling tube volumes prior to sample collection. The purged soil vapor was also monitored for VOCs and the value was recorded. After purging was complete, soil vapor samples were collected into laboratory-supplied, batch-certified, 6-Liter Summa® canisters that were calibrated for a sampling rate of about 0.05 L/min over about 120 minutes of sampling. The canisters were labeled and retrieved by a courier for delivery to York Analytical Laboratories, Inc. (York) under standard chain-of-custody protocol. York is a NYSDOH ELAP-certified laboratory located in Stratford, Connecticut. Soil vapor samples were analyzed for VOCs by USEPA Method TO-15. Soil vapor sampling logs are included in Appendix F.

4.5 Quality Control Sampling

During the RI, field blanks, trip blanks, and field duplicate samples were collected and submitted for laboratory analysis. QA/QC samples are summarized in Table 1 and include the following quality control samples:

Soil QA/QC samples

- Three field blanks
- Three trip blank samples
- Three field duplicate samples
- One Matrix Spike/Matrix Spike Duplicate

Groundwater QA/QC samples

- One field blank sample
- Three trip blank samples
- One field duplicate sample

The field duplicates were collected to assess the precision of the analytical methods relative to the sample matrix. The duplicate was collected from the same material as the primary sample by splitting the volume of homogenized sample collected in the field into two sample containers.

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

Field blank samples were collected to determine the effectiveness of the decontamination procedures for the groundwater sampling equipment train and the cleanliness of unused nitrile gloves and acetate liners used to collect soil samples. Field blank samples consisted of deionized, distilled water provided by the laboratory that has passed through the sampling apparatus. Field blank and duplicate samples were analyzed for same lists as the corresponding sampling event and sample matrix.

4.6 Data Validation

Data from the RI was validated by a Langan data validator in accordance with USEPA and NYSDEC validation protocols. Copies of the data usability summary reports (DUSRs) and the data validator's credentials are included in Appendix G.

4.6.1 Data Usability Summary Report Preparation

A DUSR was prepared for each sampling matrix. The DUSR presents the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.

For each of the organic analytes, the following was assessed:

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

For each of the inorganic analytes, the following was assessed:

- Holding times
- Calibrations
- Blank results
- Interference check sample
- Laboratory check samples
- Duplicates
- Matrix Spike
- Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) QC
- ICP serial dilutions
- Results verification and reported detection limits

Based on the results of data validation, the validated analytical results reported by the laboratory were assigned one of the following usability flags:

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

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

4.7 Field Equipment Decontamination

Handheld sampling equipment, including interface probes, water quality meters, and sampling pumps, was decontaminated by hand using an Alconox-based solution and triple rinsed with distilled water. Liquids were temporarily contained in 5-gallon buckets, and between rinses, equipment was placed such that contact with the ground was avoided. Decontamination wastewater was drummed for future disposal at a permitted facility.

4.8 Investigation-Derived Waste Management

Investigation-derived wastes (IDW) generated during the RI were containerized, as necessary. Aqueous waste from monitoring well development and purging and decontamination water were placed into United Nations/Department of Transportation (UN/DOT)-approved 55-gallon steel drums with sealed tops. The drums will be transported off-site by a licensed waste hauler and disposed of at a permitted facility.

5.0 FIELD OBSERVATIONS AND ANALYTICAL RESULTS

This section summarizes the field observations and laboratory analytical results from the RI. Soil analytical results are compared to the 6 NYCRR Part 375 Unrestricted Use (UU) and Restricted Use Restricted-Residential (RRU) Soil Cleanup Objectives (SCOs). Groundwater analytical results are compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGVs) for Class GA groundwater. The nature and extent of contamination are discussed in Section 7.0.

A summary of the RI soil, groundwater, and soil vapor samples is included in Table 1. Copies of the laboratory analytical reports are included in Appendix H. Summaries of the analytical results for the soil, groundwater, and soil vapor samples are provided in the following tables:

- Table 3: Soil Sample Analytical Results
- Table 4: Groundwater Sample Analytical Results
- Table 5: Groundwater Sample Analytical Results – PFCs (20-compound list)
- Table 6: Soil Vapor Sample Analytical Results

The following sections describe the RI field observations and analytical data.

5.1 Geophysical Survey Findings

The December 2018 geophysical survey identified scattered anomalies resembling potential subsurface utilities (such as electric, telecommunications, and drainage) across the site footprint. The survey was limited by parked vehicles in the parking lot in the western and southern parts of the site. Large geophysical anomalies resembling USTs were not identified. Piping from catch basins were not all traced to public sewer discharge points, indicating dry wells may be present. A copy of the Geophysical Engineering Survey Report is included in Appendix B.

5.2 Geology and Hydrogeology

Geologic and hydrogeologic observations are described below. Soil boring logs are included in Appendix C and a groundwater contour map is provided as Figure 4.

5.2.1 Historic Fill Material

Historic fill material was encountered beneath the surface cover and extends to elevations that vary down to a maximum depth of el 14.4 (10.6 feet bgs). The historic fill predominantly consisted of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, roots, glass, clay, and brick.

5.2.2 Native Soil

The historic fill layer was underlain by a sand layer predominantly consisting of fine- to coarse-grained sand with varying amounts of gravel, and pockets of trace silt and clay. A clay layer was observed at depths ranging from 55 to 70.5 feet bgs (about el -30 to -45.5) in geotechnical borings.

5.2.3 Bedrock

Bedrock was not encountered during the RI or during Langan's November 2018 geotechnical borings.

5.2.4 Hydrogeology

Synoptic groundwater measurements were collected on December 31, 2018 from three environmental groundwater monitoring wells (MW05, MW09, and MW12) installed during the RI, and three geotechnical observation wells (B-1(OW), B-3(OW) and, B-12(OW)) installed in November 2018. Based on the synoptic gauging event on December 31, 2018, groundwater elevations ranged from el 6.3 to el 5.93 (about 18.43 to 18.7 feet bgs). Underground utilities and other subsurface structures may locally influence the direction of groundwater flow.

5.3 Soil Findings

5.3.1 Field Screening Observations

No visual, olfactory, and PID readings indicative of chemical or petroleum impacts were observed during the RI.

5.3.2 Analytical Results

Forty-two soil samples and three duplicate samples, were analyzed for Part 375 VOCs, SVOCs, PCBs, herbicides, pesticides, cyanide, and metals including hexavalent chromium. A summary of laboratory detections for soil samples collected during the RI, with comparisons to the Part 375 UU and RRU SCOs, is included in Table 3 and shown on Figure 5. The analytical results are summarized below.

VOCs

Acetone was detected in one soil sample and one duplicate sample (EB02_1.5-3.5 and SODUP04_030519) at concentrations of 0.21 milligrams per kilogram (mg/kg) and 0.051 mg/kg, respectively, which are above the UU SCO of 0.05 mg/kg, but below the RRU SCO of 100 mg/kg.

SVOCs

Seven SVOCs were detected at concentrations above the Part 375 UU and/or RRU SCOs. The list below provides a summary of each SVOC that exceeded the Part 375 UU and/or RRU SCOs and the range of concentrations above the SCOs. Analytes detected above the RRU SCOs are shown in bold. SCOs are shown in parentheses.

- **Benzo(a)anthracene**: 1.1 mg/kg in EB04_0-2 to 12.3mg/kg in EB13_6-8 (UU and RRU SCO of 1 mg/kg)
- **Benzo(a)pyrene**: 1.13 mg/kg in EB15_8-10 to 11.1 mg/kg in EB13_6-8 (UU and RRU SCO of 1 mg/kg)
- **Benzo(b)fluoranthene**: 1.07 mg/kg in EB15_8-10 to 8.48 mg/kg in EB18_0-2 (UU and RRU SCO of 1 mg/kg)
- **Benzo(k)fluoranthene:** 0.813 mg/kg in EB15_8-10 to 10.3 mg/kg in EB13_6-8 (UU SCO of 0.8 mg/kg and RRU SCO of 3.9 mg/kg)
- **Chrysene:** 1.1 mg/kg in EB04_0-2 to 11.7 mg/kg in EB13_6-8 (UU SCO of 1 mg/kg and RRU SCO of 3.9 mg/kg)
- **Dibenzo(a,h)anthracene**: 0.34 mg/kg in EB03_1.5-3.5 to 2.84 mg/kg in EB13_6-8 (UU and RRU SCO of 0.33 mg/kg)
- **Indeno(1,2,3-cd)pyrene**: 0.534 mg/kg in EB15_0-2 to 7.37 mg/kg in EB13_6-8 (UU and RRU SCO of 0.5 mg/kg)

PCBs

PCBs were not detected above the SCOs.

Herbicides

Herbicides were not detected in soil samples.

Pesticides

Four pesticides were detected above the Part 375 UU SCOs but below RRU SCOs.

- 4,4'-DDD: 0.0203 mg/kg in EB21_4-6 (UU SCO of 0.0033 mg/kg and RRU SCO of 13 mg/kg)
- 4,4'-DDE: 0.0076 mg/kg in EB04_0-2 (UU SCO of 0.0033 mg/kg and RRU SCO of 8.9 mg/kg)

- 4,4'-DDT: 0.00359 mg/kg in EB18_6-8 to 0.0223 in EB18_0-2 (UU SCO of 0.0033 mg/kg and RRU SCO of 7.9 mg/kg)
- Beta Bhc (Beta Hexachlorocyclohexane): 0.175 mg/kg in EB23_0-2 (UU SCO of 0.036 mg/kg and RRU SCO of 0.36 mg/kg)

Metals

Eight metals were detected at concentrations above the Part 375 UU SCOs. The list below provides a summary of each metal that exceeded the Part 375 UU and/or RRU SCOs and the range of concentrations above the SCOs. Analytes detected above the RRU SCOs are shown in bold. SCOs are shown in parentheses.

- Arsenic: 15.3 mg/kg in EB21_4-6 (UU SCO of 13 mg/kg and RRU SCO of 16 mg/kg)
- **Barium**: 351 mg/kg in EB22_5-7 to 821 mg/kg in EB21_0-2 (UU SCO of 350 mg/kg and RRU SCO of 400 mg/kg)
- Copper: 102 mg/kg in EB21_0-2 to 201 mg/kg in EB15_8-10 (UU SCO of 50 mg/kg and RRU SCO of 270 mg/kg)
- Hexavalent chromium: 1.16 mg/kg in EB11_0-2 (UU SCO of 1 mg/kg and RRU SCO of 110 mg/kg)
- **Lead**: 71.8 mg/kg in EB13_0-2 to 3,570mg/kg in EB22_0-2 (UU SCO of 63 mg/kg and RRU SCO of 400 mg/kg)
- Mercury: 0.195 mg/kg in EB21_4-6 to 0.701 mg/kg in EB21_0-2 (UU SCO of 0.18 mg/kg and RRU SCO of 0.81 mg/kg)
- Nickel: 35 mg/kg in EB01_0-2 (UU SCO of 30 mg/kg and RRU SCO of 310 mg/kg)
- Zinc: 110 mg/kg in EB07_1-2 to 626 mg/kg in EB22_5-7 (UU SCO of 109 mg/kg and RRU SCO of 10,000 mg/kg)

Lead concentrations exceeded the Maximum Concentration of Contaminants for the Toxicity Characteristic of 5 milligrams per liter (mg/L) (i.e., hazardous concentrations of lead) in two samples, EB22_0-2 (7.27 milligrams per liter [mg/L]) and EB22_5-7 (7.07 mg/L).

5.4 Groundwater Findings

5.4.1 Field Observations

Monitoring wells were gauged for non-aqueous phase liquid (NAPL) with an oil-water interface probe. NAPL was not encountered. PID headspace readings ranged from 0.0 parts per million (ppm) in well B-3(OW) to 45.8 ppm in B-1(OW). Based on the synoptic gauging event on

December 31, 2018, groundwater elevation ranged from el 6.3 to el 5.93 (about 18.43 to 18.7 feet bgs) and site groundwater flows north, northwest.

5.4.2 Analytical Results

Seven groundwater samples, including one duplicate sample, were collected. Groundwater samples were analyzed for Part 375 VOCs including 1,4-dioxane, SVOCs, PCBs, pesticides, herbicides, metals (total and dissolved), and the 20-compound list of perfluorinated chemicals (PFCs). Groundwater sample results are summarized in Tables 4 and 5 and shown on Figure 6.

VOCs

VOCs were not detected at concentrations above SGVs.

SVOCs

Phenol was detected at a concentration of 5.5 micrograms per liter (µg/L) in the groundwater sample collected from observation well B-12(OW), exceeding the SGV of 1 µg/L.

PCBs

PCBs were not detected in groundwater samples.

Pesticides

Pesticides were not detected at concentrations above SGVs.

Metals

Groundwater samples collected from each well contained metals at concentrations above the SGVs. The list below provides a summary of each metal that exceeded the SGVs and the range of concentrations above the SGVs. SGVs are shown in parentheses.

Dissolved Metals

- Iron: 587 µg/L in MW09 to 783 µg/L in MW05 (SGV of 300 µg/L)
- Sodium: 70,000 µg/L in MW05 to 229,000 µg/L in MW12 (SGV of 20,000 µg/L)

Total Metals

- Iron: 487 µg/L in B-1(OW) to 2,550µg/L in B-12(OW) (SGV of 300 µg/L)
- Manganese: 321 µg/L in B-1(OW) to 584 µg/L in B-12(OW) (SGV of 300 µg/L)

- Sodium: 132,000 µg/L in MW05 to 432,000 µg/L in MW12 (SGV of 20,000 µg/L)

PFCs (20-compound list)

Several PFCs were detected. Total concentrations of PFCs ranged from 0.009 µg/L in well B-3(OW) to 0.168 µg/L in B-1(OW). As of the time of this report, there is no regulatory standard for these compounds in New York State.

5.5 Soil Vapor Findings

Ten soil vapor samples were collected and submitted for laboratory analysis of USEPA TO-15 VOCs. No standard currently exists for soil vapor samples in New York State. Soil vapor sample results are summarized in Table 6 and shown on Figure 7.

VOCs detected in soil vapor samples include:

1,1,1-Trichloroethane (TCA)	Chloroform	n-Heptane
1,2,4-Trimethylbenzene	Chloromethane	n-Hexane
1,3,5-Trimethylbenzene	Cis-1,2-Dichloroethylene (DCE)	o-Xylene
1,3-Butadiene	Cyclohexane	Propylene
2-Hexanone	Dichlorodifluoromethane	Styrene
4-Ethyltoluene	Ethyl Acetate	Tetrachloroethene (PCE)
Acetone	Ethylbenzene	Tetrahydrofuran
Acrylonitrile	Isopropanol	Toluene
Benzene	M,P-Xylene	Trichloroethene (TCE)
Carbon disulfide	Methyl Ethyl Ketone	Trichlorofluoromethane
Carbon Tetrachloride	Methyl Isobutyl Ketone	
Chloroethane	Methylene Chloride	

PCE was detected at a maximum concentration of 160 micrograms per cubic meter (µg/m³) in SV-7, which exceeds the NYSDOH Air Guideline Value (AGV) of 30 µg/m³, and also may trigger a recommendation to monitor or mitigate when compared to Decision Matrices in the Guidance.

Benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) were detected at concentrations ranging from about 15.13 µg/m^3 in SV-1 to 1,229.80 µg/m^3 in SV-9. Total VOC concentrations ranged from about 74.12 µg/m^3 in SV-1 to 1,544.6 µg/m^3 in SV-9.

5.6 Quality Control Results

Duplicates, field blanks, and trip blanks collected during the RI are listed in Table 1. Quality control sample results were evaluated during data validation. Duplicates and field blanks for soil and groundwater were collected at a frequency of about 1 per 20 primary samples. Field duplicate and parent sample pairs were collected for each media type and analyzed for the parameters described in the preceding paragraphs. Full laboratory reports are provided in Appendix H.

5.7 Data Usability

New York Analytical Services Protocols (ASP) Category B laboratory reports from Chemtech and York for soil, groundwater, and soil vapor samples were provided by and reviewed by a Langan data validator for all samples collected during the RI. The DUSRs found data for groundwater and soil vapor to be 100% usable. Soil data was determined to be 98.8% usable. VOC results were rejected for samples EB01_0-2, EB02_1.5-3.5, EB02_6-8 based on potential loss of instrument sensitivity. Other samples from the same vicinity, or from deeper intervals within the same boring, had VOC results that were not rejected; therefore, the rejection of 1.2% of soil data is not anticipated to impact the conclusions of this RIR. Data qualifiers were updated following completion of the DUSRs. The DUSRs are included in Appendix G.

5.8 Evaluation of Potential Areas of Concern

This section discusses the results of the RI with respect to the AOCs described in Section 3.4. For fill and soil sample results, Part 375 RRU SCOs are the applicable soil standards for comparison based on the anticipated use of the site as a mixed-use commercial and residential development. The results were also compared to Part 375 UU SCOs to evaluate whether unrestricted land use is practical. AOC and sample locations are shown on Figure 3.

5.8.1 AOC 1: Historic Fill

The historic fill layer ranged in elevation from surface grade to about el 23.2 to el 14.4 (1.2 to 10.6 feet bgs) and predominantly consisted of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, roots, glass, clay, and brick. The bottom of the historic fill layer (about el 23.4 to el 15) was encountered above the groundwater table (el 6.30 to el 5.93). Historic fill material located throughout the site contains SVOCs, metals, and pesticides at concentrations above the Part 375 UU and/or RRU SCOs. In borings EB13 and EB18, SVOCs were reported at concentrations up to an order of magnitude higher than what is typically observed in historic fill material in New York City. Lead detections were higher than typical fill in borings EB21 and EB22 and were reported at hazardous concentrations in two samples from boring EB22.

AOC 1 Conclusions

Historic fill, which is ubiquitous across the site footprint, was encountered beneath surface cover to elevations ranging from about el 23.4 to el 15 (1.6 to 10 feet bgs). SVOCs, metals, and pesticides were detected at concentrations above the Part 375 UU and/or RRU SCOs in samples of historic fill, with the deepest exceedance found between about el 13 and 15 (8 -10 feet bgs). Anomalously high concentrations of SVOCs and lead may be related to the quality of fill material at the site and/or historic site uses. Pesticides may be a constituent of the historic fill and/or the result of former pesticide applications or storage at the site. The analytical data indicate that contaminants associated with historic fill have not impacted soil vapor beneath the site.

5.8.2 AOC 2: Historical Site Use

From 1890 to 1951, the site operated with the following uses: a coal/lumber yard, paint shop/storage, manufacturing facilities, woodworking, carpet cleaning, and a tin shop. COCs associated with historical site use include petroleum-related VOCs, chlorinated VOCs (CVOCs), SVOCs, metals, and pesticides in soil, and CVOCs and petroleum-related VOCs in groundwater and soil vapor.

SVOCs were detected in 12 soil samples exceeding RRU SCOs, including two locations (EB13 and EB18) with anomalously high concentrations. Metals, including arsenic, barium, copper, hexavalent chromium, lead, mercury, nickel, and zinc, were detected above UU SCOs and/or RRU SCOs in samples of historic fill collected from across the site footprint. Lead detections were higher than typical fill in borings EB21 and EB22 and were reported at hazardous concentrations in two samples from boring EB22. CVOCs and petroleum-related VOCs were detected in soil samples, but at concentrations below SCOs.

Phenol was detected in one groundwater sample marginally above the SGV. Phenol was detected in soil samples collected from every boring, but at concentrations below UU SCOs. PCE was detected in groundwater in two wells [B-1(OW) and B-12(OW)], but at concentrations below SGVs. PCE was detected at concentrations of up to 160 $\mu g/m^3$ in soil vapor.

AOC 2 Conclusions

SVOCs and metals detected in historic fill may be related to the historical site uses and/or quality of the fill material. Phenol detected in groundwater may be indicative of a release associated with historical site use or may be a constituent of the historic fill (because the groundwater sample was turbid). PCE detected in groundwater (at levels below the standard) and in soil vapor may be indicative of a release associated with historical site use (although PCE was not detected in soil samples) or may be related to an off-site source.

5.8.3 AOC 3: On-Site Petroleum Bulk Storage

The 1912 Sanborn Map shows a UST on the site. Though no geophysical anomalies resembling USTs were identified during the December 2018 geophysical survey, a tank may still be present at the site. COCs associated with AOC 3 include petroleum-related VOCs and lead.

A PID headspace reading of 45.8 ppm was recorded beneath the cap of observation well B-1(OW). Petroleum-like odors were noted in geotechnical boring B8, but not in adjacent RI borings (EB7, EB15, EB19, and EB20). Petroleum-related VOCs were detected in soil, but at concentrations below the UU SCOs. Lead was detected in soil samples above the SCOs and at hazardous concentrations within EB22. Total BTEX compounds were detected in soil vapor at a maximum concentration of 1,229 µg/m³.

AOC 3 Conclusions

Detections of petroleum-related VOCs in soil below the SCOs may indicate a historic gasoline release on site. Lead concentrations in soil, including two hazardous concentrations, may be related to historic fill and/or an on-site release. Petroleum-related VOCs detected in soil vapor may be indicative of an on-site release (although these compounds were not detected above applicable criteria in soil or groundwater samples) or may be related to an off-site source.

5.8.4 AOC 4: Historical Use of Adjoining and Surrounding Properties

Historical uses of the adjoining and surrounding properties include gasoline filling stations, dry cleaners, auto repair facilities, a manufacturing company, and battery service. COCs for the Subject Property associated with AOC 4 include petroleum and chlorinated VOCs.

Petroleum-related VOCs were detected in soil but at concentrations below the UU SCOs. PCE was detected in groundwater in two wells [B-1(OW) and B-12(OW)], but at concentrations below SGVs. PCE was detected at concentrations of up to 160 µg/m^3 in soil vapor. Total VOCs were detected in soil vapor at a maximum concentration of 1,545 µg/m³. Total BTEX compounds were detected in soil vapor at a maximum concentration of 1,229 µg/m³.

AOC 4 Conclusions

PCE and petroleum-related VOC concentrations in soil vapor may be indicative of a release associated with historical site use (although these compounds were not detected above applicable criteria in soil or groundwater samples) or may be related to an off-site source.

6.0 QUALITATIVE HUMAN AND FISH/WILDLIFE EXPOSURE ASSESSMENT

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

In addition to the human health exposure assessment, NYSDEC DER-10 requires an on-site and off-site Fish and Wildlife Resources Impact Analysis (FWRIA) if certain criteria are met. According to the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, there was no need to prepare an FWRIA for the site. A completed form of DER-10 Appendix 3C is included in Appendix I.

6.1 Current Conditions

The site is located at 10-47 Beach 21st Street in Far Rockaway, Queens, New York, and is currently identified on the Queens Borough Tax Map as Block 15705, Lot 69 and portion of Lot 59. Following the completion of tax lot apportionment, the proposed site boundaries will correspond to Block 15705, Proposed New Lot 69. The about 42,500-square-foot (±0.98 acre) site is used for a bus stop and a municipal parking lot that contains a temporary bus shelter. All surfaces, except for an approximately 2,000-square-foot unpaved area in the southwest corner, are covered with pavement. The unpaved area is separated from the bus stop area by a NYC DOT-controlled parking area. The site is located mid-block, on the city block bound by Mott Avenue to the north, Beach 21st Street to the east, Cornaga Avenue to the south, and Beach 22nd Street to the west. A Site Location Map is included as Figure 1.

6.2 Proposed Conditions

The proposed redevelopment project consists of a 10-story mixed-use building (commercial and low-income affordable residential) with a cellar level. The building would be set back 8 to 15 feet from Beach 21st Street. The cellar would span the whole site footprint and be used for parking, storage, and mechanical rooms. The ground floor would include retail and a daycare center. Upper floors would include residential units and indoor and outdoor communal spaces for residents. An approximately 2,900-square-foot area in the southwest corner of the site will would be a grade-level play yard (above the cellar level) associated with the day care. Concrete paving is proposed for the setback area along Beach 21st Street and small patches of landscaped areas are proposed around the daycare play yard. It is estimated that an excavation across the site footprint to 12 - 15 feet would be needed to construct the cellar with some deeper excavations for foundation elements.

6.3 Summary of Environmental Conditions

AOCs included historic fill, historical site use, suspected on-site petroleum bulk storage, and historical use of adjoining/surrounding properties. COCs associated with the AOCs include VOCs, SVOCs, pesticides, and metals.

SVOCs, metals, and pesticides were detected at concentrations above the Part 375 UU and/or RRU SCOs in samples of historic fill collected from across the site. One VOC, acetone, was detected at a concentration above the Part 375 UU SCO (but not the RRU SCO) in one sample in the southern part of the site and a duplicate sample in the center of the site. Acetone was also detected above the UU SCO in a duplicate sample; however, acetone is a common laboratory contaminant and its presence in soil is not likely indicative of a release.

Phenol was detected in one groundwater sample marginally above the SGV. PCE was detected in groundwater, but concentrations did not exceed SGVs. Total and dissolved metals concentrations detected above the SGVs in groundwater samples collected from across the site footprint are attributable to regional groundwater conditions and are not considered indicative of a release.

BTEX compounds and total VOCs in soil vapor were detected at maximum concentrations of 1,229 µg/m³ and 1,545 µg/m³, respectively. PCE was detected in soil vapor at concentrations up to 160 µg/m³.

A PID headspace reading of 45.8 ppm was recorded beneath the cap of observation well B-1(OW). Petroleum odors were observed in geotechnical boring B-8, but not in surrounding RI borings. Petroleum-related VOCs were detected in soil, but at concentrations below UU SCOs.

6.4 Conceptual Site Model

A conceptual site model (CSM) has been developed based on the findings of the RI. The purpose of the CSM is to develop a simplified framework for understanding the distribution of impacted materials, potential migration pathways, and potentially complete exposure pathways.

6.4.1 Potential Sources of Contamination

Potential sources of contamination include historic fill material, historical site use, suspected on-site petroleum bulk storage, and historical use of adjoining/surrounding properties.

Historic fill material encountered beneath surface cover to elevations ranging from about el 23.2 to el 14.4 (1.2 to 10.6 feet bgs) originated from unidentified source areas and was placed as backfill at an unknown time. SVOCs detected at concentrations above the Part 375 UU and/or RRU SCOs may be related to the nature of historic fill and/or an historical site (e.g., coal yard).

Metals were detected at concentrations above the Part 375 UU and RRU SCOs and are considered hazardous for lead in boring EB22. Metal impacts may be related to the nature of the historic fill and/or historical site uses as a coal yard and tin shop. Pesticides detected above the Part 375 UU SCOs at several locations between 0 and 8 feet bgs may be the result of pesticide applications or storage at the site.

Phenol detected in groundwater may be indicative of a release associated with historical site use or may be a constituent of the historic fill (because the groundwater sample was turbid). PCE detected in groundwater below SGVs and in soil vapor at concentrations of up to 160 µg/m^3 may be indicative of an on-site release associated with historical site use (although PCE was not detected in soil samples) or may be related to off-site sources.

Detections of petroleum-related VOCs in soil (that did not exceed SCOs) may be related to a historical on-site petroleum release. Petroleum-related VOCs detected in soil vapor may be indicative of an on-site release and/or off-site sources.

6.4.2 Exposure Media

The impacted media include soil, groundwater, and soil vapor. Analytical data for COCs indicates that SVOCs, metals, and pesticides above UU and/or RRU SCOs are limited to the historic fill layer. Phenol was detected in one groundwater sample marginally above the SGV. Petroleum-related VOCs were detected in soil (below SCOs) and in soil vapor. PCE was detected in groundwater (below SGVs) and in soil vapor at concentrations up to 160 µg/m^3; however, an on-site source of CVOCs was not identified in soil.

6.4.3 Receptor Populations

The site is improved with a concrete and asphalt cover with no permanent on-site structures. An about 2,000-square-foot uncapped area is located in the southwest corner. The uncapped area is separated from the bus stop area by a NYC DOT-controlled parking area and soil samples collected from the uncapped area did not contain constituents above RRU SCOs. A wooden fence restricts access to the uncapped area. Fencing is located along the southern and western perimeters, otherwise the site is accessible. Current receptor populations include the general public, pedestrians, and visitors to the site associated with pre-development assessment and investigation. During site development, human receptors will be limited to construction and remediation workers, authorized guests visiting the site, and the public and pedestrians adjacent to the site. Under future conditions, receptors will include the residential and commercial use occupants, patrons and employees, and the nearby community, including children.

6.5 Potential Exposure Pathways – On-Site

6.5.1 Current Conditions

The site is covered by an impervious surface (concrete and asphalt), except for an about 2,000-square-foot area in the southwest corner that is restricted by wooden fencing. oil samples collected from the uncapped area did not contain constituents above RRU SCOs. Human exposure to contaminated soil through dermal absorption, inhalation, and ingestion is minimal and controlled through the presence of the impervious surface and restricted to a lesser extent by a fence restricting access to the unpaved area in the southwest corner. The unpaved area is separated from the bus stop area by a NYC DOT-controlled parking area and soil samples collected from the uncapped area did not contain constituents above RRU SCOs. There is a potential exposure pathway through dermal absorption, inhalation, and ingestion during soil sampling associated with site investigation, but it is controlled through implementation of the Health and Safety Plan (HASP).

As groundwater in this area of New York City is not used as a potable water source, a complete exposure pathway to groundwater under current site conditions is unlikely. There is a potential exposure pathway through dermal absorption, inhalation, and ingestion during groundwater sampling associated with site investigation, but it is controlled through implementation of the HASP. Contaminated soil vapor may be emanating from contaminated groundwater; however, there are no current buildings for it to infiltrate.

There is a potential exposure pathway to soil vapor through inhalation during soil, groundwater, and soil vapor sampling associated with site investigation. This pathway is also controlled through implementation of the HASP.

6.5.2 Construction/Remediation Conditions

Construction and remediation may result in potential exposures to site contaminants in the absence of a HASP and a Community Air Monitoring Plan (CAMP). Construction and remedial activities include demolition of surface covers and the temporary bus shelter, the excavation and off-site disposal of impacted soil, and construction of foundation components. In the absence of a HASP and CAMP, this scenario presents the potential for exposure of soil COCs to construction and remediation workers via dermal absorption, ingestion, and inhalation of vapors and particulate matter. This exposure pathway will be marginalized through the implementation of the HASP, CAMP, and vapor and dust suppression techniques.

Groundwater may be encountered during excavation by workers, and there is potential for exposure to groundwater COCs, in the absence of a HASP, to construction workers via dermal

absorption or ingestion. This exposure pathway will be marginalized through the implementation of the HASP.

During site development, construction and remediation workers and the surrounding community could be exposed to soil vapor COCs and contaminated soil via inhalation. Exposure to soil vapor and dust will be limited through the implementation of a HASP, CAMP, and dust and vapor suppression techniques.

6.5.3 Proposed Future Conditions

The proposed development is anticipated to include a 10-story mixed-use building (commercial and low-income residential) with a cellar level. The building would be set back 8 to 15 feet from Beach 21st Street. Upon completion of the new development, the site will be covered by a concrete building slab, with a continuous waterproofing/vapor barrier under the slab and along all subsurface foundation walls. The foundation and cellar slab with waterproofing/vapor barrier will prevent direct human exposure to residual impacted media that may be left in place or may migrate to the site from an off-site location. In addition, the potential for soil vapor intrusion will be evaluated, with additional mitigation measure installed as necessary. As such, there is no complete exposure pathway for future users. There is no pathway for ingesting groundwater COCs, because the site and surrounding area will continue to obtain municipally-supplied drinking water that originates from surface water reservoirs located upstate.

6.6 Potential Exposure Pathways – Off-Site

In the absence of a CAMP and a HASP, soil has the potential to be transported off-site by wind in the form of dust or on the tires of vehicles or equipment leaving the site during the excavation and foundation construction stage of redevelopment, which includes remediation. This could create a potential exposure pathway to the public adjacent to the site. Groundwater that is removed during construction will be pre-treated (as necessary) and discharged to the New York City sewer system, per New York City Department of Environmental Protection (NYCDEP) permit requirements, or containerized in a temporary storage tank pending disposal at a permitted off-site facility. Therefore, the potential for public exposure to groundwater on adjacent sites will be minimalized. During construction, soil vapor will primarily migrate vertically through the subsurface and will dissipate and dilute with ambient air.

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

- The site is located in an urban area and is mostly covered with continuous impervious surface material and the non-paved area is partially fenced off.

- During site excavation, foundation construction, and remediation the following protective measures will be implemented:
    - Air monitoring will be conducted for particulates (dust) and VOCs during ground-intrusive work as part of a CAMP. Dust and/or vapor suppression techniques will be employed to limit the potential for off-site migration of soil and vapors.
    - Vehicle tires and undercarriages will be washed as necessary prior to leaving the site to prevent tracking material off-site.
    - A soil erosion/sediment control plan will be implemented during construction to control off-site migration of soil.
- The new building will include a waterproofing/vapor barrier to be installed beneath the cellar slab and along the sidewalls to sidewalk grade. A continuous impervious surface covering comprised of the proposed building basement slab will span the site footprint.
- Groundwater in in this part of NYC is not used as a potable water source and the nearest ecological receptor, the Motts Basin, is located about 2,400 feet north of the site.

6.7 Evaluation of Human Health Exposure

Based on the CSM and the review of environmental data, complete on-site exposure pathways appear to be present, in the absence of mitigation and controls, in current and construction-phase conditions. The complete exposure pathways indicate there is a risk of exposure to humans from site contaminants via exposure to soil, groundwater, and soil vapor if mitigation and controls are not implemented.

Complete exposure pathways have the following five elements: 1) a contaminant source; 2) a contaminant release and transport mechanism; 3) a point of exposure; 4) a route of exposure; and 5) a receptor population. A discussion of the five elements comprising a complete pathway as they pertain to the site is provided below.

6.7.1 Current Conditions

Contaminant sources include historic fill with varying concentrations of SVOCs, pesticides, and metals; groundwater with varying concentrations of SVOCs and metals; and soil vapor with concentrations of VOCs ranging from 74 to 1,545 µg/m^3.

Contaminant release and transport mechanisms include potential release and transport during penetration of the site cover for soil, groundwater, and soil vapor sampling. The potential receptor is the on-site sampling personnel and the nearby public. Under current conditions, the likelihood of exposure to humans is limited due to the following:

- The site footprint is primarily covered by concrete and asphalt, which limits direct contact with soil, groundwater, and soil vapor. The unpaved area in the southwest corner is partially fenced off to restrict access and is not used for parking, and soil samples collected from the uncapped area did not contain constituents above RRU SCOs.
- Sampling activities are completed in accordance with a HASP and CAMP that is designed to monitor and prevent exposure to soil, groundwater, and soil vapor contaminants.
- Groundwater at the site is not a potable water source.

6.7.2 Construction/Remediation Activities

During the excavation and foundation construction stage of redevelopment, which includes remediation, points of exposure include disturbed and exposed soil during excavation, dust and potential organic vapors generated during excavation, and contaminated groundwater encountered during excavation and/or dewatering operations. Routes of exposure include ingestion and dermal absorption of contaminated soil and groundwater, inhalation of potential organic vapors arising from contaminated soil vapor and groundwater, and inhalation of dust originating from contaminated soil. The receptor population includes construction and remediation workers and, to a lesser extent, the public adjacent to the site.

The potential for completed exposure pathways is present since all five elements exist; however, the risk can be avoided or minimized by applying appropriate health and safety measures during construction and remediation, such as monitoring the air for organic vapors and dust, using vapor and dust suppression measures, cleaning truck undercarriages before they leave the site to prevent off-site soil tracking, maintaining site security, and wearing the appropriate personal protective equipment (PPE).

A HASP, a RAWP, and a CAMP include measures such as conducting an air-monitoring program, donning PPE, covering soil stockpiles, altering work sequencing, maintaining a secure construction entrance, proper housekeeping, and applying vapor and dust suppression measures to prevent off-site migration of contaminants during construction will be implemented. Such measures will prevent completion of potential migration pathways for soil, groundwater, and soil vapor.

6.7.3 Proposed Future Conditions

For the proposed future conditions, residual contaminants may remain on-site, depending on the remedy, and would, to a lesser extent, include those listed under current conditions. If residual impacts exist and controls are not implemented, points of exposure could include potential cracks in the foundation of the proposed development, exposure during any future ground-intrusive work, or inhalation of vapors entering the building. The receptor population includes residential

and commercial use occupants, patrons, and employees, and the nearby community, including children. The possible routes of exposure can be avoided or mitigated by removal of contaminated soil or construction and maintenance of a site capping system (e.g., concrete building slab or at least 2 feet of clean soil), installation of a waterproofing/vapor barrier or other potentially required mitigation measures, and implementation of a Site Management Plan (SMP), if necessary depending on the remedy.

6.7.4 Human Health Exposure Assessment Conclusions

1. Human exposure to site contaminants is limited under current conditions due to the surface cover (mostly pavement, except for an unpaved, partially fenced-off area in the southwest corner). The unpaved area is separated from the bus stop area by a NYC DOT-controlled parking area and soil samples collected from the uncapped area did not contain constituents above RRU SCOs. The primary exposure pathways are dermal contact, ingestion, and inhalation of soil, groundwater, or soil vapor by site investigation workers and, to a lesser extent, the nearby public. The exposure risks can be avoided or minimized by following the appropriate HASP and vapor and dust suppression measures, and by implementing a CAMP during investigation activities.
2. In the absence of mitigation and controls, there is potential for exposure during the construction-phase activities. The primary exposure pathways are:
    a. Dermal contact, ingestion, and inhalation of contaminated soil, groundwater, or soil vapor by construction workers
    b. Dermal contact, ingestion, and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the site

    These can be avoided or minimized by implementing CAMP and by following the appropriate HASP, vapor and dust suppression, site security measures, and following a NYSDEC-approved RAWP.
3. The existence of a complete exposure pathway for site contaminants to human receptors during proposed future conditions is unlikely, as all or the majority of historic fill material will be excavated and transported to an off-site disposal facility and residual soil will be capped, if required, with an impermeable cover or 2 feet of clean soil. Regional groundwater is not used as a potable water source in in this part of NYC. The potential pathway for soil vapor intrusion into the building would be addressed by installation of a waterproofing/vapor barrier and other potentially required mitigation measures, which will minimize soil vapor intrusion.
4. It is possible that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors during current, construction-phase, and future

conditions. Monitoring and control measures have been and will continue to be used during investigation and construction to prevent completion of this pathway. Under future conditions, the site will be remediated and engineering and institutional controls will be implemented, if necessary, to prevent completion of this pathway.

7.0 NATURE AND EXTENT OF CONTAMINATION

This section evaluates the nature and extent of soil, groundwater, and soil vapor contamination. The nature and extent of the contamination is derived from a combination of field observations and analytical data that were discussed in Section 5.0.

7.1 Soil Contamination

Historic fill predominantly consisting of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, roots, glass, clay, and brick was encountered across the site beneath surface cover to elevations ranging from about el 23.2 to el 14.4 (1.2 to 10.6 feet bgs). No staining, odor or elevated PID readings were observed in the fill. Historic fill sample analytical results included the following:

- SVOCs were detected at concentrations above the Part 375 UU and/or RRU SCOs, including atypical concentrations in borings EB13 and EB18. The SVOCs may be related to the nature of historic fill and/or historical site use as a coal yard.
- Four pesticides (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and Beta Bhc (Hexachlorocyclohexane)) were detected at concentrations above the UU SCO in samples of historic fill collected at various depths between 0 and 8 feet bgs. Pesticides in historic fill material may be the result of historical pesticide applications or storage on site.
- Metals were detected at concentrations above the Part 375 UU SCOs and RU SCOs in samples of historic fill throughout the site. Hazardous concentrations of lead were reported for two samples in boring EB22. The reported metal concentrations may be related to the nature of historic fill and/or to historical site uses as a coal yard and a tin shop.
- Low level detections of petroleum-related VOCs in soil (that did not exceed SCOs) may be related to a historical on-site petroleum release.

7.2 Groundwater Contamination

A PID headspace reading of 45.8 ppm was recorded beneath the cap of observation well B-1(OW). PCE was detected in groundwater, but at a concentration below the SGVs. Low-level detections of PCE in groundwater may be indicative of a former on-site release (although not detected in soil samples) and/or may be related to off-site sources. Concentrations of total and dissolved metals identified in groundwater samples are attributable to regional groundwater conditions and are not considered indicative of a release.

7.3 Soil Vapor Contamination

VOCs were identified in soil vapor samples collected from across the site footprint. PCE was reported at concentrations up to 160 µg/m^3. PCE was also detected in groundwater and may be indicative of a former on-site release (although not detected in soil samples) and/or may be related to off-site sources. Soil vapor samples contained petroleum-related BTEX compounds ranging in concentration from about 15 to 1,229 µg/m^3. Total VOC concentrations in soil vapor ranged from 74 µg/m^3 in SV-1 to 1,545 µg/m^3 in SV-9. Petroleum-related and other VOCs detected in soil vapor may be indicative of a former on-site release and/or may be related to off-site sources.

8.0 CONCLUSIONS

The conclusions provided below are based on data collected during the RI, including qualitative data (field observations and instrumental readings) and laboratory analytical soil, groundwater, and soil vapor sample results.

1. Stratigraphy: Historic fill predominantly consisting of brown or grey, fine- to coarse-grained sand with varying amounts of gravel, sand, concrete, roots, glass, clay and brick was encountered across the site from beneath the surface cover to elevations ranging from about 1.2 to 10.6 feet bgs (about el 23.2 to el 14.4). Native soil encountered below historic fill predominantly consisted of fine- to coarse-grained sand with varying amounts of gravel; trace silt and clay were observed at isolated locations. Bedrock was not encountered during the RI or geotechnical evaluation.
2. Hydrogeology: Synoptic groundwater measurements were collected on December 31, 2018. Based on groundwater measurements and observations, an overburden aquifer exists beneath the site and groundwater elevations ranged from el 6.3 to el 5.93 (about 18.43 to 18.7 feet bgs).
3. Historic Fill: Laboratory analytical results indicated that the historic fill material contains SVOCs, metals, and pesticides at concentrations above the Part 375 UU and/or RRU SCOs. Hazardous concentrations of lead were reported for two samples in boring EB22 in the central part of the site. Anomalously high SVOC concentrations were reported in borings EB13 and EB18 in the southwest and central parts of the site, respectively. Petroleum-related VOCs were detected in historic fill samples, but at concentrations below the UU SCOs. No staining, odor or elevated PID readings were observed in the fill.
4. Native Soil: VOC, SVOC, pesticide, herbicide, metal and PCB concentrations did not exceed the Part 375 UU SCOs in native soil samples.
5. Groundwater: The chlorinated solvent PCE was detected in groundwater, but at concentrations below the SGVs. Low-level detections of PCE in groundwater may be indicative of a former on-site release and/or off-site sources. Phenol, detected in one groundwater sample marginally above the SGV, may be indicative of a release associated with historical site use or may be a constituent of the historic fill (because groundwater sample was turbid). Total and dissolved metals concentrations detected above the SGVs in groundwater samples are attributable to regional groundwater conditions and are not considered indicative of a release.

   Soil Vapor: PCE was reported at concentrations up to 160 µg/m^3 in soil vapor. Soil vapor samples contained petroleum-related BTEX compounds ranging in concentration from

about 15 to 1,229 µg/m^3. Total VOC concentrations in soil vapor ranged from 74 µg/m3 in SV-1 to 1,545 µg/m3 in SV-9. Petroleum-related and other VOCs detected in soil vapor may be indicative of a former on-site release and/or may be related to off-site sources.

6. Sufficient analytical data were gathered during the RI to establish site-specific soil cleanup levels and to develop a remedy for the site. The remedy will be described and evaluated in the RAWP prepared in accordance with New York State BCP guidelines. The remedy will address impacts to soil, groundwater, and soil vapor described in this RIR.

9.0 REFERENCES

1. Langan, Phase I Environmental Site Assessment, dated September, 2018.

2. AKRF, Phase I Environmental Site Assessment, for Far Rockaway Municipal Parking Field, dated June 2016.

3. New York State Department of Environmental Conservation, Division of Environmental Remediation, Draft Brownfield Cleanup Program Guide, dated May 2004.

4. New York State Department of Environmental Conservation, DER-10 Technical Guidance for Site Investigation and Remediation, issued May 3, 2010; effective June 18, 2010.

5. New York State Department of Environmental Conservation, Part 375 of Title 6 of the New York Codes, Rules, and Regulations, Effective December 14, 2006.

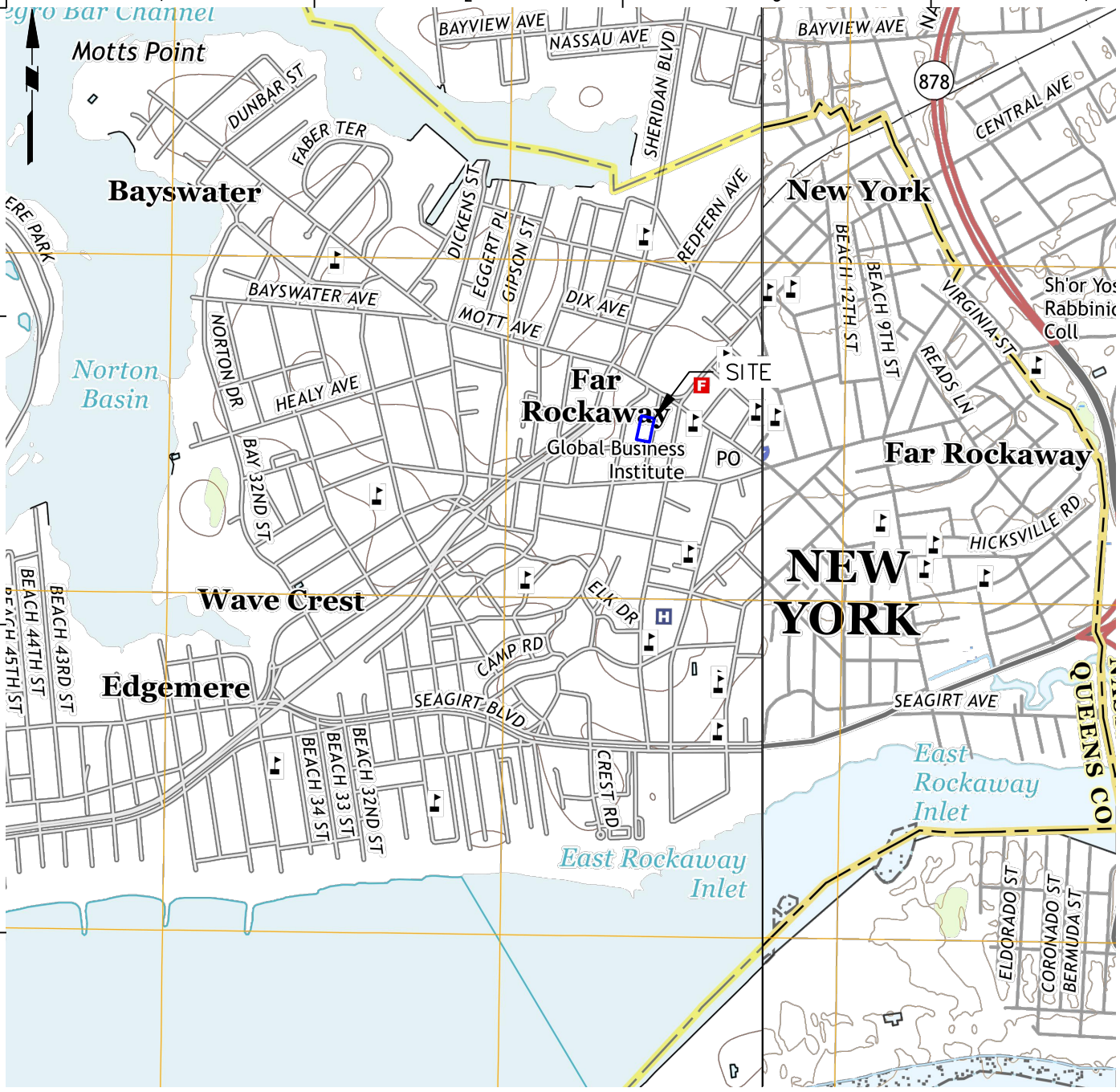
6. New York State Department of Health, Final Guidance for the Evaluation of Soil Vapor Intrusion in the State of New York, dated October 2006, revised May 2017.

7. New York State Division of Water Technical and Operational Guidance Series (TOGS) (1.1.1) dated June 1998.

8. United States Environmental Protection Agency, Low Flow Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, EQASOP-GW 001, January 19, 2010.

9. Langan, Draft Geotechnical Engineering Study, dated January 10, 2019

FIGURES



NOTES:
1. IMAGE FROM THE UNITED STATES GEOLOGICAL SURVEY (USGS) FAR ROCKAWAY, NY AND LAWRENCE, NY 7.5–MINUTE QUADRANGLE MAPS
2. FIGURE NOT DRAWN TO SCALE

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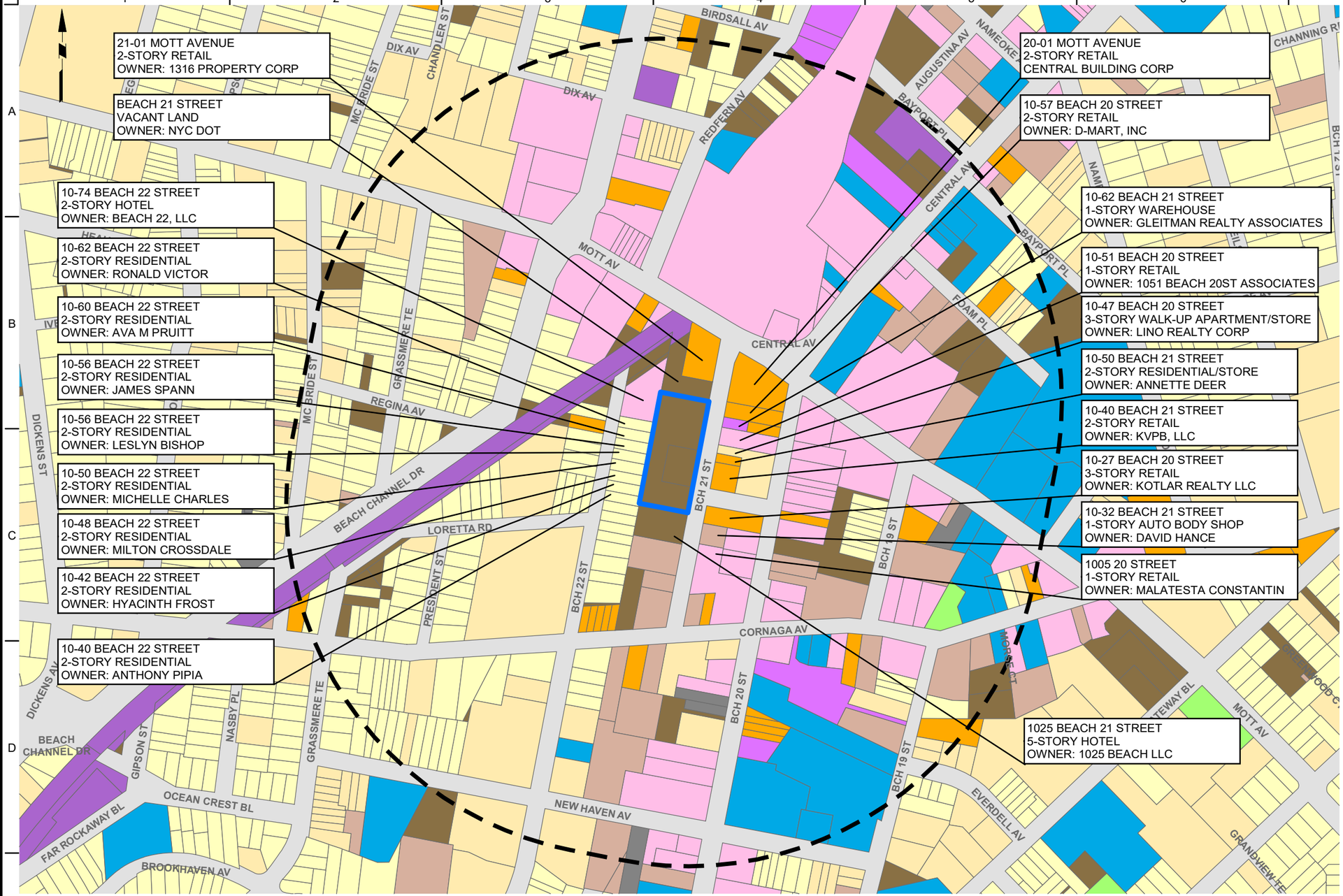
BLOCK No. 15705, LOT No. 69 AND p/o 59
FAR ROCKAWAY
QUEENS NEW YORK

Figure Title
SITE LOCATION MAP

Project No.	17050601
Date	09/07/18
Drawn By	EB
Checked By	JA

Figure No. **1**
Sheet 1 of 7

Filename: \\langan.com\data\NYC\data6\170540601\Project Data\CAD\01\2D-DesignFiles\Environmental\RIR\Site Location Map\Figure 1 - Site Location Map.dwg Date: 4/4/2019 Time: 12:19 User: jarmstrong Style Table: Langan.stb Layout: ANSIA-BP



LEGEND:

- APPROXIMATE SITE BOUNDARY
- 1,000 FOOT RADIUS

LAND USE

- ONE & TWO FAMILY BUILDINGS
- MULTI-FAMILY RESIDENTIAL
- MIXED USE
- OPEN SPACE & OUTDOOR RECREATION
- COMMERCIAL
- INSTITUTIONS
- INDUSTRIAL
- PARKING FACILITIES
- TRANSPORTATION & UTILITY
- VACANT LAND
- NO DATA

NOTES:
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Drawing Title
SURROUNDING LAND USE MAP

Project No. 170540601	Figure 2
Date 4/4/2019	
Scale 1"=300'	
Drawn By MG	Sheet 2 of 7

Path: \\langan.com\data\NYC\data6\170540601\Project Data\ArcGIS\MXD\Environmental_Figures\Final\Figure 2 - Surrounding Land Use Map.mxd Date: 4/4/2019 User: mgeorgalas Time: 11:12:14 AM

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO REPAIR FACILITY (1999-2006)

AOC 2: HISTORICAL SITE USE
- RAILROAD TRACK (1886-1999)
- COAL/LUMBER YARD (1890-1933)
- MANUFACTURING FACILITIES (1912-1951)
- WOODWORKING (1912-1962
- CARPET CLEANING (1912)
- TIN SHOP (1951)
- PAINT FACILITIES (1912-1951)

AOC 3: ON-SITE PBS
- UNDOCUMENTED UST (1912)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO REPAIR FACILITY WITH GASOLINE TANK (1933-1951)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- SERVICE STATION (1962-2005)
- AUTO REPAIR FACILITY (2000-2005)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- DRY CLEANER (1994-1997)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- DRY CLEANER (1886-1999)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO FACILITY WITH GASOLINE TANK (1933-1951)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO FACILITY (1912)

AOC 1: HISTORIC FILL

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- MANUFACTURING COMPANY (1950-1970)
- AUTO SERVICE (2005)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- SERVICE STATION (1939)
- BATTERY SERVICE (1934)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO REPAIR FACILTIES (1933-2006)
- GASOLINE FILLING STATION (1933-1951)

AOC 4: HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
- AUTO REPAIR FACILTIES (1933-PRESENT)
- GASOLINE FILLING STATION (1934-1988)

LEGEND:

- EB8 — SOIL BORING LOCATION
- EB12 (MW12) — SOIL BORING LOCATION W/ MONITORING WELL
- SV12 — SOIL VAPOR SAMPLE
- B-12 (OW) — GEOTECHNICAL BORING LOCATION W/ OBSERVATION MONITORING WELL
- APPROXIMATE SITE BOUNDARY
- TAX LOTS

NOTES:
1. BOUNDARY AND TOPOGRAPHIC SURVEY OBTAINED FROM HAKS ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C., DATED SEPTEMBER 2016.
2. SAMPLE LOCATIONS ARE BASED ON FIELD MEASUREMENTS.
3. THE REMEDIAL INVESTIGATION WAS COMPLETED BETWEEN DECEMBER 11, 2018 AND FEBRUARY 19, 2019.
4. AOC = AREA OF CONCERN
5. AOC 1 = HISTORIC FILL (SITEWIDE)
6. AOC 2 = HISTORICAL SITE USE (SITEWIDE)
7. AOC 3 = ON-SITE PETROLEUM BULK STORAGE (PBS)
8. AOC 4 = HISTORICAL USE OF ADJOINING AND SURROUNDING PROPERTIES
9. AOCS 1 AND 2 ENCOMPASS THE ENTIRE SITE FOOTPRINT.
10. UST = UNDERGROUND STORAGE TANK

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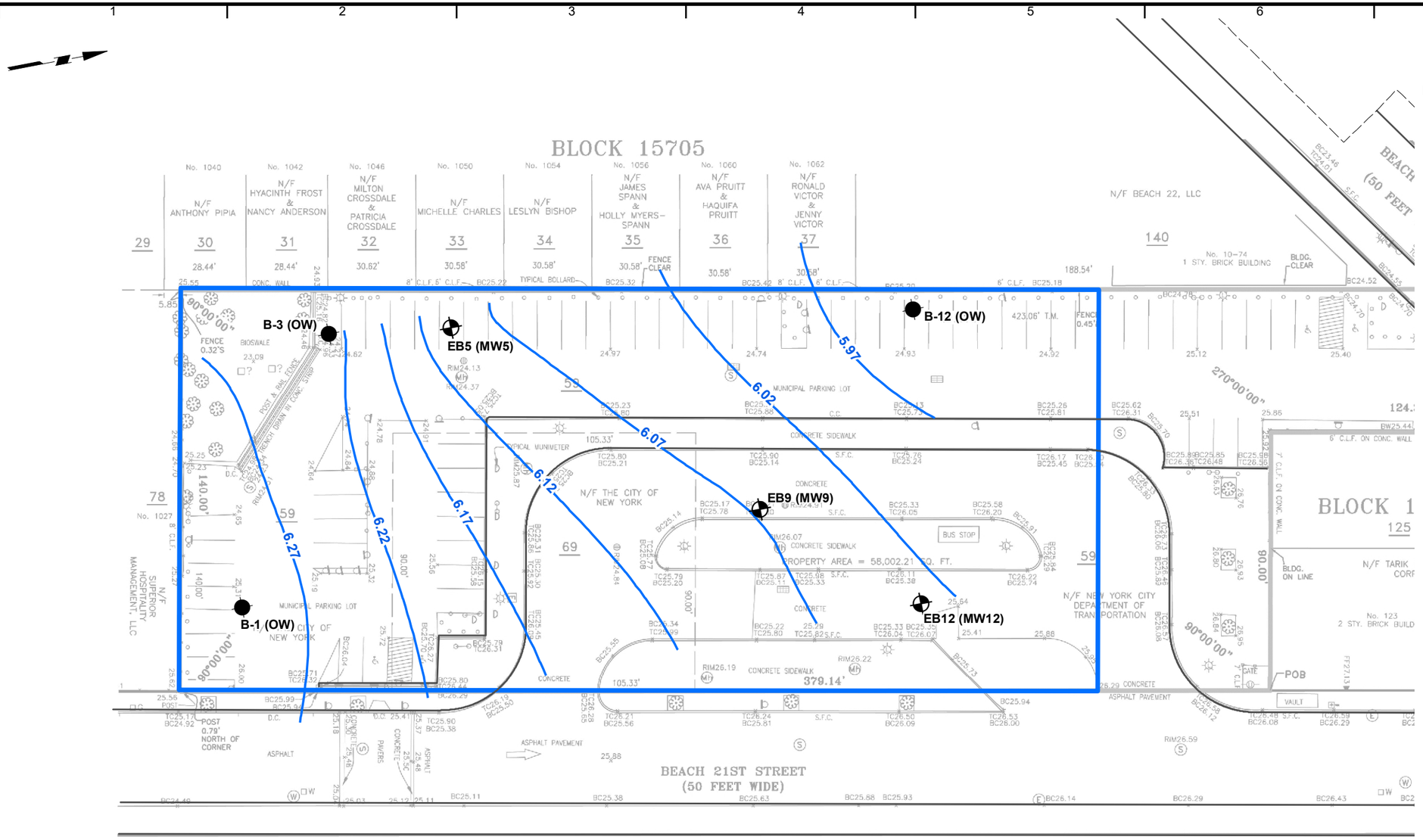
Drawing Title
AOC AND SAMPLE LOCATION PLAN

Project No. 170540601	Figure 3
Date 4/4/2019	
Scale 1"=100'	
Drawn By MG	Sheet 3 of 7

Path: \\langan.com\data\NYC\data6\170540601\Project Data\ArcGIS\MXD\Environmental_Figures\Final\Figure 3 - AOC and Sample Location Plan.mxd Date: 4/4/2019 User: mgeorgalas Time: 11:13:09 AM



LEGEND:

- EB9 (MW9) — ENVIRONMENTAL BORING LOCATION
- B-12 (OW) — GEOTECHNICAL BORING LOCATION W/ OBSERVATION MONITORING WELL
- 5.97 — GROUNDWATER CONTOURS
- APPROXIMATE SITE BOUNDARY
- CURB LINE
- NYCTA ELEVATED TRACK LIMITS

NOTES:
1. BOUNDARY AND TOPOGRA PHIC SURVEY OBTAINED FROM HAKS ENGINEERS, ARCH ITECTS & LAND SURVEY ORS, P.C., DATED 12 SEPTEMBER 2 016.

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GROUNDWATER CONTOUR MAP

Project No. 170540601	Figure 4
Date 4/8/2019	
Scale 1"=40'	
Drawn By MG	Sheet 4 of 7

Path: \\langan.com\data\NYC\data6\170540601\Project Data\ArcGIS\MXD\Environmental_Figures\Final\Figure 4 - Groundwater Contours Map.mxd Date: 4/8/2019 User: mgeorgalas Time: 1:54:45 PM

Sample ID Sample Date Depth Range (feet bgs)	EB01_0-2 12/17/2018 0-2	EB01_12-14 12/17/2018 12-14
VOCs (mg/kg)	ND	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	NE	ND
Inorganics (mg/kg)		
Nickel	**35**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB06_1-3 12/14/2018 1-3	EB06_12-14 12/14/2018 12-14
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	NE	NE
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**98.7**	NE
Zinc	**163**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB08_1.5-3.5 12/17/2018 1.5-3.5	EB08_12-14 12/17/2018 12-14
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Pyrene	**1.2** J	ND
Benzo(b)Fluoranthene	**1.6** J	ND
Indeno(1,2,3-c,d)Pyrene	**0.58** J	ND
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)	NE	NE

Sample ID Sample Date Depth Range (feet bgs)	EB16_0-2 3/13/2019 0-2	EB16_4-6 3/13/2019 4-6
VOCs (mg/kg)	ND	NE
SVOCs (mg/kg)	NE	ND
Pesticides (mg/kg)	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Mercury	**0.226**	ND

Sample ID Sample Date Depth Range (feet bgs)	EB23_0-2 3/13/2019 0-2
VOCs (mg/kg)	ND
SVOCs (mg/kg)	NE
Pesticides (mg/kg)	
Beta Bhc (Beta Hexachlorocyclohexane)	**0.175** D
Herbicides (mg/kg)	ND
PCBs (mg/kg)	ND
Inorganics (mg/kg)	NE

Sample ID Sample Date Depth Range (feet bgs)	EB11_0-2 12/12/2018 0-2	EB11_12-14 12/12/2018 12-14
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Chromium, Hexavalent	**1.16**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB13_0-2 3/13/2019 0-2	EB13_6-8 3/13/2019 6-8
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	**1.57** D	**12.3** D
Benzo(a)Pyrene	**1.59** D	**11.1** D
Benzo(b)Fluoranthene	**1.54** D	**8.25** D
Benzo(k)Fluoranthene	**1.41** D	**10.3** D
Chrysene	**1.61** D	**11.7** D
Dibenz(a,h)Anthracene	**0.43** D	**2.84** D
Indeno(1,2,3-c,d)Pyrene	**1.37** D	**7.37** D
Pesticides (mg/kg)	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	NE	ND
Inorganics (mg/kg)		
Lead	**71.8**	**72.9**
Mercury	NE	**0.242**

Sample ID Sample Date Depth Range (feet bgs)	EB21_0-2 3/5/2019 0-2	EB21_4-6 3/5/2019 4-6
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	**1.46** D	NE
Benzo(a)Pyrene	**1.48** D	NE
Benzo(b)Fluoranthene	**1.24** D	NE
Benzo(k)Fluoranthene	**0.998** D	NE
Chrysene	**1.22** D	NE
Indeno(1,2,3-c,d)Pyrene	**0.932** D	NE
Pesticides (mg/kg)		
4,4'-DDD	ND	**0.0203** D
4,4'-DDT	**0.00597** D	**0.0144** D
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Arsenic	NE	**15.3**
Barium	**821**	NE
Copper	**102**	**143**
Lead	**1,250**	**411**
Mercury	**0.701**	**0.195**
Zinc	**525**	**273**
TCLP - Inorganics (mg/L)		
Lead	NE	NA

Sample ID Sample Date Depth Range (feet bgs)	EB02_1.5-3.5 12/14/2018 1.5-3.5	EB02_6-8 12/14/2018 6-8	EB02_12-14 12/14/2018 12-14
VOCs (mg/kg)			
Acetone	**0.21**	ND	NE
SVOCs (mg/kg)	NE	NE	NE
Pesticides (mg/kg)	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)	NE	ND	ND
Inorganics (mg/kg)			
Lead	**119**	NE	NE

Sample ID Sample Date Depth Range (feet bgs)	EB18_0-2 3/5/2019 0-2	EB18_6-8 3/5/2019 6-8	SODUP04_030519 3/5/2019 6-8
VOCs (mg/kg)			
Acetone	NE	NE	**0.051**
SVOCs (mg/kg)			
Benzo(a)Anthracene	**10.5** D	NE	NE
Benzo(a)Pyrene	**10** D	NE	NE
Benzo(b)Fluoranthene	**8.48** D	NE	NE
Benzo(k)Fluoranthene	**6.64** D	NE	NE
Chrysene	**8.75** D	NE	NE
Dibenz(a,h)Anthracene	**1.43** D	NE	NE
Indeno(1,2,3-c,d)Pyrene	**7.1** D	NE	NE
Pesticides (mg/kg)			
4,4'-DDT	**0.0223** D	**0.00359** D	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)	ND	ND	ND
Inorganics (mg/kg)			
Lead	**401**	**109**	**90.3**
Zinc	**392**	**118**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB22_0-2 3/5/2019 0-2	EB22_5-7 3/5/2019 5-7
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	NE	**3.58** D
Benzo(a)Pyrene	NE	**3.46** D
Benzo(b)Fluoranthene	NE	**2.64** D
Benzo(k)Fluoranthene	NE	**2.2** D
Chrysene	NE	**2.44** D
Dibenz(a,h)Anthracene	NE	**0.605** D
Indeno(1,2,3-c,d)Pyrene	**0.618** D	**2.26** D
Pesticides (mg/kg)	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Barium	NE	**351**
Lead	**3,570**	**2,420**
Mercury	NE	**0.367**
Zinc	**432**	**626**
TCLP - Inorganics (mg/L)		
Lead	7.27	7.07

Sample ID Sample Date Depth Range (feet bgs)	EB15_0-2 3/5/2019 0-2	EB15_8-10 3/5/2019 8-10
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	NE	**1.28** D
Benzo(a)Pyrene	NE	**1.13** D
Benzo(b)Fluoranthene	NE	**1.07** D
Benzo(k)Fluoranthene	NE	**0.813** D
Chrysene	NE	**1.14** D
Indeno(1,2,3-c,d)Pyrene	**0.534** D	**0.767** D
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Barium	NE	**574**
Copper	NE	**201**
Lead	**94.5**	**611**
Zinc	NE	**298**

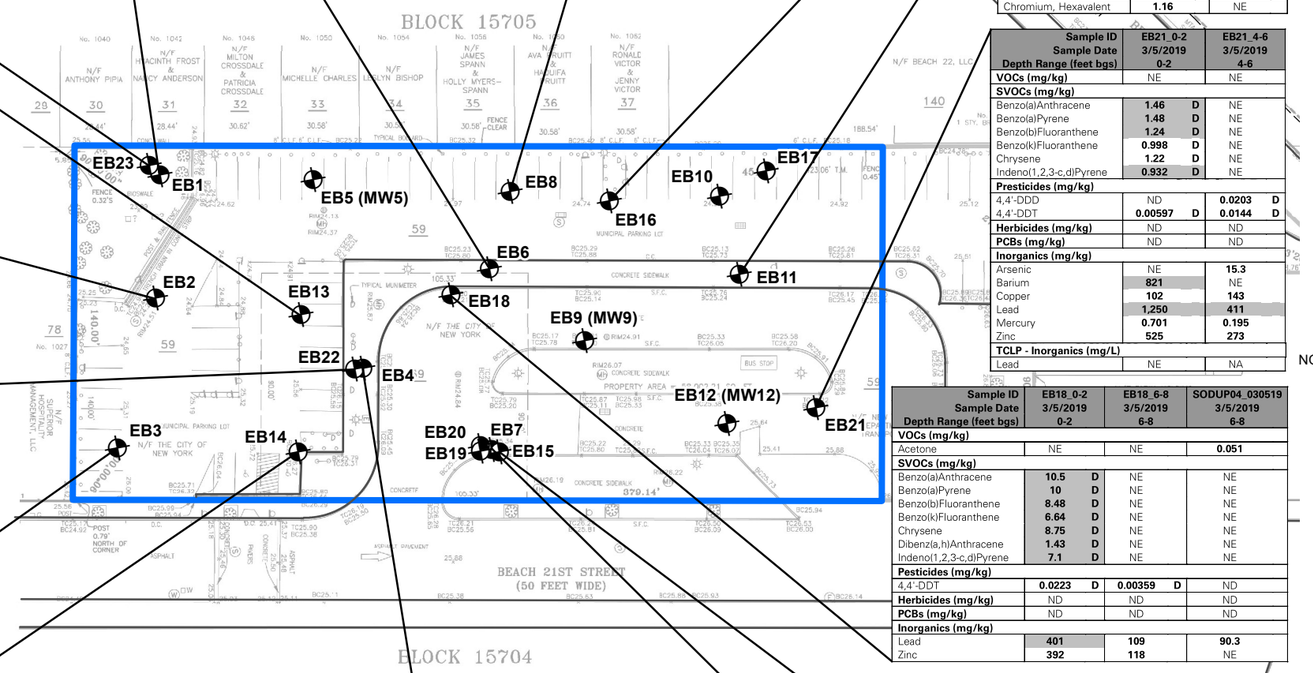
Sample ID Sample Date Depth Range (feet bgs)	EB03_1.5-3.5 12/17/2018 1.5-3.5	EB03_12-14 12/17/2018 12-14
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	**2.3**	ND
Benzo(a)Pyrene	**2.1**	ND
Benzo(b)Fluoranthene	**2.9** D	ND
Chrysene	**1.9**	ND
Dibenz(a,h)Anthracene	**0.34** J	ND
Indeno(1,2,3-c,d)Pyrene	**1.1**	ND
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	NE
Inorganics (mg/kg)		
Lead	**137**	NE
Zinc	**113**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB14_0-2 3/13/2019 0-2	EB14_6-8 3/13/2019 6-8
VOCs (mg/kg)	ND	NE
SVOCs (mg/kg)	NE	NE
Pesticides (mg/kg)	ND	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**141**	**864**
Zinc	NE	**237**

Sample ID Sample Date Depth Range (feet bgs)	EB04_0-2 12/11/2018 0-2	EB04_14-16 12/11/2018 14-16
VOCs (mg/kg)	NE	ND
SVOCs (mg/kg)		
Benzo(a)Anthracene	**1.1**	ND
Benzo(b)Fluoranthene	**1.4**	ND
Chrysene	**1.1**	ND
Indeno(1,2,3-c,d)Pyrene	**0.71**	ND
Pesticides (mg/kg)		
4,4'-DDE	**0.0076**	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**385** N	NE
Zinc	**310**	NE

Sample ID Sample Date Depth Range (feet bgs)	EB07_1-2 12/11/2018 1-2	EB07_11-12 12/11/2018 11-12
VOCs (mg/kg)	NE	NE
SVOCs (mg/kg)		
Benzo(a)Anthracene	**1.4**	ND
Benzo(a)Pyrene	**1.2**	ND
Benzo(b)Fluoranthene	**1.7**	ND
Chrysene	**1.3**	ND
Indeno(1,2,3-c,d)Pyrene	**0.66** J	ND
Pesticides (mg/kg)	NE	ND
Herbicides (mg/kg)	ND	ND
PCBs (mg/kg)	ND	ND
Inorganics (mg/kg)		
Lead	**89.3** N	NE
Zinc	**110**	NE

Analyte	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	Maximum Concentration of Contaminants for the Toxicity Characteristic
VOCs (mg/kg)			
Acetone	0.05	100	~
SVOCs (mg/kg)			
Benzo(a)Anthracene	1	1	~
Benzo(a)Pyrene	1	1	~
Benzo(b)Fluoranthene	1	1	~
Benzo(k)Fluoranthene	0.8	3.9	~
Chrysene	1	3.9	~
Dibenz(a,h)Anthracene	0.33	0.33	~
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	~
Pesticides (mg/kg)			
4,4'-DDD	0.0033	13	~
4,4'-DDE	0.0033	8.9	~
4,4'-DDT	0.0033	7.9	~
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	~
Inorganics (mg/kg)			
Arsenic	13	16	~
Barium	350	400	~
Chromium, Hexavalent	1	110	~
Copper	50	270	~
Lead	63	400	~
Mercury	0.18	0.81	~
Nickel	30	310	~
Zinc	109	10,000	~
TCLP - Inorganics (mg/L)			
Lead	~	~	5



LEGEND:

- EB8 — ENVIRONMENTAL BORING LOCATION
- APPROXIMATE SITE BOUNDARY
- CURB LINE
- NYCTA ELEVATED TRACK

NOTES:

1. BOUNDARY AND TOPOGRAPHIC SURVEY OBTAINED FROM HAKS ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C., DATED 12 SEPTEMBER 2016.
2. SOIL SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 375 UNRESTRICTED USE AND RESTRICTED USE RESTRICTED - RESIDENTIAL SOIL CLEANUP OBJECTIVES (SCO) AND 40 CFR 261 SUBPART C AND TABLE 1 OF 40 CFR 261.24 - ENVIRONMENTAL PROTECTION AGENCY (EPA) MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC.
3. ONLY CONCENTRATIONS EXCEEDING THE COMPARISON CRITERIA ARE SHOWN.
4. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE UNRESTRICTED USE SCOs ARE BOLDED.
5. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE RESTRICTED USE RESTRICTED-RESIDENTIAL SCOs ARE BOLDED AND SHADED.
6. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC ARE SHADED RED.
7. SAMPLE SODUP01_121218 IS A DUPLICATE SAMPLE OF EB10_12-14, SAMPLE SODUP02_121318 IS A DUPLICATE SAMPLE OF EB12_12-14, AND SAMPLE SODUP04_030519 IS A DUPLICATE SAMPLE OF EB18_6-8.
8. bgs = BELOW GRADE SURFACE
9. mg/kg = MILLIGRAMS PER KILOGRAM
10. mg/L = MILLIGRAMS PER LITER
11. NE = DETECTED AT CONCENTRATION(S) NOT EXCEEDING EITHER SCO
12. ND = NOT DETECTED
13. NA = NOT ANALYZED

QUALIFIERS:

D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE.
J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE REPORTING LIMIT (RL); THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
N = THE SPIKED SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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Project
10-37 BEACH 21ST STREET
BLOCK No. 15705, LOT No. 69 & P/O 59
FAR ROCKAWAY
QUEENS NEW YORK

Figure Title
SOIL BORING LOCATIONS AND RESULTS MAP

Project No. 170540601
Date 4/8/2019
Scale 1"=60'
Drawn By MG
Figure 5
Sheet 5 of 7

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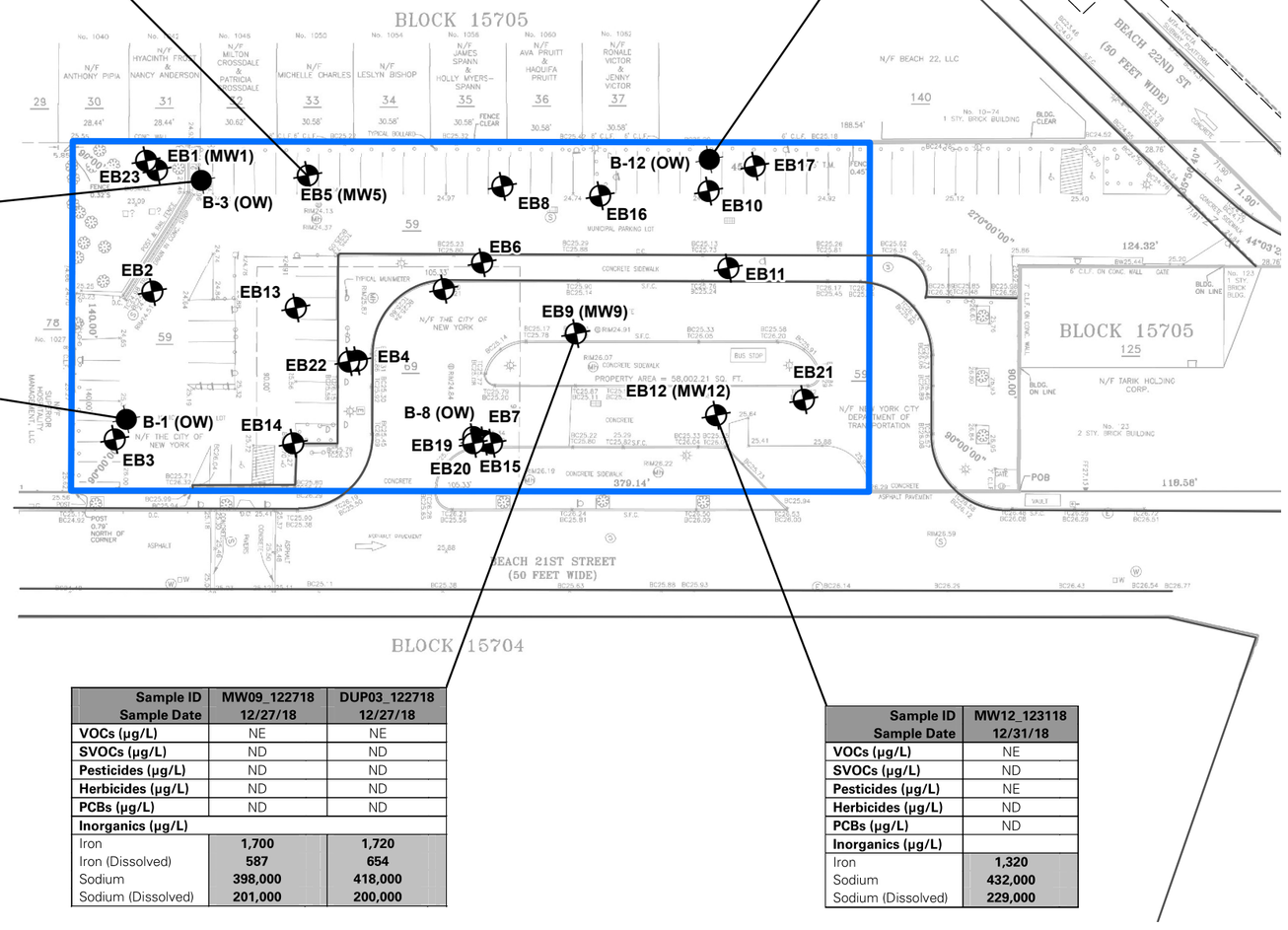
Sample ID Sample Date	MW05_122818 12/28/18
VOCs (µg/L)	ND
SVOCs (µg/L)	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**1,760**
Iron (Dissolved)	**783**
Sodium	**132,000**
Sodium (Dissolved)	**70,000**

Sample ID Sample Date	B12_123118 12/31/18
VOCs (µg/L)	NE
SVOCs (µg/L)	
Phenol	**5.5 J**
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**2,550**
Manganese	**584**
Sodium	**298,000**
Sodium (Dissolved)	**153,000**

Sample ID Sample Date	B3_122818 12/28/18
VOCs (µg/L)	ND
SVOCs (µg/L)	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**633**

Sample ID Sample Date	B1_123118 12/31/18
VOCs (µg/L)	NE
SVOCs (µg/L)	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**487**
Manganese	**321**
Sodium	**394,000**
Sodium (Dissolved)	**198,000**



Sample ID Sample Date	MW09_122718 12/27/18	DUP03_122718 12/27/18
VOCs (µg/L)	NE	NE
SVOCs (µg/L)	ND	ND
Pesticides (µg/L)	ND	ND
Herbicides (µg/L)	ND	ND
PCBs (µg/L)	ND	ND
Inorganics (µg/L)		
Iron	**1,700**	**1,720**
Iron (Dissolved)	**587**	**654**
Sodium	**398,000**	**418,000**
Sodium (Dissolved)	**201,000**	**200,000**

Sample ID Sample Date	MW12_123118 12/31/18
VOCs (µg/L)	NE
SVOCs (µg/L)	ND
Pesticides (µg/L)	NE
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Iron	**1,320**
Sodium	**432,000**
Sodium (Dissolved)	**229,000**

LEGEND:

- EB9 (MW9) — ENVIRONMENTAL BORING LOCATION
- B-12 (OW) — GEOTECHNICAL BORING LOCATION W/ OBSERVATION MONITORING WELL
- APPROXIMATE SITE BOUNDARY
- CURB LINE
- NYCTA ELEVATED TRACK

Analyte	CAS Number	NYSDEC SGVs
SVOCs (µg/L)		
Phenol	108-95-2	1
Inorganics (µg/L)		
Iron	7439-89-6	300
Manganese	7439-96-5	300
Sodium	7440-23-5	20000

NOTES:
1. BOUNDARY AND TOPOGRAPHIC SURVEY OBTAINED FROM HAKS ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C., DATED 12 SEPTEMBER 2016.
2. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES AND REGULATIONS (NYCRR) PART 703.5 AND THE NYSDEC TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER (NYSDEC SGVs).
3. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE NYSDEC SGVs ARE BOLDED AND SHADED.
4. SAMPLE DUP03_122718 IS A DUPLICATE SAMPLE OF MW09_122718.
5. SEE TABLE 5 FOR THE 20-COMPOUND LIST OF PERFLUORINATED CHEMICALS (PFC) ANALYTICAL RESULTS.
6. ~ = REGULATORY LIMIT FOR THIS ANALYTE DOES NOT EXIST
7. µg/L = MICROGRAMS PER LITER
8. NE = DETECTED AT CONCENTRATION(S) NOT EXCEEDING THE NYSDEC SGVs
9. ND = NOT DETECTED

QUALIFIERS:
J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL), BUT BELOW THE REPORTING LIMIT (RL); THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.

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Project
10-37 BEACH 21ST STREET
BLOCK No. 15705, LOT No. 69 & P/O 59
FAR ROCKAWAY
QUEENS NEW YORK

Drawing Title
GROUNDWATER RESULTS MAP

Project No. 170540601
Date 4/8/2019
Scale 1"=60'
Drawn By MG
Figure 6
Sheet 6 of 7

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Sample ID	SV-1_121718	
Sample Date	12/17/18	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	3.4	D
2-Hexanone	4.6	D
4-Ethyltoluene	2.9	D
Acetone	18	D
Benzene	0.53	D
Carbon Tetrachloride	0.35	D
Chloroform	4.9	D
Dichlorodifluoromethane	2.3	D
Ethylbenzene	1.4	D
Isopropanol	2.1	D
M,P-Xylene	5.9	D
Methyl Ethyl Ketone (2-Butanone)	13	D
n-Heptane	1.7	D
n-Hexane	0.54	D
o-Xylene (1,2-Dimethylbenzene)	2.5	D
Propylene	2.3	D
Tetrachloroethene (PCE)	1	D
Toluene	4.8	D
Trichlorofluoromethane	1.9	D

Sample ID	SV-2_121718	
Sample Date	12/17/18	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	2.3	D
2-Hexanone	3.7	D
4-Ethyltoluene	2.7	D
Acetone	18	D
Benzene	1.4	D
Carbon Disulfide	1.7	D
Chloroform	3.1	D
Dichlorodifluoromethane	2.1	D
Ethylbenzene	2.3	D
M,P-Xylene	10	D
Methyl Ethyl Ketone (2-Butanone)	10	D
Methylene Chloride	1	D
n-Heptane	1.9	D
n-Hexane	1.5	D
o-Xylene (1,2-Dimethylbenzene)	2.8	D
Propylene	8.6	D
Tetrachloroethene (PCE)	17	D
Toluene	8	D
Trichlorofluoromethane	1.9	D

Sample ID	SV-3_121718	
Sample Date	12/17/18	
VOCs (µg/m³)		
1,1,1-Trichloroethane	3.3	D
1,2,4-Trimethylbenzene	5.5	D
1,3-Butadiene	57	D
4-Ethyltoluene	25	D
Acetone	140	D
Benzene	21	D
Carbon Disulfide	3.9	D
Carbon Tetrachloride	0.27	D
Chloroform	87	D
Chloromethane	0.83	D
Cyclohexane	3.5	D
Dichlorodifluoromethane	1.8	D
Ethylbenzene	42	D
M,P-Xylene	170	D
Methyl Ethyl Ketone (2-Butanone)	49	D
Methylene Chloride	5.2	D
n-Heptane	23	D
n-Hexane	23	D
o-Xylene (1,2-Dimethylbenzene)	68	D
Propylene	370	D
Tetrachloroethene (PCE)	100	D
Toluene	35	D
Trichloroethene (TCE)	2.1	D
Trichlorofluoromethane	2.7	D

Sample ID	SV-4_121318	
Sample Date	12/13/18	
VOCs (µg/m³)		
1,1,1-Trichloroethane	3.7	D
1,2,4-Trimethylbenzene	1.6	D
1,3,5-Trimethylbenzene (Mesitylene)	0.66	D
2-Hexanone	9.8	D
4-Ethyltoluene	2	D
Acetone	38	D
Benzene	1.3	D
Carbon Disulfide	2.2	D
Chloroform	2.7	D
Cis-1,2-Dichloroethylene	0.53	D
Dichlorodifluoromethane	2.1	D
Ethylbenzene	2	D
Isopropanol	8.4	D
Methyl Ethyl Ketone (2-Butanone)	31	D
n-Heptane	3.2	D
n-Hexane	2.2	D
o-Xylene (1,2-Dimethylbenzene)	2.5	D
Propylene	5.5	D
Tetrachloroethene (PCE)	44	D
Toluene	9.2	D
Trichloroethene (TCE)	1.4	D
Trichlorofluoromethane	2.2	D

Sample ID	SV-5_121718	
Sample Date	12/17/18	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	2.1	D
1,3-Butadiene	1.9	D
2-Hexanone	4.3	D
4-Ethyltoluene	3.1	D
Acetone	50	D
Benzene	4.3	D
Carbon Disulfide	8.7	D
Chloroethane	0.47	D
Chloroform	20	D
Cis-1,2-Dichloroethylene	0.24	D
Cyclohexane	0.82	D
Dichlorodifluoromethane	1.9	D
Ethyl Acetate	1.1	D
Ethylbenzene	4.3	D
Isopropanol	1.1	D
M,P-Xylene	15	D
Methyl Ethyl Ketone (2-Butanone)	14	D
Methylene Chloride	1.4	D
n-Heptane	4.9	D
n-Hexane	5.3	D
o-Xylene (1,2-Dimethylbenzene)	5	D
Propylene	18	D
Styrene	0.76	D
Tetrachloroethene (PCE)	18	D
Toluene	14	D
Trichlorofluoromethane	2.3	D

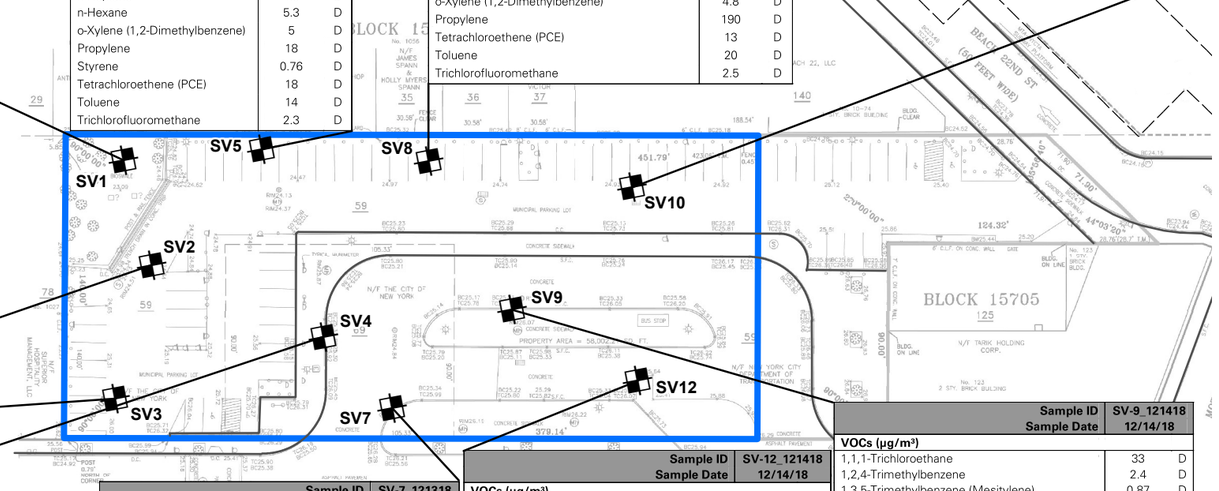
Sample ID	SV-7_121318	
Sample Date	12/13/18	
VOCs (µg/m³)		
1,1,1-Trichloroethane	6.2	D
1,2,4-Trimethylbenzene	1.6	D
1,3,5-Trimethylbenzene (Mesitylene)	0.65	D
2-Hexanone	3.2	D
4-Ethyltoluene	1.7	D
Acetone	99	D
Benzene	1.5	D
Carbon Disulfide	32	D
Chloroform	2.5	D
Cis-1,2-Dichloroethylene	0.57	D
Dichlorodifluoromethane	2.2	D
Ethylbenzene	1.5	D
Isopropanol	2.2	D
M,P-Xylene	5.7	D
Methyl Ethyl Ketone (2-Butanone)	17	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	5.7	D
Methylene Chloride	2	D
n-Hexane	1.2	D
o-Xylene (1,2-Dimethylbenzene)	1.8	D
Propylene	4.5	D
Tetrachloroethene (PCE)	**160**	**D**
Toluene	5.1	D
Trichloroethene (TCE)	1.8	D
Trichlorofluoromethane	4.1	D

Sample ID	SV-8_121718	
Sample Date	12/17/18	
VOCs (µg/m³)		
1,1,1-Trichloroethane	11	D
1,2,4-Trimethylbenzene	3.2	D
1,3-Butadiene	28	D
2-Hexanone	18	D
4-Ethyltoluene	3.1	D
Acetone	160	D
Benzene	12	D
Carbon Disulfide	2.5	D
Chloroform	3.2	D
Chloromethane	0.3	D
Cyclohexane	1.1	D
Dichlorodifluoromethane	2	D
Ethylbenzene	3.7	D
Isopropanol	3.7	D
M,P-Xylene	12	D
Methyl Ethyl Ketone (2-Butanone)	74	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	7.4	D
n-Heptane	10	D
n-Hexane	11	D
o-Xylene (1,2-Dimethylbenzene)	4.8	D
Propylene	190	D
Tetrachloroethene (PCE)	13	D
Toluene	20	D
Trichlorofluoromethane	2.5	D

Sample ID	SV-10_121318	
Sample Date	12/13/18	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	1.4	D
2-Hexanone	2.5	D
4-Ethyltoluene	1.5	D
Acetone	31	D
Benzene	1.6	D
Carbon Disulfide	1.1	D
Carbon Tetrachloride	0.25	D
Chloroform	1.2	D
Cyclohexane	1	D
Dichlorodifluoromethane	2.1	D
Ethylbenzene	2.4	D
M,P-Xylene	8.5	D
Methyl Ethyl Ketone (2-Butanone)	8.2	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.7	D
n-Heptane	2.6	D
n-Hexane	2.2	D
o-Xylene (1,2-Dimethylbenzene)	2.5	D
Propylene	7.8	D
Tetrachloroethene (PCE)	18	D
Toluene	4.9	D
Trichlorofluoromethane	1.2	D

Sample ID	SV-12_121418	
Sample Date	12/14/18	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	2.5	D
1,3,5-Trimethylbenzene (Mesitylene)	1.2	D
1,3-Butadiene	2.5	D
2-Hexanone	3	D
4-Ethyltoluene	4.3	D
Acetone	60	D
Acrylonitrile	0.74	D
Benzene	3.2	D
Carbon Disulfide	3.7	D
Chloroform	6.6	D
Dichlorodifluoromethane	2.2	D
Ethylbenzene	6.8	D
Isopropanol	1.8	D
M,P-Xylene	23	D
Methyl Ethyl Ketone (2-Butanone)	10	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	1.5	D
Methylene Chloride	1.9	D
n-Hexane	3.4	D
o-Xylene (1,2-Dimethylbenzene)	9.3	D
Propylene	26	D
Styrene	1.3	D
Tetrachloroethene (PCE)	76	D
Tetrahydrofuran	3	D
Toluene	19	D
Trichloroethene (TCE)	0.51	D
Trichlorofluoromethane	1.7	D

Sample ID	SV-9_121418	
Sample Date	12/14/18	
VOCs (µg/m³)		
1,1,1-Trichloroethane	33	D
1,2,4-Trimethylbenzene	2.4	D
1,3,5-Trimethylbenzene (Mesitylene)	0.87	D
1,3-Butadiene	1.8	D
2-Hexanone	6.5	D
4-Ethyltoluene	3	D
Acetone	100	D
Acrylonitrile	0.62	D
Benzene	2.3	D
Carbon Disulfide	13	D
Chloroform	1.4	D
Cis-1,2-Dichloroethylene	0.38	D
Cyclohexane	8.3	D
Dichlorodifluoromethane	2.3	D
Ethylbenzene	5.3	D
Isopropanol	8.5	D
M,P-Xylene	17	D
Methyl Ethyl Ketone (2-Butanone)	29	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	4.3	D
n-Heptane	11	D
n-Hexane	3.6	D
o-Xylene (1,2-Dimethylbenzene)	5.2	D
Propylene	18	D
Styrene	1.3	D
Tetrachloroethene (PCE)	38	D
Tetrahydrofuran	1.6	D
Toluene	1,200	D
Trichloroethene (TCE)	0.88	D
Trichlorofluoromethane	2.4	D



LEGEND:

- SV12 — SOIL VAPOR SAMPLE
- APPROXIMATE SITE BOUNDARY
- CURB LINE
- NYCTA ELEVATED TRACK

Analyte	CAS Number	NYSDOH Decision Matrix Minimum Concentration
Volatile Organic Compounds (µg/m³)		
1,1,1-Trichloroethane	71-55-6	100
Carbon Tetrachloride	56-23-5	6
Cis-1,2-Dichloroethylene	156-59-2	6
Methylene Chloride	75-09-2	100
Tetrachloroethene (PCE)	127-18-4	100
Trichloroethene (TCE)	79-01-6	6

NOTES:
1. BOUNDARY AND TOPOGRAPHIC SURVEY OBTAINED FROM HAKS ENGINEERS, ARCHITECTS & LAND SURVEYORS, P.C., DATED 12 SEPTEMBER 2016.
2. SOIL VAPOR ANALYTICAL RESULTS ARE COMPARED TO THE MINIMUM SOIL VAPOR CONCENTRATIONS RECOMMENDING MITIGATION AS SET FORTH IN THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) OCTOBER 2006 GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK DECISION MATRICES FOR SUB-SLAB VAPOR AND INDOOR AIR AND SUBSEQUENT UPDATES (2017).
3. ONLY DETECTED ANALYTES ARE SHOWN.
4. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE THE MINIMUM CONCENTRATIONS ARE BOLDED AND SHADED.
5. µg/m³ = MICROGRAMS PER CUBIC METER
6. SV = SOIL VAPOR
7. VOCs = VOLATILE ORGANIC COMPOUNDS

QUALIFIERS:
D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE.

70 0 70
SCALE IN FEET

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Project
10-37 BEACH 21ST STREET
BLOCK No. 15705, LOT No. 69 & P/O 59
FAR ROCKAWAY
QUEENS NEW YORK

Figure Title
SOIL VAPOR LOCATIONS AND RESULTS MAP

Project No. 170540601
Date 4/8/2019
Scale 1"=70'
Drawn By MG
Figure 7
Sheet 7 of 7

Path: \\langan.com\data\NYC\data6\170540601\Project Data\ArcGIS\MXD\Environmental_Figures\Final\Figure 7 - Soil Vapor Locations and Results Map.mxd Date: 4/8/2019 User: mgeorgalas Time: 2:02:52 PM

TABLES

Table 1
Sample Summary
Remedial Investigation
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Sample No.	Sample Date	Sample Name	Sample Location	Sample Depth (feet bgs) or Location	Sample Media	Analytical Laboratory Report	Analyses
SOIL							
1	12/17/2018	EB01_0-2	EB1	0 to 2	Historic Fill	J6465	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
2	12/17/2018	EB01_12-14		12 to 14	Native Material		
3	12/14/2018	EB02_1.5-3.5	EB2	1.5 to 3.5	Historic Fill	J6445	
4	12/14/2018	EB02_6-8		6 to 8	Bottom of the Historic Fill		
5	12/14/2018	EB02_12-14		12 to 14	Native Material		
6	12/17/2018	EB03_1.5-3.5	EB3	1.5 to 3.5	Historic Fill	J6465	
7	12/17/2018	EB03_12-14		12 to 14	Native Material		
8	12/11/2018	EB04_0-2	EB4	0 to 2	Historic Fill	J6371	
9	12/11/2018	EB04_14-16		14 to 16	Native Material		
10	12/14/2018	EB05_1.5-3.5	EB5	1.5 to 3.5	Historic Fill	J6445	
11	12/14/2018	EB05_12-14		12 to 14	Native Material		
12	12/14/2018	EB06_1-3	EB6	1 to 3	Historic Fill		
13	12/14/2018	EB06_12-14		12 to 14	Native Material		
14	12/11/2018	EB07_1-2	EB7	1 to 2	Historic Fill	J6371	
15	12/11/2018	EB07_11-12		11 to 12	Native Material		
16	12/17/2018	EB08_1.5-3.5	EB8	1.5 to 3.5	Historic Fill	J6465	
17	12/17/2018	EB08_12-14		12 to 14	Native Material		
18	12/13/2018	EB09_1.5-2.5	EB9	1.5 to 2.5	Historic Fill	J6424	
19	12/13/2018	EB09_12-14		12 to 14	Native Material		
20	12/12/2018	EB10_1.5-2.5	EB10	1.5 to 2.5	Historic Fill	J6397	
21	12/12/2018	EB10_12-14		12 to 14	Native Material		
22	12/12/2018	EB11_0-2	EB11	0 to 2	Historic Fill		
23	12/12/2018	EB11_12-14		12 to 14	Native Material		
24	12/13/2018	EB12_1.5-2.5	EB12	1.5 to 2.5	Historic Fill	J6424	
25	12/13/2018	EB12_12-14		12 to 14	Native Material		
26	3/13/2019	EB13_0-2	EB13	0 to 2	Historic Fill	19C0165	
27	3/13/2019	EB13_6-8		6 to 8			
28	3/13/2019	EB14_0-2	EB14	0 to 2			
29	3/13/2019	EB14_6-8		6 to 8			
30	3/5/2019	EB15_0-2	EB15	0 to 2		19C0494	
31	3/5/2019	EB15_8-10		8 to 10			
32	3/13/2019	EB16_0-2	EB16	0 to 2		19C0165	
33	3/13/2019	EB16_4-6		4 to 6			
34	3/13/2019	EB17_0-2	EB17	0 to 2			
35	3/13/2019	EB17_3-5		3 to 5			
36	3/5/2019	EB18_0-2	EB18	0 to 2		19C0494	
37	3/5/2019	EB18_6-8		6 to 8			
38	3/5/2019	EB19_6-8	EB19	6 to 8		Held	Not Analyzed
39	3/5/2019	EB20_6-8	EB20	6 to 8			
40	3/5/2019	EB21_0-2	EB21	0 to 2		19C0494	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides, TCLP Lead
41	3/5/2019	EB21_4-6		4 to 6			Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
42	3/5/2019	EB22_0-2	EB22	0 to 2			Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides, TCLP Lead
43	3/5/2019	EB22_5-7		5 to 7			
44	3/13/2019	EB23_0-2	EB23	0 to 2		19C0165	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
SOIL VAPOR							
1	12/17/2018	SV-1	SV1	10	Soil Vapor	18L1165	VOCs via USEPA Method TO-15
2	12/17/2018	SV-2	SV2	10			
3	12/17/2018	SV-3	SV3	10			
4	12/13/2018	SV-4	SV4	10		18L0614	
5	12/17/2018	SV-5	SV5	10		18L1165	
6	12/13/2018	SV-7	SV7	10		18L0614	
7	12/17/2018	SV-8	SV8	10		18L1165	
8	12/14/2018	SV-9	SV9	10		18L0798	
9	12/13/2018	SV-10	SV10	10		18L0614	
10	12/14/2018	SV-12	SV12	10		18L0798	
GROUNDWATER							
1	12/31/2018	B1_123118	B-1 (OW)	20 to 30	Groundwater	9959911	PFOA and PFC
2						K1029	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
3	12/28/2018	B3_122818	B-3 (OW)	20 to 30		9957979	PFOA and PFC
4						J6598	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
5	12/31/2018	B12_123118	B-12 (OW)	20 to 30		9959910	PFOA and PFC
6						K1029	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
7	12/28/2018	MW05_122818	MW5	15 to 30		9957978	PFOA and PFC
8						J6598	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
9	12/27/2018	MW09_122718	MW9	15 to 30		9957314	PFOA and PFC
10						J6591	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
11	12/31/2018	MW12_123118	MW12	12 to 27		9959912	PFOA and PFC
12						K1029	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
QA/QC							
1	12/12/2018	SODUP01_121218	EB10_12-14	12 to 14	Duplicate	J6397	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
2	12/13/2018	SODUP02_121318	EB12_12-14	12 to 14		J6424	
3	12/27/2018	DUP03_122718	MW9	15 to 30		9957315	PFOA and PFC
4						J6591	Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
5	3/5/2019	SODUP04_030519	EB18_6-8	6 to 8		19C0494	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
6	12/13/2018	TB01_121318	N/A	N/A	Trip Blank	J6424	Part 375/ TCL VOCs
7	12/14/2018	TB02_121418	N/A	N/A		J6445	
8	12/17/2018	TB03_121718	N/A	N/A		J6465	
9	12/27/2018	TB04_122718	N/A	N/A		J6591	
10	12/28/2018	TB05_122818	N/A	N/A		J6598	
11	12/31/2018	TB06_123118	N/A	N/A		K1029	
12	3/5/2019	TB07_030519	N/A	N/A		19C0494	
13	3/13/2019	TB08_031319	N/A	N/A		19C0165	
14	12/11/2018	FB01_121118	N/A	N/A	Field Blank	J6371	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
15	12/17/2018	SOFB02_121718	N/A	N/A		J6465	
16	12/27/2018	FB03_122718	N/A	N/A		J6591	PFOA and PFC
17	12/27/2018		N/A	N/A			Part 375 VOCs/SVOCs, Pesticides/PCBs, TAL Metals(Dissolved and Total), Hexavalent Chromium, Cyanide, Herbicides, 1,4-dioxane (PPT detection limit)
18	3/5/2019	SOFB04_030519	N/A	N/A		19C0494	Part 375 VOCs/SVOCs, TAL Metals, Hexavalent Chromium, Cyanide, PCBs, Pesticides, Herbicides
19	3/5/2019	EB22_5-7	EB22_5-7	5 to 7	MS/MSD		

Notes:

1. Part 375 = Title 6 of the official compilation of New York Codes, Rules and Regulations (NYCRR) Part 375
2. VOCs = Volatile Organic Compounds
3. SVOCs: Semivolatile Organic Compounds
4. PCBs = Polychlorinated Biphenyls
5. PFOA = Perfluorooctonoic Acid
6. PFC = Perfluorinated Chemical
7. PPT = part per trillion
8. TAL = Target Analyte List
9. TCL = Target Compound List
10. TCLP = Toxicity Characteristic Leaching Procedure
11. N/A = Not applicable
12. bgs = below grade surface
13. QA/QC = Quality Assurance/Quality Control
14. Dissolved metals were field filtered

Table 2
Well Construction and Groundwater Elevation Summary
Remedial Investigation Report
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No. 170540601

Date Gauged	Well Location	Well Diameter (inches)	Screened Interval (feet bTOC)	Approximate Elevation of TOC (NAVD88)	Depth to Groundwater (feet bTOC)	Groundwater Elevation (NAVD88)	Total Well Depth (ft bTOC)	Bottom of Well Elevation (NAVD88)
12/31/2018	B-1 (OW)	2	10 to 30	24.73	18.43	6.30	30.00	-5.27
12/31/2018	B-3 (OW)	2	10 to 30	24.36	18.12	6.24	30.00	-5.64
12/31/2018	MW5	2	15 to 30	24.44	18.36	6.08	30.00	-5.56
12/31/2018	B-12 (OW)	2	10 to 30	24.63	18.70	5.93	30.00	-5.37
12/31/2018	MW9	2	15 to 30	24.97	18.90	6.07	30.00	-5.03
12/31/2018	MW12	2	12 to 27	25.40	19.37	6.03	27.00	-1.60

Notes:
1. NAVD88 - North American Vertical Datum of 1988
2. bTOC = below top of casing
3. Depth to groundwater was measured in feet bTOC.

Table 3
Soil Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location Sample ID Laboratory ID Sample Date Depth Range (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	EPA Maximum Concentration of Contaminants for the Toxicity Characteristic	EB01 EB01_0-2 J6465-02 12/17/2018 0-2	EB01 EB01_12-14 J6465-01 12/17/2018 12-14	EB02 EB02_1.5-3.5 J6445-03 12/14/2018 1.5-3.5	EB02 EB02_6-8 J6445-04 12/14/2018 6-8	EB02 EB02_12-14 J6445-05 12/14/2018 12-14	EB03 EB03_1.5-3.5 J6465-04 12/17/2018 1.5-3.5	EB03 EB03_12-14 J6465-03 12/17/2018 12-14	EB04 EB04_0-2 J6371-04 12/11/2018 0-2	EB04 EB04_14-16 J6371-05 12/11/2018 14-16	EB05 EB05_1.5-3.5 J6445-06 12/14/2018 1.5-3.5	EB05 EB05_12-14 J6445-07 12/14/2018 12-14	EB06 EB06_1-3 J6445-01 12/14/2018 1-3	EB06 EB06_12-14 J6445-02 12/14/2018 12-14	EB07 EB07_1-2 J6371-02 12/11/2018 1-2	EB07 EB07_11-12 J6371-03 12/11/2018 11-12
Volatile Organic Compounds (mg/kg)																			
1,2,4-Trimethylbenzene	3.6	52	~	0.0056 U	0.0052 U	0.0052 U	0.0049 U	0.0048 U	0.0017 J	0.007 U	0.0055 U	0.0055 U	0.0055 U	0.0054 U	0.0057 U	0.0056 U	0.006 U	0.0055 U
Acetone	0.05	100	~	0.0282 U	0.0085 J	**0.21**	0.0244 U	0.0221 J	0.0186 J	0.0373	0.0205 J	0.0273 U	0.0193 J	0.0149 J	0.0119 J	0.0304	0.0208 J	0.0277 U
Benzene	0.06	4.8	~	0.0056 U	0.0052 U	0.0052 U	0.0049 U	0.0048 U	0.0013 J	0.007 U	0.0055 U	0.0055 U	0.0055 U	0.0054 U	0.0057 U	0.0017 J	0.006 U	0.0055 U
Methylene Chloride	0.05	100	~	0.0056 U	0.0029 JB	0.005 J	0.0049 U	0.0103	0.0113 B	0.0178 B	0.0055 U	0.0055 U	0.0055 U	0.0136	0.0057 U	0.0056 U	0.006 U	0.0049 J
Toluene	0.7	100	~	0.0056 U	0.0066	0.0073	0.0049 U	0.0058	0.0123	0.0066 J	0.0013 J	0.0055 U	0.0055 U	0.0054 U	0.0057 U	0.0158	0.005 J	0.0055 U
Total Xylenes	0.26	100	~	0.0169 U	0.0155 U	0.0157 U	0.0147 U	0.0145 U	0.015 U	0.0211 U	0.0165 U	0.0164 U	0.0166 U	0.0162 U	0.017 U	0.0169 U	0.0181 U	0.0166 U
Semivolatile Organic Compounds (mg/kg)																			
2,4-Dimethylphenol	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.24 J	0.34 U	0.0755 J	0.35 U	0.34 U	0.34 U	0.12 J	0.35 U	0.72 U	0.34 U
Acenaphthylene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.36 U	0.34 U	0.36 U	0.35 U	0.34 U	0.34 U	0.34 U	0.35 U	0.72 U	0.34 U
Anthracene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.75	0.34 U	0.24 J	0.35 U	0.11 J	0.34 U	0.23 J	0.16 J	0.28 J	0.34 U
Benzaldehyde	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Anthracene	1	1	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	**2.3**	0.34 U	**1.1**	0.35 U	0.55	0.34 U	0.66	0.4	**1.4**	0.34 U
Benzo(a)Pyrene	1	1	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	**2.1**	0.34 U	1	0.35 U	0.52	0.34 U	0.59	0.35	**1.2**	0.34 U
Benzo(b)Fluoranthene	1	1	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	**2.9** D	0.34 U	**1.4**	0.35 U	0.71	0.34 U	0.75	0.46	**1.7**	0.34 U
Benzo(g,h,i)Perylene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	1.3	0.34 U	0.93	0.35 U	0.34	0.34 U	0.45	0.2 J	0.99	0.34 U
Benzo(k)Fluoranthene	0.8	3.9	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.79	0.34 U	0.43	0.35 U	0.19 J	0.34 U	0.22 J	0.15 J	0.57 J	0.34 U
Biphenyl (Diphenyl)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl) Phthalate	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	3.9	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	**1.9**	0.34 U	**1.1**	0.35 U	0.52	0.34 U	0.65	0.36	**1.3**	0.34 U
Dibenz(a,h)Anthracene	0.33	0.33	~	*0.36* U	*0.34* U	*0.76* U	*0.34* U	*0.34* U	**0.34** J	*0.34* U	0.24 J	*0.35* U	0.0957 J	*0.34* U	0.12 J	*0.35* U	0.23 J	*0.34* U
Dibenzofuran	7	59	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.13 J	0.34 U	0.36 U	0.35 U	0.34 U	0.34 U	0.0858 J	0.35 U	0.72 U	0.34 U
Fluoranthene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	4.7 D	0.34 U	2.4	0.35 U	0.88	0.34 U	1.4	0.72	2.6	0.34 U
Fluorene	30	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.29 J	0.34 U	0.0842 J	0.35 U	0.34 U	0.34 U	0.13 J	0.0847 J	0.72 U	0.34 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	~	0.36 U	0.34 U	*0.76* U	0.34 U	0.34 U	**1.1**	0.34 U	**0.71**	0.35 U	0.39	0.34 U	0.44	0.21 J	**0.66** J	0.34 U
Naphthalene	12	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	0.36 U	0.34 U	0.36 U	0.35 U	0.34 U	0.34 U	0.17 J	0.35 U	0.72 U	0.34 U
Phenanthrene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	2.7	0.34 U	1.3	0.35 U	0.6	0.34 U	1.3	0.71	1.2	0.34 U
Phenol	0.33	100	~	0.19 J	0.21 J	0.26 J	0.23 J	0.24 J	0.22 J	0.17 J	0.18 J	0.33 J	0.14 J	0.18 J	0.11 J	0.21 J	0.21 J	0.29 J
Pyrene	100	100	~	0.36 U	0.34 U	0.76 U	0.34 U	0.34 U	3.4 D	0.34 U	1.9	0.35 U	0.92	0.34 U	1.2	0.61	2.2	0.34 U
Pesticides (mg/kg)																			
4,4'-DDD	0.0033	13	~	0.0018 U	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0006186 JP	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0006924 JP	0.0018 U
4,4'-DDE	0.0033	8.9	~	0.0018 U	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0003206 J	0.0018 U	**0.0076**	0.0018 U	0.0017 U	0.0017 U	0.0005002 J	0.0018 U	0.0022 JP	0.0018 U
4,4'-DDT	0.0033	7.9	~	0.0018 U	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0032	0.0018 U	0.0017 U	0.0017 U	0.0007072 J	0.0002587 J	0.0009037 JP	0.0018 U
Alpha Chlordane	0.094	4.2	~	0.0054 P	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0006341 JP	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	~	0.0018 U	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0019 U	0.0018 U
Chlordane	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	0.2	~	0.0048	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0019 U	0.0018 U
Gamma-Chlordane	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	2.1	~	0.0018 U	0.0018 U	0.002 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0017 U	0.0017 U	0.0018 U	0.0018 U	0.0019 U	0.0018 U
Herbicides (mg/kg)	~	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)																			
PCB-1254 (Aroclor 1254)	~	~	~	0.0183 U	0.0177 U	0.0197 U	0.0176 U	0.0175 U	0.0184 U	0.0177 U	0.0184 U	0.0178 U	0.0173 U	0.0175 U	0.0175 U	0.0178 U	0.0185 U	0.0176 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0113 J	0.0177 U	0.0062 J	0.0176 U	0.0175 U	0.0184 U	0.0165 J	0.0184 U	0.0178 U	0.0089 J	0.0085 J	0.0175 U	0.0178 U	0.0185 U	0.0176 U
Total PCBs	0.1	1	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics (mg/kg)																			
Aluminum	~	~	~	3,700	512	2,910 N	526 N	340 N	6,080	495	5,000	486	2,850 N	969 N	2,580 N	1,920 N	6,520	421
Antimony	~	~	~	2.28 UN	2.16 UN	2.44 U	2.12 U	2.16 U	0.559 JN	2.19 UN	2.24 UN	2.23 UN	2.1 U	2.14 U	2.12 U	2.15 U	2.24 UN	2.13 UN
Arsenic	13	16	~	1.52	0.903	4.31	0.88	0.889	1.61	0.641 J	2.65	0.784 J	7.54	0.698 J	0.808 J	1.87	2.79	0.63 J
Barium	350	400	~	19.1	1.41 J	58.6	1.96 J	0.705 J	59	1.36 J	126	1.82 J	26.7	2.16 J	41	15.2	87.3	1.06 J
Beryllium	7.2	72	~	0.253 J	0.053 J	0.174 J	0.255 U	0.259 U	0.216 J	0.263 U	0.249 J	0.268 U	0.267	0.257 U	0.183 J	0.109 J	0.364	0.255 U
Cadmium	2.5	4.3	~	0.274 U	0.259 U	0.292 U	0.255 U	0.259 U	0.268 U	0.263 U	0.722	0.268 U	0.252 U	0.257 U	0.166 J	0.084 J	0.341	0.255 U
Calcium	~	~	~	451	24 J	2,030	39.2 J	26.9 J	2,250	39.3 J	26,000	57.8 J	7,660	541	21,200	17,300	45,500	178
Chromium, Hexavalent	1	110	~	0.426 U	0.418 U	0.462 U	0.411 U	0.413 U	0.43	0.417 U	0.475	0.411 U	0.407 U	0.412 U	0.411 U	0.42 U	0.439 U	0.407 U
Chromium, Total	~	~	~	10.12	2.34	7.28	1.99	1.65	8.64	1.71	10.78 N	2.17 N	7.66	8.49	5.96	6.59	15.6 N	2.17 N
Cobalt	~	~	~	5.09	1.3 U	0.903 J	1.27 U	1.3 U	1.66	1.31 U	3.64 N	0.337 JN	1.43	0.98 J	3.28	1.45	5.53 N	1.28 UN
Copper	50	270	~	10.92	1.37	6.2	0.849 U	0.864 U	13.9	1.14	27.6	0.795 J	7.36	5.26	11.5	4.46	14	0.667 J
Cyanide	27	27	~	0.47	0.7	0.56	0.089 J	0.36	0.056 J	0.25 U	1.3	1.1	0.075 J	0.72	0.57	0.67	1.4	0.48
Iron	~	~	~	8,460	1,850	6,150	1,860	1,270	10,300	1,470	10,500	1,860	10,100	2,590	11,100	4,220	13,500	1,240
Lead	63	400	~	7.99	0.16 J	**119**	0.595	0.163 J	**137**	0.173 J	**385** N	1.03 N	58.3	0.542	**98.7**	19.6	**89.3** N	1.42 N
Magnesium	~	~	~	1,650	80.4 J	426	40.6 J	30.8 J	687	49.7 J	3,100	52.4 J	990	588	6,260	3,260	20,200	37 J
Manganese	1600	2000	~	182	16.3	38.4	6.32	7.1	54.5	14.2	177	11.8	46.5	25	176	69.2	221	10.9
Mercury	0.18	0.81	~	0.024	0.013 U	0.171	0.012 U	0.012 U	0.161	0.014 U	0.121	0.013 U	0.024	0.013 U	0.059	0.029	0.155	0.006 J
Nickel	30	310	~	**35**	0.88 J	2.54	0.493 J	1.73 U	5.01	0.773 J	7.63	0.64 J	3.38	2.79	5.65	2.83	12.3	0.604 J
Potassium	~	~	~	386	35.2 J	146	30.2 J	22.8 J	196	42.9 J	516	43.8 J	115	37.6 J	434	197	608	31 J
Selenium	3.9	180	~	0.913 U	0.864 U	0.975 U	0.849 U	0.864 U	0.892 U	0.876 U	1.54	0.346 J	0.84 U	0.856 U	0.849 U	0.861 U	1.91	0.395 J
Silver	2	180	~	0.457 U	0.432 U	0.487 U	0.424 U	0.432 U	0.446 U	0.438 U	0.152 J	0.446 U	0.42 U	0.428 U	0.425 U	0.431 U	0.439 J	0.426 U
Sodium	~	~	~	28.2 JN	5.32 JN	137	20.1 J	3.74 J	162 N	48.3 JN	148	3.28 J	115	90.1	111	65.9 J	296	63.8 J
Vanadium	~	~	~	10.54	2.26	8.9	2.3	1.86	13.8	2.16	14	2.73	11.2	3.71	12.4	6.41	17	1.56 J
Zinc	109	10000	~	23.9	2.05	21.3	8.02	1.88	**113**	2.19	**310**	8.32	59.7	3.4	**163**	43.9	**110**	6.44
TCLP - Inorganics (mg/L)																		
Lead	~	~	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (%)																		
Solids, Percent	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes provided on Page 4.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.
Concentrations above the Toxicity Characteristic concentration are shaded red.

Table 3
Soil Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location Sample ID Laboratory ID Sample Date Depth Range (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	EPA Maximum Concentration of Contaminants for the Toxicity Characteristic	EB08 EB08_1.5-3.5 J6465-06 12/17/2018 1.5-3.5	EB08 EB08_12-14 J6465-05 12/17/2018 12-14	EB09 EB09_1.5-2.5 J6424-03 12/13/2018 1.5-2.5	EB09 EB09_12-14 J6424-04 12/13/2018 12-14	EB10 EB10_1.5-2.5 J6397-01 12/12/2018 1.5-2.5	EB10 EB10_12-14 J6397-02 12/12/2018 12-14	EB10 SODUP01_121218 J6397-05 12/12/2018 12-14	EB11 EB11_0-2 J6397-03 12/12/2018 0-2	EB11 EB11_12-14 J6397-04 12/12/2018 12-14	EB12 EB12_1.5-2.5 J6424-01 12/13/2018 1.5-2.5	EB12 EB12_12-14 J6424-02 12/13/2018 12-14	EB12 SODUP02_121318 J6424-05 12/13/2018 12-14	EB13 EB13_0-2 19C0494-01 3/13/2019 0-2	EB13 EB13_6-8 19C0494-02 3/13/2019 6-8	EB14 EB14_0-2 19C0494-03 3/13/2019 0-2
Volatile Organic Compounds (mg/kg)																			
1,2,4-Trimethylbenzene	3.6	52	~	0.0057 U	0.0063 U	0.0055 U	0.0054 U	0.0053 U	0.0059 U	0.0059 U	0.0037 U	0.0053 U	0.0051 U	0.0059 U	0.0051 U	0.0025 U	0.002 U	0.0024 U
Acetone	0.05	100	~	0.0304	0.0091 J	0.0347	0.026 J	0.0308	0.0207 J	0.0127 J	0.0154 J	0.0252 J	0.0133 J	0.0136 J	0.0092 J	0.02	0.0041 U	0.0047 U
Benzene	0.06	4.8	~	0.0057 U	0.0014 J	0.0055 U	0.0054 U	0.0011 J	0.0059 U	0.0059 U	0.001 J	0.0053 U	0.0051 U	0.0059 U	0.0051 U	0.0025 U	0.002 U	0.0024 U
Methylene Chloride	0.05	100	~	0.0159 B	0.0024 JB	0.0186	0.0146	0.0053 U	0.0043 J	0.0029 J	0.0024 J	0.0159	0.0051 U	0.0059 U	0.0051 U	0.0049 U	0.0044 J	0.0047 U
Toluene	0.7	100	~	0.0041 J	0.0205	0.0055 U	0.0035 J	0.0118	0.0068	0.005 J	0.0122	0.0053 U	0.0043 J	0.0016 J	0.0011 J	0.0025 U	0.002 U	0.0024 U
Total Xylenes	0.26	100	~	0.017 U	0.019 U	0.0165 U	0.0162 U	0.0023 J	0.0177 U	0.0177 U	0.0111 U	0.016 U	0.0153 U	0.0178 U	0.0154 U	0.0074 U	0.0061 U	0.0071 U
Semivolatile Organic Compounds (mg/kg)																		
2,4-Dimethylphenol	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0442 U	0.143 D	0.0452 U
2-Methylnaphthalene	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0442 U	3.61 D	0.0452 U
Acenaphthene	20	100	~	1.8 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.15 D	4.6 D	0.0452 U
Acenaphthylene	100	100	~	1.8 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.0945 D	0.421 D	0.0452 U
Anthracene	100	100	~	0.38 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	1.51 D	10.3 D	0.0462 JD
Benzaldehyde	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0442 U	0.0451 U	0.0452 U
Benzo(a)Anthracene	1	1	~	0.98 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.57** D	**12.3** D	0.19 D
Benzo(a)Pyrene	1	1	~	**1.2** J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.59** D	**11.1** D	0.21 D
Benzo(b)Fluoranthene	1	1	~	**1.6** J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.54** D	**8.25** D	0.17 D
Benzo(g,h,i)Perylene	100	100	~	0.87 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	1.17 D	5.84 D	0.146 D
Benzo(k)Fluoranthene	0.8	3.9	~	0.44 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.41** D	**10.3** D	0.191 D
Biphenyl (Diphenyl)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0442 U	0.911 D	0.0452 U
Bis(2-Ethylhexyl) Phthalate	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.111 D	0.0451 U	0.0452 U
Carbazole	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.176 D	3.67 D	0.0452 U
Chrysene	1	3.9	~	0.95 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.61** D	**11.7** D	0.201 D
Dibenz(a,h)Anthracene	0.33	0.33	~	*1.8* U	*0.34* U	*0.35* U	*0.34* U	*0.34* U	*0.35* U	*0.34* U	*0.34* U	*0.35* U	*0.34* U	*0.34* U	*0.35* U	**0.43** D	**2.84** D	0.0452 U
Dibenzofuran	7	59	~	1.8 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.0754 JD	4.37 D	0.0452 U
Fluoranthene	100	100	~	2.2	0.34 U	0.0725 J	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	3.25 D	27.6 D	0.365 D
Fluorene	30	100	~	1.8 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.14 D	8.03 D	0.0452 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	~	**0.58** J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	**1.37** D	**7.37** D	0.164 D
Naphthalene	12	100	~	1.8 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.0642 JD	8.99 D	0.0452 U
Phenanthrene	100	100	~	1.3 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	1.6 D	32.1 D	0.151 D
Phenol	0.33	100	~	*1.8* U	0.24 J	0.23 J	0.31 J	0.21 J	0.25 J	0.27 J	0.15 J	0.3 J	0.27 J	0.25 J	0.28 J	0.0442 U	0.177 D	0.0452 U
Pyrene	100	100	~	1.6 J	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	0.34 U	0.34 U	0.35 U	2.68 D	21.8 D	0.316 D
Pesticides (mg/kg)																		
4,4'-DDD	0.0033	13	~	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
4,4'-DDE	0.0033	8.9	~	0.0005262 JP	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
4,4'-DDT	0.0033	7.9	~	0.0004266 JP	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0002097 J	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
Alpha Chlordane	0.094	4.2	~	0.0054 P	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	~	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
Chlordane	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0347 U	0.0358 U	0.0356 U
Dieldrin	0.005	0.2	~	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
Gamma-Chlordane	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00173 U	0.00179 U	0.00178 U
Heptachlor	0.042	2.1	~	0.0006222 JP	0.0017 U	0.0018 U	0.0018 U	0.0017 U	0.0018 U	0.0017 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.00173 U	0.00179 U	0.00178 U
Herbicides (mg/kg)	~	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)																		
PCB-1254 (Aroclor 1254)	~	~	~	0.0181 U	0.0174 U	0.0179 U	0.0175 U	0.0173 U	0.0182 U	0.0175 U	0.0176 U	0.0182 U	0.0175 U	0.0176 U	0.0179 U	0.0233	0.0181 U	0.018 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0181 U	0.0174 U	0.0334	0.0175 U	0.0173 U	0.0182 U	0.0175 U	0.0176 U	0.0182 U	0.0175 U	0.0178	0.0116 J	0.0175 U	0.0181 U	0.018 U
Total PCBs	0.1	1	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0233	0.0181 U	0.018 U
Inorganics (mg/kg)																		
Aluminum	~	~	~	4,520	399	2,180	581	2,260	1,070	567	1,950	523	2,370	550	590	4,580	6,130	4,550
Antimony	~	~	~	2.23 UN	2.13 UN	2.25 UN	2.15 UN	2.13 UN	2.25 UN	2.15 UN	2.17 UN	2.3 UN	2.12 UN	2.19 UN	2.22 UN	2.65 U	2.72 U	2.72 U
Arsenic	13	16	~	3.28	1.04	2.04	1.08	2.27	1.37	1.1	1.59	0.957	1.6	0.778 J	0.856 J	2.14	2.35	3.32
Barium	350	400	~	44.3	0.885 J	17.3	1.09 J	8.99	3.48 J	1.32 J	9.92	1.79 J	10.17	2.08 J	2.34 J	33.3	37.4	63.2
Beryllium	7.2	72	~	0.289	0.256 U	0.119 J	0.259 U	0.109 J	0.071 J	0.091 J	0.1 J	0.276 U	0.114 J	0.263 U	0.266 U	0.104	0.104	0.107
Cadmium	2.5	4.3	~	0.118 J	0.256 U	0.27 U	0.259 U	0.256 U	0.27 U	0.257 U	0.052 J	0.276 U	0.255 U	0.263 U	0.266 U	0.318 U	0.327 U	0.327 U
Calcium	~	~	~	28,100	17.8 J	5,850	22.7 J	188	50.5 J	65.1 J	21,400	109	1,550	25.6 J	33.8 J	3,580	1,780	7,820
Chromium, Hexavalent	1	110	~	0.426 U	0.412 U	0.42 U	0.407 U	0.406 U	0.428 U	0.405 U	**1.16**	0.599	0.081 J	0.409 U	0.422 U	0.531 U	0.545 U	0.545 U
Chromium, Total	~	~	~	8.62	1.87	5.14	2.06	8.12	3.2	5.41	7.14	3.14	5.03	1.34	2.14	6.79	10.4	7.35
Cobalt	~	~	~	4.22	1.28 U	0.793 J	1.29 U	1.96	0.577 J	0.336 J	1.88	1.38 U	2.09	1.32 U	1.33 U	2.36	3.23	2.36
Copper	50	270	~	10.51	1.15	1.18	0.862 U	5.83	2.64	2.94	4.51	1.9	2.57	0.427 J	0.552 J	9.72	9.63	12
Cyanide	27	27	~	0.22 J	0.68	0.17 J	0.33	0.16 J	0.17 J	0.39	0.2 J	0.14 J	0.1 J	0.35	0.23 J	0.531 U	0.545 U	0.545 U
Iron	~	~	~	10,900	1,660	5,470	2,270	4,220	2,450	3,390	2,890	1,750	3,850	1,270	1,550	6,520	9,620	7,580
Lead	63	400	~	43.4	0.248 J	22.7	0.517 U	1.94	0.869	0.515 U	3.04	0.522 J	5.19	0.286 J	1.51	**71.8**	**72.9**	**141**
Magnesium	~	~	~	5,670	40 J	3,020	34.3 J	269 N	107 N	67.4 JN	8,940 N	108 N	744	46.5 J	56.2 J	859	836	1,050
Manganese	1600	2000	~	183	10.66	26.1	16.2	74 N	34.4 N	17.9 N	83.1 N	8.86 N	53.2	11.2	13.8	88.9	105	92.3
Mercury	0.18	0.81	~	0.055	0.014 U	0.019	0.013 U	0.018	0.015 U	0.014 U	0.012 J	0.013 U	0.013 U	0.013 U	0.013 U	0.0504	**0.242**	0.102
Nickel	30	310	~	8.69	0.557 J	2.47	0.42 J	3.36	1.35 J	0.853 J	2.69	0.731 J	3.58	0.706 J	0.949 J	5.89	7.1	6.12
Potassium	~	~	~	510	32.6 J	156	35.1 J	107	91	29.4 J	183	60.9 J	164	35.8 J	49.7 J	233	332	256
Selenium	3.9	180	~	0.89 U	0.852 U	0.901 U	0.862 U	0.582 J	0.351 J	0.485 J	0.32 J	0.921 U	0.849 U	0.877 U	0.887 U	2.65 U	2.72 U	2.72 U
Silver	2	180	~	0.445 U	0.426 U	0.45 U	0.431 U	0.426 U	0.449 U	0.429 U	0.433 U	0.461 U	0.424 U	0.439 U	0.444 U	0.531 U	0.545 U	0.545 U
Sodium	~	~	~	226 N	11.5 JN	113	73.1 J	44.6 J	31 J	24.4 J	63.5 J	34.8 J	122	15.8 J	32 J	59.6	78.7	91.7
Vanadium	~	~	~	17	2.26	5.4	2.03	5.42	4.95	3.95	4.04	2.81	4.8	1.77	1.93	10.3	13.6	11.5
Zinc	109	10000	~	57.1	1.85	34.5	1.85	18.5	7.49	4.29	50.6	12.5	10.16	1.8	2.5	56.2	51.2	96.5
TCLP - Inorganics (mg/L)																		
Lead	~	~	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (%)																		
Solids, Percent	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.2	91.8	91.8

Notes provided on Page 4.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.
Concentrations above the Toxicity Characteristic concentration are shaded red.

Table 3
Soil Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location Sample ID Laboratory ID Sample Date Depth Range (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	EPA Maximum Concentration of Contaminants for the Toxicity Characteristic	EB14 EB14_6-8 19C0494-04 3/13/2019 6-8	EB15 EB15_0-2 19C0165-01 3/5/2019 0-2	EB15 EB15_8-10 19C0165-02 3/5/2019 8-10	EB16 EB16_0-2 19C0494-05 3/13/2019 0-2	EB16 EB16_4-6 19C0494-06 3/13/2019 4-6	EB17 EB17_0-2 19C0494-07 3/13/2019 0-2	EB17 EB17_3-5 19C0494-08 3/13/2019 3-5	EB18 EB18_0-2 19C0165-03 3/5/2019 0-2	EB18 EB18_6-8 19C0165-04 3/5/2019 6-8	EB18 SODUP04_030519 19C0165-11 3/5/2019 6-8	EB21 EB21_0-2 19C0165-07 3/5/2019 0-2	EB21 EB21_4-6 19C0165-08 3/5/2019 4-6	EB22 EB22_0-2 19C0165-09 3/5/2019 0-2	EB22 EB22_5-7 19C0165-10 3/5/2019 5-7	EB23 EB23_0-2 19C0494-09 3/13/2019 0-2
Volatile Organic Compounds (mg/kg)																			
1,2,4-Trimethylbenzene	3.6	52	~	0.002 U	0.0019 U	0.0032 U	0.0025 U	0.0036 U	0.0017 U	0.0029 U	0.0023 U	0.0022 U	0.0029 U	0.0025 U	0.0026 U	0.0023 U	0.002 U	0.002 U
Acetone	0.05	100	~	0.0043 J	0.0075	0.034	0.0049 U	0.012 J	0.0033 U	0.0057 U	0.019	0.008 J	**0.051**	0.019	0.016	0.02	0.038	0.0041 U
Benzene	0.06	4.8	~	0.002 U	0.0019 U	0.0032 U	0.0025 U	0.0036 U	0.0017 U	0.0029 U	0.0023 U	0.0022 U	0.0029 U	0.0025 U	0.0026 U	0.0023 U	0.002 U	0.002 U
Methylene Chloride	0.05	100	~	0.004 U	0.0038 U	0.012 J	0.0049 U	0.0071 U	0.0033 U	0.0057 U	0.0081 J	0.0044 U	0.013	0.0071 J	0.0091 J	0.0078 J	0.0084	0.0041 U
Toluene	0.7	100	~	0.002 U	0.0019 U	0.0032 U	0.0025 U	0.0036 U	0.0017 U	0.0029 U	0.0023 U	0.0022 U	0.0029 U	0.0025 U	0.0026 U	0.0023 U	0.002 U	0.002 U
Total Xylenes	0.26	100	~	0.006 U	0.0056 U	0.0097 U	0.0074 U	0.011 U	0.005 U	0.0086 U	0.007 U	0.0066 U	0.0088 U	0.0076 U	0.0079 U	0.007 U	0.0059 U	0.0061 U
Semivolatile Organic Compounds (mg/kg)																		
2,4-Dimethylphenol	~	~	~	0.0451 U	0.0468 U	0.0476 U	0.0434 U	0.32 U	1.05 U	0.0425 U	0.0458 U	0.0435 U	0.0429 U	0.0464 U	0.0564 U	0.0446 U	0.0456 U	0.0463 U
2-Methylnaphthalene	~	~	~	0.0451 U	0.0468 U	0.0476 U	0.0434 U	0.32 U	1.05 U	0.0425 U	0.255 D	0.0435 U	0.0429 U	0.0792 JD	0.0564 U	0.0446 U	0.0456 U	0.0463 U
Acenaphthene	20	100	~	0.0451 U	0.0468 U	0.0942 JD	0.0434 U	0.32 U	1.05 U	0.0425 U	0.882 D	0.0435 U	0.0429 U	0.343 D	0.0564 U	0.0446 U	0.059 JD	0.0463 U
Acenaphthylene	100	100	~	0.0451 U	0.134 D	0.0555 JD	0.0434 U	0.32 U	1.05 U	0.0425 U	0.328 D	0.0603 JD	0.0429 U	0.0464 U	0.0611 JD	0.13 D	0.491 D	0.0463 U
Anthracene	100	100	~	0.0451 U	0.116 D	0.325 D	0.0434 U	0.32 U	1.05 U	0.0425 U	4.37 D	0.0811 JD	0.0644 JD	0.626 D	0.0746 JD	0.14 D	0.675 D	0.0463 U
Benzaldehyde	~	~	~	0.0451 U	0.0468 U	0.0653 JD	0.0434 U	0.32 U	1.05 U	0.0425 U	0.0458 U	0.0435 U	0.0429 U	0.0464 U	0.0564 U	0.0446 U	0.0456 U	0.0463 U
Benzo(a)Anthracene	1	1	~	0.0451 U	0.382 D	**1.28** D	0.197 D	0.32 U	*1.05* U	0.0425 U	**10.5** D	0.46 D	0.384 D	**1.46** D	0.443 D	0.823 D	**3.58** D	0.0463 U
Benzo(a)Pyrene	1	1	~	0.0451 U	0.578 D	**1.13** D	0.19 D	0.32 U	*1.05* U	0.0425 U	**10** D	0.528 D	0.414 D	**1.48** D	0.514 D	0.902 D	**3.46** D	0.0463 U
Benzo(b)Fluoranthene	1	1	~	0.0451 U	0.45 D	**1.07** D	0.173 D	0.32 U	*1.05* U	0.0425 U	**8.48** D	0.446 D	0.354 D	**1.24** D	0.474 D	0.749 D	**2.64** D	0.0463 U
Benzo(g,h,i)Perylene	100	100	~	0.0451 U	0.522 D	0.632 D	0.136 D	0.32 U	1.05 U	0.0425 U	5.92 D	0.333 D	0.249 D	0.767 D	0.31 D	0.507 D	1.76 D	0.0463 U
Benzo(k)Fluoranthene	0.8	3.9	~	0.0451 U	0.351 D	**0.813** D	0.168 D	0.32 U	*1.05* U	0.0425 U	**6.64** D	0.394 D	0.316 D	**0.998** D	0.392 D	0.663 D	**2.2** D	0.0463 U
Biphenyl (Diphenyl)	~	~	~	0.0451 U	0.0468 U	0.0476 U	0.0434 U	0.32 U	1.05 U	0.0425 U	0.14 D	0.0435 U	0.0429 U	0.0464 U	0.0564 U	0.0446 U	0.0456 U	0.0463 U
Bis(2-Ethylhexyl) Phthalate	~	~	~	0.0561 JD	0.0468 U	0.0476 U	0.0589 JD	0.32 U	1.05 U	0.0425 U	0.0458 U	0.0435 U	0.0429 U	0.0464 U	1.46 D	0.0446 U	0.0456 U	0.595 D
Carbazole	~	~	~	0.0451 U	0.0468 U	0.119 D	0.0434 U	0.32 U	1.05 U	0.0425 U	0.706 D	0.0435 U	0.0429 U	0.24 D	0.0564 U	0.0633 JD	0.287 D	0.0463 U
Chrysene	1	3.9	~	0.0489 JD	0.356 D	**1.14** D	0.199 D	0.32 U	*1.05* U	0.0425 U	**8.75** D	0.425 D	0.342 D	**1.22** D	0.419 D	0.724 D	**2.44** D	0.0463 U
Dibenz(a,h)Anthracene	0.33	0.33	~	0.0451 U	0.143 D	0.223 D	0.0434 U	0.32 U	*1.05* U	0.0425 U	**1.43** D	0.112 D	0.0918 D	0.264 D	0.111 JD	0.189 D	**0.605** D	0.0463 U
Dibenzofuran	7	59	~	0.0451 U	0.0468 U	0.0509 JD	0.0434 U	0.32 U	1.05 U	0.0425 U	0.779 D	0.0435 U	0.0429 U	0.157 D	0.0564 U	0.0446 U	0.0495 JD	0.0463 U
Fluoranthene	100	100	~	0.0856 JD	0.547 D	2.39 D	0.359 D	0.32 U	1.05 U	0.0425 U	23.5 D	0.811 D	0.669 D	3.91 D	0.877 D	1.42 D	7.12 D	0.0463 U
Fluorene	30	100	~	0.0451 U	0.0468 U	0.106 D	0.0434 U	0.32 U	1.05 U	0.0425 U	1.34 D	0.0435 U	0.0429 U	0.289 D	0.0564 U	0.0446 U	0.13 D	0.0463 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	~	0.0451 U	**0.534** D	**0.767** D	0.159 D	0.32 U	*1.05* U	0.0425 U	**7.1** D	0.392 D	0.3 D	**0.932** D	0.386 D	**0.618** D	**2.26** D	0.0463 U
Naphthalene	12	100	~	0.0451 U	0.0468 U	0.0476 U	0.0434 U	0.32 U	1.05 U	0.0425 U	0.234 D	0.0435 U	0.0429 U	0.123 D	0.0564 U	0.0446 U	0.0456 U	0.0463 U
Phenanthrene	100	100	~	0.0626 JD	0.243 D	1.38 D	0.2 D	0.32 U	1.05 U	0.0425 U	17.2 D	0.299 D	0.27 D	2.25 D	0.358 D	0.464 D	2.43 DE	0.0463 U
Phenol	0.33	100	~	0.0451 U	0.0468 U	0.0476 U	0.0434 U	0.32 U	*1.05* U	0.0425 U	0.0458 U	0.0435 U	0.0429 U	0.0464 U	0.0564 U	0.0446 U	0.0456 U	0.0463 U
Pyrene	100	100	~	0.0791 JD	0.476 D	2.02 D	0.3 D	0.32 U	1.05 U	0.0425 U	19.4 D	0.668 D	0.596 D	2.24 D	0.69 D	1.27 D	5.87 D	0.0463 U
Pesticides (mg/kg)																		
4,4'-DDD	0.0033	13	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.00182 U	0.00171 U	0.00171 U	0.00184 U	**0.0203** D	0.00176 U	0.0018 U	0.00184 U
4,4'-DDE	0.0033	8.9	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.00182 U	0.00171 U	0.00171 U	0.00184 U	0.00193 U	0.00176 U	0.0018 U	0.00184 U
4,4'-DDT	0.0033	7.9	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	**0.0223** D	**0.00359** D	0.00171 U	**0.00597** D	**0.0144** D	0.00176 U	0.0018 U	0.00184 U
Alpha Chlordane	0.094	4.2	~	0.00178 U	0.00334 D	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.0122 D	0.00312 D	0.00171 U	0.0304 D	0.044 D	0.00176 U	0.0018 U	0.00184 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.36	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.00182 U	0.00171 U	0.00171 U	0.00184 U	0.00193 U	0.00176 U	0.0018 U	**0.175** D
Chlordane	~	~	~	0.0355 U	0.0371 U	0.0377 U	0.0344 U	0.0335 U	0.0333 U	0.0336 U	0.103 D	0.0489 D	0.0342 U	0.209 DP	0.273 DP	0.0352 U	0.036 U	0.0368 U
Dieldrin	0.005	0.2	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.00262 D	0.00171 U	0.00171 U	0.00184 U	0.00193 U	0.00176 U	0.0018 U	0.00184 U
Gamma-Chlordane	~	~	~	0.00178 U	0.00389 DP	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.01 D	0.0032 D	0.00171 U	0.022 D	0.0305 D	0.00176 U	0.0018 U	0.00184 U
Heptachlor	0.042	2.1	~	0.00178 U	0.00185 U	0.00189 U	0.00172 U	0.00167 U	0.00166 U	0.00168 U	0.00182 U	0.00171 U	0.00171 U	0.00184 U	0.00193 U	0.00176 U	0.0018 U	0.00184 U
Herbicides (mg/kg)	~	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)																		
PCB-1254 (Aroclor 1254)	~	~	~	0.0179 U	0.0187 U	0.0191 U	0.0174 U	0.0169 U	0.0168 U	0.017 U	0.0184 U	0.0173 U	0.0173 U	0.0186 U	0.0195 U	0.0178 U	0.0182 U	0.0186 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0179 U	0.0187 U	0.0191 U	0.0174 U	0.0169 U	0.0168 U	0.017 U	0.0184 U	0.0173 U	0.0173 U	0.0186 U	0.0195 U	0.0178 U	0.0182 U	0.0186 U
Total PCBs	0.1	1	~	0.0179 U	0.0187 U	0.0191 U	0.0174 U	0.0169 U	0.0168 U	0.017 U	0.0184 U	0.0173 U	0.0173 U	0.0186 U	0.0195 U	0.0178 U	0.0182 U	0.0186 U
Inorganics (mg/kg)																		
Aluminum	~	~	~	4,850	6,170	6,730	4,870	5,490	6,530	3,010	5,760	4,030	3,230	6,710	5,870	5,230	4,090	4,740
Antimony	~	~	~	2.73 U	2.83 U	2.88 U	2.63 U	2.56 U	2.56 U	2.57 U	2.77 U	2.63 U	2.61 U	2.81 U	2.94 U	2.69 U	2.74 U	2.8 U
Arsenic	13	16	~	1.85	3.52	4.88	2.92	2.13	1.53 U	1.54 U	5.72	3.58	2.39	8.7	**15.3**	3.83	4.61	2.1
Barium	350	400	~	60.9	55.1	**574**	21	18.9	11.7	6.41	164	49.7	44.6	**821**	288	197	**351**	19.8
Beryllium	7.2	72	~	0.07	0.057 U	0.058 U	0.097	0.051 U	0.051 U	0.051 U	0.055 U	0.053 U	0.052 U	0.056 U	0.059 U	0.054 U	0.055 U	0.178
Cadmium	2.5	4.3	~	0.385	0.339 U	0.682	0.316 U	0.307 U	0.307 U	0.308 U	0.862	1.71	0.313 U	0.593	0.714	0.485	0.631	0.336 U
Calcium	~	~	~	6,060	17,200	62,600	21,200	19,300	5,830	1,510	61,700	10,800	12,700	12,300	113,000	23,700	18,600	1,310
Chromium, Hexavalent	1	110	~	0.547 U	0.566 U	0.576 U	0.526 U	0.512 U	0.511 U	0.513 U	0.555 U	0.525 U	0.522 U	0.562 U	0.589 U	0.537 U	0.548 U	0.56 U
Chromium, Total	~	~	~	8.76	14	9.43	10.5	14.4	8.67	10.3	14.8	8.63	7.92	18.8	48.3	10.4	12.8	14.9
Cobalt	~	~	~	2.89	6.07	4.33	3.07	6.1	8.05	3.71	4.42	3.35	2.98	3.45	4.27	3.62	3.2	3.85
Copper	50	270	~	12.8	24.5	**201**	16.1	31.7	44.7	16.8	21.5	29.1	12.9	**102**	**143**	25.8	26.9	7.33
Cyanide	27	27	~	0.547 U	0.566 U	0.576 U	0.526 U	0.512 U	0.511 U	0.513 U	0.555 U	0.525 U	0.522 U	0.562 U	0.589 U	0.537 U	1.51	0.56 U
Iron	~	~	~	7,030	13,700	9,950	11,300	11,400	12,300	5,190	12,300	9,410	10,100	12,200	22,700	13,500	9,870	9,350
Lead	63	400	~	**864**	**94.5**	**611**	54.2	16.4	3.92	1.26	**401**	**109**	**90.3**	**1,250**	**411**	**3,570**	**2,420**	7.29
Magnesium	~	~	~	1,360	8,660	3,230	1,850	8,250	5,070	1,840	4,500	1,750	1,800	972	23,400	1,620	1,150	1,850
Manganese	1600	2000	~	136	265	238	98.9	127	147	64.4	220	137	151	109	204	113	134	104
Mercury	0.18	0.81	~	0.101	0.0968	0.0551	**0.226**	0.0307 U	0.0307 U	0.0308 U	0.0892	0.0552	0.0395	**0.701**	**0.195**	0.159	**0.367**	0.0336 U
Nickel	30	310	~	6.53	12.4	7.37	7.1	13.1	17	7.93	9.25	7.87	6.62	7.95	15.6	6.98	6.2	21.1
Potassium	~	~	~	222	781 B	699 B	268	442	380	118	838 B	732 B	460 B	288 B	666 B	354 B	211 B	518
Selenium	3.9	180	~	2.73 U	2.83 U	2.88 U	2.63 U	2.56 U	2.56 U	2.57 U	2.77 U	2.63 U	2.61 U	2.81 U	2.94 U	2.69 U	2.74 U	2.8 U
Silver	2	180	~	0.547 U	0.566 U	0.576 U	0.526 U	0.512 U	0.511 U	0.513 U	0.555 U	0.525 U	0.522 U	0.562 U	0.589 U	0.537 U	0.548 U	0.56 U
Sodium	~	~	~	76.5	588	1,030	307	787	792	334	492	208	202	1,020	760	160	82.3	56 U
Vanadium	~	~	~	11	18.4	15.7	11.3	29.4	29.6	8.03	18	16	10.3	17.1	18.5	17.2	10.4	18.5
Zinc	109	10000	~	**237**	78.5	**298**	49.7	33	15.2	4.4	**392**	**118**	94.5	**525**	**273**	**432**	**626**	21.9
TCLP - Inorganics (mg/L)																		
Lead	~	~	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.05	NA	7.27	7.07	NA
General Chemistry (%)																		
Solids, Percent	~	~	~	91.4	88.4	86.9	95	97.6	97.8	97.5	90.1	95.2	95.7	88.9	84.9	93	91.3	89.3

Notes provided on Page 4.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.
Concentrations above the Toxicity Characteristic concentration are shaded red.

Table 3
Soil Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Restricted-Residential Soil Cleanup Objectives (SCO).
2. Soil sample analytical results are compared to the 6 New York Codes, Rules and Regulations (NYCRR) Part 371.3 and 40 CFR 261 Subpart C and Table 1 of 40 CFR 261.24 - Environmental Protection Agency (EPA) Maximum Concentration of Contaminants for the Toxicity Characteristic.
3. Only detected analytes are shown in the table.
4. Analytes detected with concentrations above Unrestricted Use SCOs are bolded.
5. Analytes detected with concentrations above Restricted Use Restricted-Residential SCOs are shaded.
6. Analytes detected with concentrations above Maximum Concentration of Contaminants for the Toxicity Characteristic are shaded red.
7. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
8. Sample SODUP01_121218 is a duplicate sample of EB10_12-14, sample SODUP02_121318 is a duplicate sample of EB12_12-14, and sample SODUP04_030519 is a duplicate sample of EB18_6-8.
9. ~ = Regulatory limit for this analyte does not exist
10. bgs = below grade surface
11. mg/kg = milligrams per kilogram
12. mg/L = milligrams per liter
13. % = percent
14. NA = Not analyzed
15. ND = Not detected

Qualifiers:

D = The concentration reported is a result of a diluted sample.
E = The result is estimated and cannot be accurately reported due to levels encountered or interferences.
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
P = The relative percent difference (RPD) between the results for the two columns exceeds the method-specified criteria.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
B = The analyte was found in the associated analysis batch blank.
N = Indicates the spiked sample recovery is not within control limits.

Table 4
Groundwater Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location	NYSDEC	B-1(OW)		B-3 (OW)		B-12 (OW)		MW05		MW09		MW09		MW12	
Sample ID	SGVs	B1_123118		B3_122818		B12_123118		MW05_122818		MW09_122718		DUP03_122718		MW12_123118	
Laboratory ID		K1029-03		J6598-02		K1029-01		J6598-06		J6591-02		J6591-07		K1029-06	
Sample Date		12/31/2018		12/28/2018		12/31/2018		12/28/2018		12/27/2018		12/27/2018		12/31/2018	
Volatile Organic Compounds (µg/L)															
Acetone	50	5	U	5	U	5	U	5	U	2.6	J	2.7	J	5	U
Chloroform	7	4.8		1	U	1.1		1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	5	0.82	J	1	U	1	U	1	U	1	U	1	U	0.33	J
Semivolatile Organic Compounds (µg/L)															
Phenol	1	*10*	U	*10*	U	**5.5**	J	*10*	U	*10.3*	U	*10.2*	U	*10*	U
Pesticides (µg/L)															
Alpha Chlordane	~	0.05	U	0.05	U	0.05	U	0.05	U	0.051	U	0.0505	U	0.0073	J
Herbicides (µg/L)		ND		ND		ND		ND		ND		ND		ND	
Polychlorinated Biphenyls (µg/L)		ND		ND		ND		ND		ND		ND		ND	
Inorganics (µg/L)															
Aluminum	~	97.6		383		856		87.9		7.85	J	50	U	834	
Aluminum (Dissolved)	~	50	U	7.76	J	50	U	50	U	50	U	50	U	15.1	J
Barium	1000	47.8	J	8.95	J	60.3		65.4		64.3		67.3		14	J
Barium (Dissolved)	1000	24.6	J	4.75	J	30.3	J	34.1	J	32.3	J	32	J	7.11	J
Calcium	~	159,000		9,190		66,500		60,700		69,900		73,500		5,320	
Calcium (Dissolved)	~	80,100		4,990		35,400		32,000		35,800		36,000		2,860	
Chromium, Total	50	14.4		2.68	J	21.9		9.15		1.23	J	5	U	5.97	
Cobalt	~	15	U	15	U	15	U	4.65	J	15	U	15	U	15	U
Copper	200	2.81	J	10	U	5.9	J	10	U	2.1	J	2.93	J	5.67	J
Copper (Dissolved)	200	10	U	10	U	10	U	10	U	10	U	10	U	2.27	J
Cyanide	200	3.5	J	5	U	8.2		5	U	6.5		7.4		15	
Iron	300	**487**		**633**		**2,550**		**1,760**		**1,700**		**1,720**		**1,320**	
Iron (Dissolved)	300	82.4		50	U	257		**783**		**587**		**654**		17	J
Lead	25	2.69	J	6	U	3.48	J	6	U	2.56	J	2.02	J	6	U
Lead (Dissolved)	25	1.6	J	6	U	6	U	6	U	6	U	6	U	6	U
Magnesium	35000	25,900		1,080		10,100		8,570		7,410		7,730		403	J
Magnesium (Dissolved)	35000	13,000		530	J	5,090		4,560		3,800		3,750		200	J
Manganese	300	**321**		129		**584**		163		266		298		95	
Manganese (Dissolved)	300	151		67.5		276		82.1		127		129		34.9	
Nickel	100	6.96	J	20	U	10.14	J	8.55	J	6.4	J	6.63	J	20	U
Potassium	~	14,300		1,060		5,310		4,210		9,720		10,400		2,180	
Potassium (Dissolved)	~	6,790		535	J	2,450		2,180		4,860		4,750		1,050	
Selenium	10	9.29	J	10	U	5.82	J	10	U	10	U	10	U	10	U
Selenium (Dissolved)	10	4.81	J	10	U	10	U	10	U	10	U	10	U	10	U
Sodium	20000	**394,000**		18,400		**298,000**		**132,000**		**398,000**		**418,000**		**432,000**	
Sodium (Dissolved)	20000	**198,000**		10,000		**153,000**		**70,000**		**201,000**		**200,000**		**229,000**	
Vanadium	~	20	U	20	U	6.74	J	20	U	20	U	20	U	20	U
Zinc	2000	44.5		10.36	J	29.1		28.2		8.11	J	8.06	J	11.7	J
Zinc (Dissolved)	2000	12.8	J	20	U	20	U	14.7	J	20	U	20	U	20	U

Notes provided on 2.

Table 4
Groundwater Sample Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Notes:
1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC SGVs are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample DUP03_122718 is a duplicate sample of MW09_122718.
6. ~ = Regulatory limit for this analyte does not exist
7. µg/L = micrograms per liter
8. ND = Not detected

Qualifiers:
J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
Q = Indicates the LCS did not meet the conrol limits requirements

Notes provided on 2.

Table 5
Groundwater Sample Analytical Results - PFCs (20-compound list)
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location	B1		B3		B12		MW05		MW09		MW09		MW12	
Sample ID	B1_123118		B3_122818		B12_123118		MW05_122818		DUP03_122718		MW09_122718		MW12_123118	
Laboratory ID	9959911		9957979		9959910		9957978		9957315		9957314		9959912	
Sample Date	12/31/2018		12/28/2018		12/31/2018		12/28/2018		12/27/2018		12/27/2018		12/31/2018	
Per and Polyfluoroalkyl Substances (µg/L)														
Perfluorobutanesulfonic Acid (PFBS)	0.0088		0.0016		0.0097		0.0085		0.01		0.0098		0.004	
Perfluorobutanoic acid (PFBA)	0.014		0.0018	U	0.012		0.013		0.0098		0.0097		0.0038	J
Perfluorodecanesulfonic acid (PFDS)	0.00054	U	0.00054	U	0.011		0.001	J	0.00057	J	0.00071	J	0.00099	J
Perfluorodecanoic acid (PFDA)	0.00081	U	0.00082	U	0.0028		0.0015	J	0.0013	J	0.0011	J	0.0013	J
Perfluorododecanoic Acid (PFDoA)	0.00045	U	0.00045	U	0.0011	J	0.00055	J	0.00043	U	0.00044	U	0.00045	J
Perfluoroheptanesulfonic acid (PFHpS)	0.0019		0.00036	U	0.00037	U	0.00036	U	0.00055	J	0.0005	J	0.00056	J
Perfluoroheptanoic acid (PFHpA)	0.01		0.00091		0.022		0.0035		0.0084		0.0078		0.0072	
Perfluorohexanesulfonic Acid (PFHxS)	0.0044		0.00036	U	0.0028		0.0016	J	0.003		0.0026		0.0015	J
Perfluorohexanoic Acid (PFHxA)	0.013		0.0012	J	0.019		0.0067		0.028		0.029		0.0088	
Perfluorononanoic Acid (PFNA)	0.0032		0.00057	J	0.0033		0.0022		0.0036		0.0033		0.0041	
Perfluorooctanesulfonic acid (PFOS)	0.049		0.0034		0.013		0.014		0.028		0.03		0.025	
Perfluorooctanoic Acid (PFOA)	0.047		0.001		0.03		0.007		0.029		0.026		0.037	
Perfluoropentanoic Acid (PFPeA)	0.016		0.0018	U	0.025		0.013		0.029		0.029		0.0078	
Perfluoroundecanoic Acid (PFUnA)	0.00036	U	0.00036	U	0.0022		0.00071	J	0.00035	U	0.00036	J	0.00036	U
PFCs (total)	0.16775		0.00868		0.15501		0.07471		0.15165		0.15092		0.10295	

Notes provided on 2.

Table 5
Groundwater Sample Analytical Results - PFCs (20-compound list)
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Notes:
1. Only detected analytes are shown in the table.
2. Sample DUP03_122718 is a duplicate sample of MW09.
3. ~ = Regulatory limit for this analyte does not exist
4. µg/L = micrograms per liter
5. PFC = Per and Polyfluorinated

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

Notes provided on 2.

Table 6
Soil Vapor Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Location	SV-1		SV-2		SV-3		SV-4		SV-5		SV-7		SV-8		SV-9		SV-10		SV-12	
Sample ID	SV-1_121718		SV-2_121718		SV-3_121718		SV-4_121318		SV-5_121718		SV-7_121318		SV-8_121718		SV-9_121418		SV-10_121318		SV-12_121418	
Laboratory ID	18L1165-01		18L1165-02		18L1165-03RE1		18L0614-02		18L1165-04		18L0614-03		18L1165-05RE1		18L0798-01RE1		18L0614-01		18L0798-02	
Sample Date	12/17/2018		12/17/2018		12/17/2018		12/13/2018		12/17/2018		12/13/2018		12/17/2018		12/14/2018		12/13/2018		12/14/2018	
Sample Type	SV		SV		SV		SV		SV		SV		SV		SV		SV		SV	
Volatile Organic Compounds (µg/m³)																				
1,1,1-Trichloroethane	0.75	U	0.79	U	3.3	D	3.7	D	0.81	U	6.2	D	11	D	33	D	0.71	U	0.74	U
1,2,4-Trimethylbenzene	3.4	D	2.3	D	5.5	D	1.6	D	2.1	D	1.6	D	3.2	D	2.4	D	1.4	D	2.5	D
1,3,5-Trimethylbenzene (Mesitylene)	0.68	U	0.71	U	0.71	U	0.66	D	0.73	U	0.65	D	0.7	U	0.87	D	0.64	U	1.2	D
1,3-Butadiene	0.92	U	0.96	U	57	D	0.89	U	1.9	D	0.87	U	28	D	1.8	D	0.87	U	2.5	D
2-Hexanone	4.6	D	3.7	D	1.2	U	9.8	D	4.3	D	3.2	D	18	D	6.5	D	2.5	D	3	D
4-Ethyltoluene	2.9	D	2.7	D	25	D	2	D	3.1	D	1.7	D	3.1	D	3	D	1.5	D	4.3	D
Acetone	18	D	18	D	140	D	38	D	50	D	99	D	160	D	100	D	31	D	60	D
Acrylonitrile	0.3	U	0.31	U	0.31	U	0.29	U	0.32	U	0.29	U	0.31	U	0.62	D	0.28	U	0.74	D
Benzene	0.53	D	1.4	D	21	D	1.3	D	4.3	D	1.5	D	12	D	2.3	D	1.6	D	3.2	D
Carbon Disulfide	0.43	U	1.7	D	3.9	D	2.2	D	8.7	D	32	D	2.5	D	13	D	1.1	D	3.7	D
Carbon Tetrachloride	0.35	D	0.23	U	0.27	D	0.21	U	0.23	U	0.21	U	0.23	U	0.21	U	0.25	D	0.21	U
Chloroethane	0.36	U	0.38	U	0.38	U	0.35	U	0.47	D	0.35	U	0.38	U	0.36	U	0.35	U	0.36	U
Chloroform	4.9	D	3.1	D	87	D	2.7	D	20	D	2.5	D	3.2	D	1.4	D	1.2	D	6.6	D
Chloromethane	0.29	U	0.3	U	0.83	D	0.28	U	0.31	U	0.27	U	0.3	D	0.28	U	0.27	U	0.28	U
Cis-1,2-Dichloroethylene	0.14	U	0.14	U	0.14	U	0.53	D	0.24	D	0.57	D	0.14	U	0.38	D	0.13	U	0.13	U
Cyclohexane	0.48	U	0.5	U	3.5	D	0.46	U	0.82	D	0.45	U	1.1	D	8.3	D	1	D	0.47	U
Dichlorodifluoromethane	2.3	D	2.1	D	1.8	D	2.1	D	1.9	D	2.2	D	2	D	2.3	D	2.1	D	2.2	D
Ethyl Acetate	1	U	1	U	1	U	0.97	U	1.1	D	0.95	U	1	U	0.98	U	0.94	U	0.98	U
Ethylbenzene	1.4	D	2.3	D	42	D	2	D	4.3	D	1.5	D	3.7	D	5.3	D	2.4	D	6.8	D
Isopropanol	2.1	D	0.71	U	0.71	U	0.66	U	1.1	D	2.2	D	3.7	D	8.5	D	0.64	U	1.8	D
M,P-Xylene	5.9	D	10	D	170	D	8.4	D	15	D	5.7	D	12	D	17	D	8.5	D	23	D
Methyl Ethyl Ketone (2-Butanone)	13	D	10	D	49	D	31	D	14	D	17	D	74	D	29	D	8.2	D	10	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanor	0.57	U	0.59	U	0.59	U	0.55	U	0.61	U	5.7	D	7.4	D	4.3	D	0.7	D	1.5	D
Methylene Chloride	0.96	U	1	D	5.2	D	0.93	U	1.4	D	2	D	0.99	U	0.94	U	0.91	U	1.9	D
n-Heptane	1.7	D	1.9	D	23	D	3.2	D	4.9	D	0.54	U	10	D	11	D	2.6	D	0.56	U
n-Hexane	0.54	D	1.5	D	23	D	2.2	D	5.3	D	1.2	D	11	D	3.6	D	2.2	D	3.4	D
o-Xylene (1,2-Dimethylbenzene)	2.5	D	2.8	D	68	D	2.5	D	5	D	1.8	D	4.8	D	5.2	D	2.5	D	9.3	D
Propylene	2.3	D	8.6	D	370	D	5.5	D	18	D	4.5	D	190	D	18	D	7.8	D	26	D
Styrene	0.59	U	0.61	U	0.61	U	0.57	U	0.76	D	0.56	U	0.61	U	1.3	D	0.56	U	1.3	D
Tetrachloroethene (PCE)	1	D	17	D	100	D	44	D	18	D	160	D	13	D	38	D	18	D	76	D
Tetrahydrofuran	0.81	U	0.85	U	0.85	U	0.79	U	0.87	U	0.78	U	0.84	U	1.6	D	0.77	U	3	D
Toluene	4.8	D	8	D	35	D	9.2	D	14	D	5.1	D	20	D	1,200	D	4.9	D	19	D
Trichloroethene (TCE)	0.19	U	0.19	U	2.1	D	1.4	D	0.2	U	1.8	D	0.19	U	0.88	D	0.18	U	0.51	D
Trichlorofluoromethane	1.9	D	1.9	D	2.7	D	2.2	D	2.3	D	4.1	D	2.5	D	2.4	D	1.2	D	1.7	D
Total BTEX	15.13		24.50		336.00		23.40		42.60		15.60		52.50		1229.80		19.90		61.30	
Total VOCs	74.12		100		1239.1		177.33		215.15		378.94		611.65		1544.6		107.79		292.19	

Notes provided on 2.

Table 6
Soil Vapor Analytical Results
10-37 Beach 21st Street
Far Rockaway, New York
Langan Project No.: 170540601

Notes:

1. Only detected analytes are shown in the table.
2. µg/m³ = micrograms per cubic meter
3. SV = Soil Vapor
4. For compounds where re-analysis was required, only the re-run result is shown.

Qualifiers:

D = The concentration reported is a result of a diluted sample.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

APPENDIX A

AKRF

Environmental and Planning Consultants

440 Park Avenue South
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www.akrf.com

June 30, 2016

Nathan Gray, AICP
Vice President, Planning
New York City Economic Development Corporation
110 William Street
New York, NY 10038

Re: Phase I Environmental Site Assessment
Far Rockaway Municipal Parking Field – Queens, New York
AKRF Project Number: 20552

Dear Mr. Gray:

AKRF, Inc. is pleased to submit this Phase I Environmental Site Assessment Report for the above-referenced Property. This report includes the findings of a reconnaissance of the Property, an evaluation of readily available historical information and selected environmental databases and electronic records. AKRF, Inc. met the requirements of American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 unless noted otherwise in Section 8.0: "Limitations and Data Gaps".

We appreciate the opportunity to provide you with our services. If you should have any questions, please do not hesitate to contact us.

Sincerely,
AKRF, Inc.

Marcus Simons
Senior Vice President

Asya Bychkov
Environmental Engineer

Enc.

Far Rockaway Municipal Parking Field

Tax Block 15705, Lots 59 and 69

QUEENS, NY

Phase I Environmental Site Assessment

AKRF Project Number: 20552

Prepared for:

New York City Economic Development Corporation
110 William Street
New York, NY 10038

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

JUNE 2016

EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by the New York City Economic Development Corporation (EDC) to perform a Phase I Environmental Site Assessment of a Property located at 1037-1059 Beach 21st Street (also identified as Queens Tax Block 15705, Lots 59 and 69). The Property consisted of an approximately 58,000-square foot asphalt-paved municipal parking field with small landscaped areas.

This Phase I Environmental Site Assessment was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, the Standard are described in Section 8.0. The term "Recognized Environmental Condition" or REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *De Minimis* Condition. A *De Minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action.

The Property was historically developed with commercial, residential and auto-related buildings, including: a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; a lumber yard; a screen manufacturer; a publishing company; roofing works; and sheet metal works. A Long Island Railroad (LIRR) rail spur historically traversed the western portion of the Property. At some time between 1951 and 1979, all structures on the Property were demolished, the rail spur was removed, and the Property became a municipal parking lot. The surrounding area was mixed-use, including residential and commercial uses, churches, vacant buildings and lots, parking lots, and auto repair.

This assessment revealed the following:

Recognized Environmental Conditions (RECs)

- Historical Sanborn maps showed two gasoline underground storage tanks (USTs) in the western portion of the Property (1912 map), and in the northeastern corner of the Property (1933-1951 maps). The status of these tanks could not be ascertained. Additional aboveground or underground petroleum storage tanks may have been associated with historical on-site structures. Any such tanks may have been removed or, if they were underground, may remain beneath the Property.
- As noted above, historical Property uses included a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; a lumber yard; a screen manufacturer; a publishing company; a roofing works; and a sheet metal works.
- The, historical on-site rail spur may have been associated with use of creosote (a rail tie treatment containing semi-volatile organic compounds) and/or other oils. Additionally, spills from trains could have occurred.
- Various past and/or present off-site uses with some potential to affect the Property were identified, including: nearby rail tracks; auto repair shops (including two shops on the Property block, of which one was a historical filling station with a reported closed-status spill, and the second had evidence of poor housekeeping); filling stations; factories; paint and oil shops; printers; a sign painter; dry cleaners; and registered Petroleum Bulk Storage (PBS) facilities. A vacant, unpaved lot with an abandoned 55-gallon drum, apparent remnants of building foundations, and evidence of construction and demolition (C&D) debris in soil was observed south-adjacent to the Property.
- A Property survey provided by the NYC Department of Transportation (DOT), the Property owner, indicated that while some on-site storm drains appeared to be connected to the municipal sewer

system), others had no visible discharge pipes (i.e., they may be dry wells discharging to the subsurface).

De Minimis Condition

- Spill No. 0408292 at the Property was reported to NYSDEC in October 2004. The spill listing indicated that two abandoned 55-gallon drums of motor oil were found at the municipal parking lot, emptied, and removed. The spill listing was closed in December 2004. Based on listing details, this spill is not anticipated to have affected subsurface conditions.

Other on-site environmental concerns (items outside the scope of E1527-13 like ACM, LBP and/or PCBs in building materials or fill/debris)

- No suspect asbestos-containing materials (ACM) were observed on the Property. Painted surfaces (pavement stripes, signs and bollards) may contain lead-based paint; these surfaces were observed to be in good condition. If demolition debris from historical structures is present beneath the Property, it may contain ACM and/or lead-based paint.
- Fluorescent lighting fixtures on the Property may contain polychlorinated biphenyl (PCB)-containing components and/or mercury. If demolition debris is present beneath the Property, it may contain PCB-containing electrical equipment or lighting fixtures.
- A cluster of apparent plastic groundwater monitoring wells was observed in a small vegetated area in the southwestern corner of the Property. According to DOT, the apparent monitoring wells were associated with a New York City Department of Environmental Protection (NYCDEP) porous pavement pilot study, rather than an environmental investigation.

Potential for Vapor Encroachment

This Phase I assessment identified a potential for subsurface vapors and thus a potential for vapor encroachment into future buildings at the Property, based on the RECs noted above.

RECOMMENDATIONS

- Subsurface conditions beneath the Property may have been affected by past or present, on- or off-site uses. AKRF recommends a subsurface investigation involving the collection and laboratory analysis of subsurface samples prior to Property redevelopment. It is possible that this investigation may uncover evidence of a petroleum spill or other situation reportable to NYSDEC and/or other regulatory agencies.
- If any petroleum storage tanks are encountered during Property redevelopment, they should be properly closed in accordance with the applicable regulations, which may include NYSDEC registration and/or spill reporting requirements.
- Unless there is labeling or test data indicating that fluorescent lighting fixtures do not contain PCBs and/or mercury, if disposal is required, it should be performed in accordance with applicable federal, state, and local regulations and guidelines.
- If demolition debris containing any suspect ACM, or PCB-containing electrical equipment or fluorescent lighting fixtures, is encountered beneath the Property, such materials must be properly handled and disposed of in accordance with the applicable regulations.
- Any activities (such as renovation or demolition) with the potential to disturb lead-based paint must be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration regulation 29 CFR 1926.62 - *Lead Exposure in Construction*).

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FIGURES

APPENDICES

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by the New York City Economic Development Corporation (EDC) to perform a Phase I Environmental Site Assessment (ESA) of a Property located at 1037-1059 Beach 21st Street (also identified as Queens Tax Block 15705, Lots 59 and 69). The Property consisted of an approximately 58,000-square foot asphalt-paved municipal parking field with small landscaped areas. The surrounding area was mixed-use and included commercial, residential, institutional (churches and a school), warehouse, and auto-related (parking and auto repair) uses, as well as numerous vacant lots.

The scope of services for this assessment was in conformance with ASTM Standard E1527-13 (*Standard Practice for Environmental Site Assessments: Phase I ESA Practice)*. Any exceptions to, or deletions from, this practice are described in Section 8.0. The scope included the following:

- Observations of the Property (reconnaissance) to identify potential sources or indications of hazardous substances, including: aboveground storage tanks (ASTs); underground storage tanks (USTs); tank vents and fill ports; transformers and other items that could contain polychlorinated biphenyls (PCBs), drums or areas where hazardous materials were used, stored, or disposed; stained surfaces and soils; stressed vegetation, leaks, odors. In addition, neighboring properties were viewed, but only from public rights-of-way, to identify similar concerns.
- Readily available geological and groundwater (hydrogeological) information was evaluated to assist in determining the potential for contamination migration (including in soil, soil vapor and/or groundwater) within, from and onto the Property.
- The reconnaissance of the Property included observation of any readily visible suspect asbestos-containing materials (ACMs) and potential lead-based paint. However, no samples were collected or analyzed and this reconnaissance provides neither definitive nor exhaustive information.
- A state database of county-level radon concentrations was used to determine typical indoor radon levels and compare them to United States Environmental Protection Agency (USEPA) guidelines.
- Historical fire insurance maps for the Property and nearby sites were reviewed to evaluate historical land uses.
- The following federal regulatory databases were reviewed to determine the regulatory status of the Property and other properties within the ASTM-defined radii: National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Emergency Response Notification System (ERNS); Toxic Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the Air Discharge Facilities Index (ADF) and the USEPA Civil Enforcement Docket. The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.
- The following state regulatory databases were reviewed to determine the regulatory status of the Property and other properties within predetermined radii: petroleum and hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Hazardous Substance Disposal Site Draft Study; Hazardous Waste Treatment, Storage or Disposal Facilities; Major Oil Storage Facilities (MOSF); Brownfield Cleanup Program (BCP); and Historic Utility Sites.

- Local agency reviews including NYC Fire Department records (obtained as part of the database search), online Buildings and Finance Departments records, and Environmental Quality Review (CEQR) E Designation Sites were conducted for the Property only.

2.0 PHYSICAL SITE DESCRIPTION

On May 19, 2016, Ms. Asya Bychkov of AKRF conducted a reconnaissance of the Property. No one was available at the Property (a municipal parking lot) to answer pertinent questions. Neighboring properties were also viewed, but only from public rights-of way. The weather was sunny and approximately 75 °F, and the visibility good. Photographs from the reconnaissance are included in Appendix A.

2.1 General Site Conditions

The Property consisted of an asphalt-paved municipal parking lot with concrete sidewalks. A bus stop was located on the eastern side of the parking lot. Storm drains were observed throughout the parking lot. The pavement was noted to be in good condition. Small areas of surface staining (likely from parked vehicles) were noted, but did not appear likely to affect subsurface conditions.

A triangular grass area was located at the southwestern corner of the parking lot. No odors, staining, or stressed vegetation were noted in this area. Two clusters of apparent plastic monitoring wells were observed in this area. Mr. Nathan Gray, an EDC representative, contacted the NYC Department of Transportation (DOT, the Property owner), which indicated that the wells were associated with a failed NYC Department of Environmental Protection (DEP) porous pavement/bioswale pilot test.

2.2 Topography and Hydrogeology

Based on the U.S. Geological Survey Far Rockaway Quadrangle map, the Property is approximately 25 feet above mean sea level and is located on a hilltop, with surface topography sloping slightly down toward the northwest and southeast, away from the Property. Based on USGS mapping, bedrock is anticipated to be over 1,000 feet below grade, and groundwater is anticipated to be approximately 20 feet below grade. Based on surface topography, groundwater is likely to flow in a northwesterly direction toward Motts Basin (an inlet of Jamaica Bay approximately 2,200 feet away), or in a southeasterly direction toward Reynolds Channel (part of East Rockaway Inlet approximately 3,800 feet away). However, actual groundwater depth and flow direction may be affected by tides, past or present pumping, subsurface openings or obstructions, and other factors beyond the scope of this assessment. Groundwater in this portion of Queens is not used as a source of potable water (the municipal water supply uses upstate reservoirs).

2.3 Storage Tanks

2.3.1 Underground Storage Tanks (USTs)

During the reconnaissance, no evidence, such as vent pipes, fill caps, or concrete patches, was observed that would indicate USTs are or were present. No records pertaining to USTs were identified in the regulatory database, or computerized NYC Fire Department (FDNY) or NYC Buildings Department (DOB) records.

Off-site USTs are discussed in Section 5.2.2.

2.3.2 Aboveground Storage Tanks (ASTs)

As noted in Section 2.3.1, during the reconnaissance, no evidence, such as tanks or vaults likely to contain tanks, vent pipes or fill caps was observed during the reconnaissance to indicate that ASTs are or were present. No records pertaining to ASTs were identified in the regulatory database, or computerized FDNY or DOB records.

Off-site ASTs are discussed in Section 5.2.2.

2.4 Polychlorinated Biphenyls (PCBs)

Until 1979, polychlorinated biphenyls (PCBs), which provided beneficial insulating properties, were used in a variety of products, in particular electrical equipment such as transformers, capacitors, fluorescent light fixtures, and voltage regulators, but also in hydraulic fluids and some other products such as caulking.

Based on the parking lot's age (constructed in approximately 1979), fluorescent lighting fixtures may contain PCBs. If demolition debris is present beneath the Property, it may contain PCB-containing electrical equipment or lighting fixtures. Additionally, fluorescent lighting fixtures may contain mercury.

2.5 Lead-Based Paint

After 1977, the use of lead-based paint inside commercial structures was restricted and its use elsewhere became less common, but lead-based paint may still sometimes be used outdoors. Lead-based paint can present a hazard, particularly to children, especially when it is in poor condition.

Painted surfaces (pavement stripes, signs and bollards) were observed to be in good condition. Additionally, if demolition debris is present beneath the Property, it may contain lead-based paint.

Activities (such as renovation or demolition) with the potential to disturb lead-based paint are subject to a variety of requirements, including US Occupational Safety and Health Administration regulation 29 CFR 1926.62 (Lead Exposure in Construction).

2.6 Utilities

National Grid provided electricity to the Property and surrounding area. A site survey provided by DOT indicated that some on-site storm drains were noted to have pipes (i.e., a potential connection to the municipal sewer system), while others had no visible pipes (i.e., these drains may be dry wells).

2.7 Waste Management and Chemical Handling

At the time of the reconnaissance, trash bins were observed on the Property. No chemical storage or evidence of dumping was noted.

2.8 Radon

Radon is a colorless, odorless gas most commonly produced by the natural radioactive decay of certain rocks. According to a New York State Department of Health database, the average radon level in Queens is 1.24 picocuries/liter in basements and 0.61 picocuries/liter on ground floors, both below the USEPA recommended action level of 4.0 picocuries/liter.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Asbestos refers to a group of natural minerals that provide good fire resistance and insulation. Asbestos is also commonly found in vinyl flooring, plaster, sheetrock, joint compound, ceiling tiles, roofing materials, gaskets, mastics, caulks and other products. Materials containing more than one percent asbestos are considered asbestos-containing materials (ACM). ACM are classified as either friable (i.e., more readily release fibers, such as most spray-applied fireproofing) or non-friable (such as floor tiles).

No suspect ACM were observed during the reconnaissance. If demolition debris is present beneath the Property, it may contain ACM. Additionally, underground utilities may include ACM components.

4.0 ADJACENT LAND USE

The surrounding area was mixed-use, including residential and commercial uses, churches, vacant buildings and lots, parking lots, and auto repair. The two nearest auto repair shops were located west-adjacent to the Property, and approximately 220 feet south of the Property on the same block. The west-adjacent auto repair shop included a large unpaved area used to store tires, auto maintenance chemicals in five-gallon containers, 55-gallon drums, apparent waste oil containers, and an apparent abandoned 275 gallon AST. The auto repair shop to the south included an unpaved area north of the shop building, which was also used for repair activities at the time of the reconnaissance. A large vacant, unpaved lot with an abandoned 55-gallon drum, apparent remnants of building foundations, and evidence of construction and demolition (C&D) debris in soil was observed south-adjacent to the Property. Elevated A Line subway tracks and the Mott Avenue-Far Rockaway subway station were located approximately 150 feet west of the Property. Dry cleaners were observed approximately 370 feet north of the Property, and approximately 320 feet northwest of the Property.

5.0 PROPERTY HISTORY AND RECORDS REVIEW

5.1 Prior Ownership and Usage

5.1.1 Historical Land Use maps

Historical maps were reviewed for indications of uses (or other evidence) suggesting hazardous material generation, usage or disposal on or near the Property. Specifically, Sanborn Fire Insurance Maps from 1901, 1912, 1933, 1951, 1982, 1990, and 2015 were reviewed.

1901

The Property was developed with one- and two-story structures, including three dwellings, a store, a coal and wood yard, and accessory sheds. A LIRR rail spur ran north-south across the western portion of the Property. The remainder of the Property consisted of yards, and open land along the rail spur.

The Property was bounded to the east by White Street (the current Beach 21st Street). The southern portion of the Property block, and surrounding blocks, were developed with dwellings, churches, hotels and commercial buildings. The western portion of the Property block was vacant. A carriage shop, a coal yard, a bottling works, and a Chinese laundry (potential dry cleaner) were noted south of the Property on the same block. Additional Chinese laundries were noted on the south-

and east-adjacent blocks. The south-adjacent block also included a carriage repair shop and two paint and oil shops (one with a gasoline UST). Additional LIRR tracks were shown approximately 150 feet west of the Property, running northeast-southwest.

1912

One dwelling shown on the Property on the 1901 map had been demolished. New structures constructed on the Property included a barn, four stores, and a three-story (plus basement) furniture factory with upholstering and painting areas. A gasoline UST was shown behind the furniture factory, in the west-central portion of the Property adjacent to the on-site rail spur.

The surrounding area was more densely developed with dwellings, churches, schools and commercial uses compared to the 1901 map. The carriage shop, bottling works, and Chinese laundry shown on the Property block on the 1901 map were no longer present. Chinese laundries and paint and oil shops shown on the south- and east-adjacent blocks on the 1901 map were no longer present.

1933

Sheds shown in the northern portion of the Property on the 1912 map were labeled as an auto repair shop and paint storage. A gasoline UST was shown in the northeastern corner of the Property. The former coal and wood yard in the central portion of the Property had been replaced by an upholsterer and an unspecified store. The northern half of the former furniture factory shown on the 1912 map was illegible, while the southern half was labeled as woodworking. A gasoline UST was no longer shown behind this facililty. A dwelling and sheds shown in the southern portion of the Property on the 1912 map had been demolished and replaced with a carpentry shop with lumber storage.

Two printers and a sign painter were shown east of the Property across Beach 21st Street. A building material and paint store, coal storage, and an auto repair shop with gasoline USTs were shown in the southern portion of the Property block. A filling station with auto repair was shown at the southwestern corner of the east-adjacent block. The carriage repair shop shown on the south-adjacent block on the 1912 map was replaced by a bottling works. No further significant changes from the 1912 map were noted in the surrounding area.

1951

The paint storage shed shown on the northern side of the Property on the 1933 map had been demolished. The upholsterer in the central portion of the Property was replaced by a tin shop. The woodworking facility in the southern portion of the Property was replaced by a lumber yard. Paint storage was shown in the carpentry shop on the southern side of the Property.

A roofing materials warehouse was shown south-adjacent to the Property, with stores and two auto repair shops with gasoline USTs further south on the same block. The formerly vacant western portion of the Property block was developed with stores, dwellings, a Postal Office garage, and a bottling works with a gasoline UST. A sign painter was no longer shown on the east-adjacent block. A dry cleaner was shown approximately 390 feet south of the Property on the south-adjacent

block. No further significant changes from the 1933 map were noted in the surrounding area.

1982

All structures on the Property had been demolished, and the Property was shown as a vacant lot with a rail spur along its western side. Portions of the rail spur appeared to have been removed.

A printer was shown north of the Property on the same block. Most structures shown on the Property block on the 1951 map had been demolished, although several stores and dwellings remained in its southwestern portion. An auto repair shop and two filling stations had been constructed south of the Property on this block. A filling station was no longer shown at the southwestern corner of the east-adjacent block, but the auto repair shop shown on the 1951 map remained. The former LIRR tracks west of the Property were labeled as part of the NYC Transit system and no longer extended northeast past Mott Avenue, terminating at Far Rockaway Station on the south side of Mott Avenue. The rail spur formerly extending south from the Property was no longer shown.

1990

The Property remained similar to the 1982 map.

A filling station shown on the 1982 map at the southeastern corner of the Property block was labeled as an auto repair shop. A dry cleaner was no longer shown on the block to the south. No further significant changes from the 1982 map were noted on the Property or in the surrounding area.

2015

The Property was labeled as a public parking lot with a bus terminal. No rails were shown on the Property.

An auto repair shop was shown west-adjacent to the Property. New dwellings were shown on the western portion of the Property block. No further significant changes from the 1990 map were noted in the surrounding area.

To summarize, the historical maps indicated that the Property was historically developed with a number of commercial, residential and auto-related buildings, including: a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; and a lumber yard. Gasoline USTs were shown in the western portion of the Property on the 1912 map, and in the northeastern corner of the Property on the 1933-1951 maps. A LIRR rail spur was shown in the western portion of the Property on the 1901-1990 maps. All structures on the Property were demolished between 1951 and 1982, and the Property was labeled as a parking lot on the 2015 map.

The surrounding area was developed with a mix of commercial, residential, manufacturing, and auto-related uses throughout the 20th century. Nearby historical uses that may have affected subsurface conditions beneath the Property included: LIRR/New York City transit tracks; a dry cleaner; Chinese laundries (potential dry cleaners); paint and oil shops; printers; a sign painter; and auto repair shops and filling stations with gasoline USTs.

5.1.2 Historical Aerial Photographs

Since historical fire insurance maps were available for the Property (and surrounding area) and these maps included information relating to land use, aerial photographs would, most likely, not provide additional useful information relevant to the potential for recognized environmental conditions or other environmental concerns. As such, aerial photographs were not reviewed.

5.1.3 Property Tax Files and Zoning Records

Based on information provided by Toxics Targeting, Inc. of Ithaca, New York, the Property is zoned as R5 (residential district) with a C8-1 (commercial district) overlay, and the Property is classified as V8 (State or Federal vacant land) and noted to have no buildings.

5.1.4 Recorded Land Title Records

No title records were provided for the Property, and no such records were available on the NYC ACRIS website (discussed in Section 5.2.3).

5.1.5 Local Street Directories

A City Directory prepared by Environmental Data Resources, Inc. was reviewed as part of this Phase I ESA. The City Directory consisted of the names of businesses located on-site and in adjacent properties, compiled from city and reverse telephone directories at approximately five-year intervals starting in 1922.

The following historical Property uses were identified: a screen manufacturer, a publishing company, a roofing works, and residential uses in 1934; a roofing and sheet metal business in 1950; and an apparent commercial listing (Walker & Son) in 1962.

5.2 Regulatory Review

The regulatory database listings, shown in Appendix B, were obtained from Toxics Targeting, Inc. of Ithaca, New York. It includes summaries of the databases searched, their radii around the Property and limitations of the data. The databases searched and associated radii were consistent with ASTM E1527-13.

5.2.1 Federal

Databases searched included the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the Air Discharge Facilities Index (ADF); and the USEPA Civil Enforcement Docket. Facilities subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) are discussed with State RCRA listings.

National Priority List (NPL)

The NPL is the USEPA's list of sites that probably require remedial action under the Superfund Program. Nearby NPL sites can sometimes pose a risk of stigmatizing surrounding properties and thus impacting property values.

No NPL sites were identified within a one-mile radius of the Property.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of sites which the USEPA has investigated, or plans to investigate, pursuant to the Superfund Act of 1980 (CERCLA). As such, some of these sites may ultimately present concerns and others may not (but could still pose a perceived concern).

No CERCLIS sites were reported within a ½-mile radius of the Property.

Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on certain reported releases of petroleum and other potentially hazardous substances.

The Property was not listed as an ERNS site.

Toxic Chemical Release Inventory System (TRIS)

The TRIS contains information reported by a variety of industries on their annual estimated releases of certain chemicals.

No TRIS sites were identified within a ⅛-mile radius of the Property.

Permit Compliance System of Toxic Wastewater Discharge (WWD)

This database includes certain sites which discharge wastewater containing potentially hazardous chemicals.

No WWD facilities were reported within a ⅛-mile radius of the Property.

United States Environmental Protection Agency Civil Enforcement Docket

This database tracks civil judiciary cases filed on behalf of the USEPA by the Department of Justice.

No facilities were listed in the USEPA's Civil Enforcement Docket within a ⅛-mile radius of the Property.

Air Discharge Facilities Index (ADF)

This federal database includes information on certain air emission sources.

No Air Discharge Facilities were identified within a ⅛-mile radius of the Property:

5.2.2 State

State databases included the listings of petroleum/hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Major Oil Storage Facilities (MOSF); Brownfield Cleanup Program (BCP) Sites; and Historic Utility Sites.

New York SPILLS Database

This database includes releases reported to the NYSDEC, including tank test failures (for USTs only) and tank failures.

One spill was reported on the Property. One hundred twenty-six additional spills were reported within a ½-mile radius of the Property, including six active-status spills and 120 closed-status spills. Spill listings with some potential to affect the Property are summarized below:

- In October 2004, two abandoned 55-gallon drums of motor oil were reportedly found at a municipal parking lot across from 10-44 Beach 21st Street (i.e., on the Property) and Spill No. 0408292 was reported. The drums were reportedly emptied and removed, and the spill listing was closed in December 2004.
- In November 2008, a spill was reported at the Far Rockaway Shopping Mall, located on Mott Avenue between Beach Channel Drive and Central Avenue, approximately 150 feet north of the Property. According to the listing, a caller complained that commuter buses were regularly using the parking lot to dump crank-case oil, trash, and other materials. A visit by NYSDEC indicated several potholes in the parking lot, with a small quantity of oil noted in one pothole. Based on the "minor" nature of the observed dumping, the listing was closed within a week of reporting.
- In July 2013, a spill was reported at an auto repair shop at 10-09 Cornaga Avenue, approximately 220 feet south of the Property. According to the listing, this site was historically a filling station, and nine gasoline USTs and piping were removed in 1999. A subsurface investigation reportedly identified contaminated groundwater, but no significant soil contamination, with a dry well as the apparent source. No further information was provided; however, the listing was closed in December 2013. This facility was also identified in the Petroleum Bulk Storage database as 10-09 Beach 21st Street.

Based on the listing details, distance and/or anticipated groundwater flow direction, the remaining spill listings are unlikely to have significantly affected the Property. Details from all spills are included in Appendix C.

Resource Conservation and Recovery Act (RCRA) Notifiers Listings

This database lists sites which have filed notification forms regarding hazardous waste activity, including: treatment, storage and disposal facilities (TSDs); small-quantity (SQG) and large-quantity generators (LQG); and transporters regulated under RCRA. The discussion below includes any CORRACTS listings of facilities which are subject to corrective action under RCRA.

No TSD facilities were identified within a ½-mile radius of the Property. No CORRACTS sites were reported within a one-mile radius of the Property.

Six RCRA generators/transporters were reported within a ⅛-mile radius of the Property. Facilities with some potential to affect subsurface conditions beneath the Property, based on proximity and/or the nature of the listings, are as follows:

- The Metropolitan Transit Authority (MTA) Mott Avenue Station, located at Mott Avenue and Beach 22nd Street, approximately 325 feet north of the Property, was listed as a Small Quantity Generator (SQG) of lead and cadmium waste in 2011 and 2012.
- Snow White Cleaners, located at 20-88 Mott Avenue, approximately 330 feet north-northeast of the Property, was listed as a generator of spent halogenated solvents in 2003.

- George L. Chris Cleaners, located at 21-40 Mott Avenue, approximately 530 feet north-northwest of the Property, was listed as a Conditionally Exempt SQG (CESQG) of spent halogenated solvents in 2003.
- Myles Cleaner, located at 11-59 Beach Channel Drive, approximately 650 feet northwest of the Property, was listed as a generator of spent halogenated solvents in 2005.

Based on the nature of the listings, distance, and/or anticipated groundwater flow direction, potential discharges from the dry cleaners may have affected subsurface conditions beneath the Property. The remaining facilities were unlikely to have affected the Property.

Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

No CBS facilities were listed within a ⅛-mile radius of the Property.

Solid Waste Facilities (SWF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other sites which manage solid waste.

Four facilities were located within ½ mile of the Property. The nearest was Auto Maven Dent Dr. at 10-16 Beach 19th Street, approximately 795 feet east-southeast of the Property, which was listed as an auto dismantling facility. Based on distance and/or anticipated groundwater flow direction, none of the SWF facilities are anticipated to have significantly affected subsurface conditions beneath the Property.

Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than 400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

The Property was not listed in the PBS or FDNY databases. Seventeen PBS and FDNY facilities were identified within a ⅛-mile radius of the Property. Details of facilities with some potential to affect the Property, based on listing details and/or location, are given in Table 1.

Table 1
Area Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Status	Distance/Direction from Property
Nobo Corporation 10-74 Beach 22nd Street	275 AST 275 AST	No. 2 Fuel Oil Waste Oil	Conv. to Non-Regulated Use Temporarily Out Of Service	West-adjacent
Owen Auto Service 10-17 Beach 21st Street	5 x 550 UST	Gasoline	Closed-Removed	South-adjacent

Table 1
Area Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Status	Distance/Direction from Property
BayMart 10-57 Beach 20th Street	1,500 AST	No. 2 Fuel Oil	In Service	40 feet east
RCL Service Center 10-09 Beach 21st Street (also identified as 10-09 Cornaga Avenue)	4,000 UST 8 x 500 UST	Gasoline	Closed-Removed	220 feet south
Rockaway Co. 19-31 Mott Avenue	2,000 UST 2,000 AST	No. 2 Fuel Oil	Closed In Place In Service	395 feet east

Notes: AST - aboveground storage tank
UST - underground storage tank

A spill with the potential to have affected the Property was reported for 10-09 Beach 21st Street/10-09 Cornaga Avenue. In addition, potential undocumented releases from the above facilities may have affected subsurface conditions beneath the Property. Other PBS and FDNY facilities are not anticipated to have significantly affected the Property, based on listing details, distance, and/or anticipated groundwater flow direction. Details of all PBS facilities located within ⅛-mile of the Property are included in Appendix C.

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

Two inactive hazardous waste disposal sites were located within a 1-mile radius of the Property. Based on their distance (over 3,200 feet away) and the anticipated groundwater flow direction, these facilities are not anticipated to have affected the Property.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks certain sites that were not listed on SHWS, but may still require investigation and/or cleanup.

No SHSWDSs were identified within a ½-mile radius of the Property.

Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more.

No Major Oil Storage Facilities were reported within a ⅛-mile radius of the Property.

Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No ERP sites were identified within a ½-mile radius of the Property.

Voluntary Cleanup Program

The Voluntary Cleanup Program is a NYSDEC program for investigation and remediation of (generally) privately-owned sites. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No VCP sites were identified within a ½-mile radius of the Property.

Brownfield Cleanup Program

This NYSDEC program is the successor to the Voluntary Cleanup Program. Again, some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No BCP sites were identified within a ½-mile radius of the Property.

Historic Utility Sites

This is an inventory of certain power generating stations, manufactured gas plants, gas storage facilities, maintenance yards and other gas and electric utility sites identified in various historic documents, maps and annual reports from 1898 to 1950.

No historical utility sites were reported within a ⅛-mile of the Property.

5.2.3 Local Agency File Review

Records available online from the New York City Fire, Buildings and Finance Departments were viewed for the Property. The Fire Department records were obtained by Toxics Targeting, Inc. as part of the regulatory database search. Since the records typically address a multitude of issues, the review focused on items likely to relate to the potential presence of hazardous materials, e.g., petroleum tank installation applications and permits, and records indicating prior uses. Copies of pertinent information are included in Appendices C (Fire Department Records) and D (Buildings Department Records).

Fire Department

The computerized FDNY Tanks database was searched regarding past or current motor vehicle fuel and heating oil tank listings within a ⅛-mile radius of the Property.

Seven listings within a ⅛-mile radius of the Property were identified in computerized FDNY tank records. These listings are discussed with PBS listings in Section 5.2.2.

Buildings Department

Buildings Department records were generally consistent with the historical information detailed in the Sanborn maps, reviewed in Section 5.1.1. Computerized records identified the following:

- Three new building permits dated 1910, 1913 and 1928;
- Nine demolition permits dated 1910, 1919, 1926, 1961 and 1961; and
- A 1979 Certificate of Occupancy (C of O) for an on-ground public parking lot with a bus stop.

Most of the other listed actions were associated with inspections, alterations and repairs. Files pertaining to the new building and demolition permits were unavailable for review.

Land Title Records and Tax Records

Electronic property transaction records for the Property Block and Lot were reviewed from the New York City Department of Finance Office of the City Register Automated City Register Information System (ACRIS). No deed information was obtained from the ACRIS files. The ACRIS records identified a 1976 court order indicating that land would be condemned for the expansion of a municipal parking field and creation of a bus stop.

Department of City Planning

A search of NYC Environmental Quality Review Requirements (CEQR) data by Toxics Targeting, Inc. indicated that no sites within a ⅛-mile radius of the Property have been assigned (E) designations.

5.2.4 Additional Environmental Record Sources

To enhance the search, ASTM requires that additional local records be reviewed (i.e., beyond those included as part of the standard database search or checked online) when, in judgment of the environmental professional, such records for the Property or any adjoining property would be reasonably ascertainable; and useful, accurate and complete in light of the objective of the records review. These records may include:

- Local Brownfields Lists
- Local Lists of Landfill/solid waste disposal sites
- Local Lists of Hazardous Waste/Contaminated Sites
- Local Lists of Registered Tanks
- Local Land Records (for activity use limitations)
- Records of emergency release reports
- Records of contaminated public wells

Sources for these records include:

- Department of Health/Environmental Division
- Fire Department
- Building Permit/Inspection Department
- Local/Regional Pollution Control Agency
- Local/Regional Water Quality Agency
- Local Electric Utility (for PCB records)

Freedom of Information Law (FOIL) requests for information relevant to environmental conditions on the Property were submitted to DEP, NYC Department of Health and Mental Hygiene (NYCDOH), New York State Department of Health (NYSDOH), and NYSDEC. To date, no responses have been provided to AKRF. In the event that pertinent information is provided following the completion of this report, an addendum to the report will be prepared to discuss the findings.

In AKRF's judgment, no other additional local records meeting the ASTM criteria are pertinent for the Property.

6.0 USER-PROVIDED INFORMATION

In preparing this Phase I ESA, AKRF requested that EDC provide any pertinent information regarding the Property, specifically:

- Whether any *environmental liens* or *activity and land use limitations (AULs)* are in place or filed or recorded against the Property?
- Whether they had any specialized knowledge or experience related to the Property or nearby properties (e.g., specialized knowledge of any chemicals used on-site)?
- Whether the (anticipated) purchase price reflects that the Property is or could be contaminated?
- Whether they were aware of commonly known or reasonably ascertainable information about environmental conditions of the Property?
- Whether they were aware of any obvious indicators of contamination at the Property?
- Whether they were aware of any pending, threatened, ongoing or past litigation/enforcement action/consent order/notice of violation related to hazardous substances or petroleum products?

According to EDC, this Phase I ESA was performed to evaluate the Property as part of due diligence related to its potential its potential disposition to a private owner for eventual redevelopment. Mr. Nathan Gray, Vice President of Planning at EDC, provided information from DOT regarding a porous pavement pilot study at the Property (see Section 7.0). Mr. Gray was not aware of any: environmental liens or activity use limitations on the Property; Property value reduction due to environmental issues; any pending, threatened, ongoing or past litigation/enforcement action/consent order/notice of violation related to hazardous substances or petroleum products; or any obvious indicators of contamination on the Property. To the extent that pertinent additional information was provided, it has been summarized elsewhere in this report.

7.0 PREVIOUS STUDIES

Mr. Gray provided a Property survey and construction plans for a NYCDEP porous pavement pilot program at the Property, dated September 2010, which were provided to EDC by DOT. The plans indicated that the monitoring wells observed during the reconnaissance at the southwestern corner of the Property were associated with the pilot program. According to the survey, some on-site storm drains were noted to have pipes (i.e., a potential connection to the municipal sewer system), while others had no visible pipes (i.e., these drains may be dry wells).

No other previous studies were provided to AKRF.

8.0 LIMITATIONS AND DATA GAPS

This assessment met the requirements of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 at the time it was performed, with the following limitations:

- Results of this investigation are valid as of the dates on which the investigation was performed.
- Interviews and user provided information were limited to those discussed in Sections 2.0 and 6.0. To the extent that interviews were not conducted with the list of interviewees cited in the ASTM Standard (past and present owners, operators, and occupants of the Property and local government officials), AKRF does not believe that this represents a significant data gap likely to result in additional or significantly changed recognized environmental conditions or conclusions.
- The Property area history was not conducted in five-year intervals. However, sufficient information about the history of the site and surrounding area could be obtained from the available historical Sanborn maps, New York City Buildings Department records, and interviews, and this data gap is not likely to alter the conclusions of this report.
- Agency File Reviews for the Property and adjacent properties consisted of: a review of standard databases and electronic records maintained by pertinent departments and agencies (summarized in Section 5.2); and FOIL requests for pertinent records submitted to the DEP, NYCDOH, NYSDOH, and NYSDEC. AKRF believes that this file review was sufficient in determining the potential for recognized environmental conditions or other environmental concerns at the Property and additional reviews beyond this are not warranted and would not likely change the conclusions of this assessment.

9.0 CONCLUSIONS AND RECOMMENDATIONS

This Phase I Environmental Site Assessment was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, the Standard are described in Section 8.0. The term "Recognized Environmental Condition" or REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of Historic REC (HREC), Controlled REC (CREC), and *De Minimis* Condition. A *De Minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action.

The Property was historically developed with commercial, residential and auto-related buildings, including: a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; a lumber yard; a screen manufacturer; a publishing company; roofing works; and sheet metal works. A Long Island Railroad (LIRR) rail spur historically traversed the western portion of the Property. At some time between 1951 and 1979, all structures on the Property were demolished, the rail spur was removed, and the Property became a municipal parking lot. The surrounding area was mixed-use, including residential and commercial uses, churches, vacant buildings and lots, parking lots, and auto repair.

This assessment revealed the following:

Recognized Environmental Conditions (RECs)

- Historical Sanborn maps showed two gasoline underground storage tanks (USTs) in the western portion of the Property (1912 map), and in the northeastern corner of the Property (1933-1951 maps). The status of these tanks could not be ascertained. Additional aboveground or underground petroleum storage tanks may have been associated with historical on-site structures. Any such tanks may have been removed or, if they were underground, may remain beneath the Property.
- As noted above, historical Property uses included a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; a lumber yard; a screen manufacturer; a publishing company; a roofing works; and a sheet metal works.
- The, historical on-site rail spur may have been associated with use of creosote (a rail tie treatment containing semi-volatile organic compounds) and/or other oils. Additionally, spills from trains could have occurred.
- Various past and/or present off-site uses with some potential to affect the Property were identified, including: nearby rail tracks; auto repair shops (including two shops on the Property block, of which one was a historical filling station with a reported closed-status spill, and the second had evidence of poor housekeeping); filling stations; factories; paint and oil shops; printers; a sign painter; dry cleaners; and registered Petroleum Bulk Storage (PBS) facilities. A vacant, unpaved lot with an abandoned 55-gallon drum, apparent remnants of building foundations, and evidence of construction and demolition (C&D) debris in soil was observed south-adjacent to the Property.
- A Property survey provided by the NYC Department of Transportation (DOT), the Property owner, indicated that while some on-site storm drains appeared to be connected to the municipal sewer system), others had no visible discharge pipes (i.e., they may be dry wells discharging to the subsurface).

De Minimis Condition

- Spill No. 0408292 at the Property was reported to NYSDEC in October 2004. The spill listing indicated that two abandoned 55-gallon drums of motor oil were found at the municipal parking lot, emptied, and removed. The spill listing was closed in December 2004. Based on listing details, this spill is not anticipated to have affected subsurface conditions.

Other on-site environmental concerns (items outside the scope of E1527-13 like ACM, LBP and/or PCBs in building materials or fill/debris)

- No suspect asbestos-containing materials (ACM) were observed on the Property. Painted surfaces (pavement stripes, signs and bollards) may contain lead-based paint; these surfaces were observed to be in good condition. If demolition debris from historical structures is present beneath the Property, it may contain ACM and/or lead-based paint.
- Fluorescent lighting fixtures on the Property may contain polychlorinated biphenyl (PCB)-containing components and/or mercury. If demolition debris is present beneath the Property, it may contain PCB-containing electrical equipment or lighting fixtures.
- A cluster of apparent plastic groundwater monitoring wells was observed in a small vegetated area in the southwestern corner of the Property. According to DOT, the apparent monitoring wells were associated with a New York City Department of Environmental Protection (NYCDEP) porous pavement pilot study, rather than an environmental investigation.

Potential for Vapor Encroachment

This Phase I assessment identified a potential for subsurface vapors and thus a potential for vapor encroachment into future buildings at the Property, based on the RECs noted above.

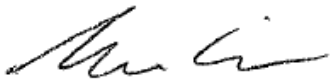
RECOMMENDATIONS

- Subsurface conditions beneath the Property may have been affected by past or present, on- or off-site uses. AKRF recommends a subsurface investigation involving the collection and laboratory analysis of subsurface samples prior to Property redevelopment. It is possible that this investigation may uncover evidence of a petroleum spill or other situation reportable to NYSDEC and/or other regulatory agencies.
- If any petroleum storage tanks are encountered during Property redevelopment, they should be properly closed in accordance with the applicable regulations, which may include NYSDEC registration and/or spill reporting requirements.
- Unless there is labeling or test data indicating that fluorescent lighting fixtures do not contain PCBs and/or mercury, if disposal is required, it should be performed in accordance with applicable federal, state, and local regulations and guidelines.
- If demolition debris containing any suspect ACM, or PCB-containing electrical equipment or fluorescent lighting fixtures, is encountered beneath the Property, such materials must be properly handled and disposed of in accordance with the applicable regulations.
- Any activities (such as renovation or demolition) with the potential to disturb lead-based paint must be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration regulation 29 CFR 1926.62 - *Lead Exposure in Construction*).

10.0 SIGNATURE PAGE

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property for which the assessment was performed. We have performed all the appropriate inquiries in conformance with standards and practices set forth in 40 CFR Part 312.



Marcus Simons
Senior Vice President

Asya Bychkov
Environmental Engineer

11.0 QUALIFICATIONS

The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the Property, and to identify existing and/or potential environmental issues associated with the Property including *Recognized Environmental Conditions* as defined in ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*.

The assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in accordance with the above-referenced ASTM Standard, except as noted otherwise in Section 8.0. It should only be used as a guide in determining the possible presence or absence of hazardous materials on the Property at the time of the reconnaissance, as it is based upon the review of readily available records relating to both the Property and the surrounding area, as well as a visual reconnaissance of current conditions.

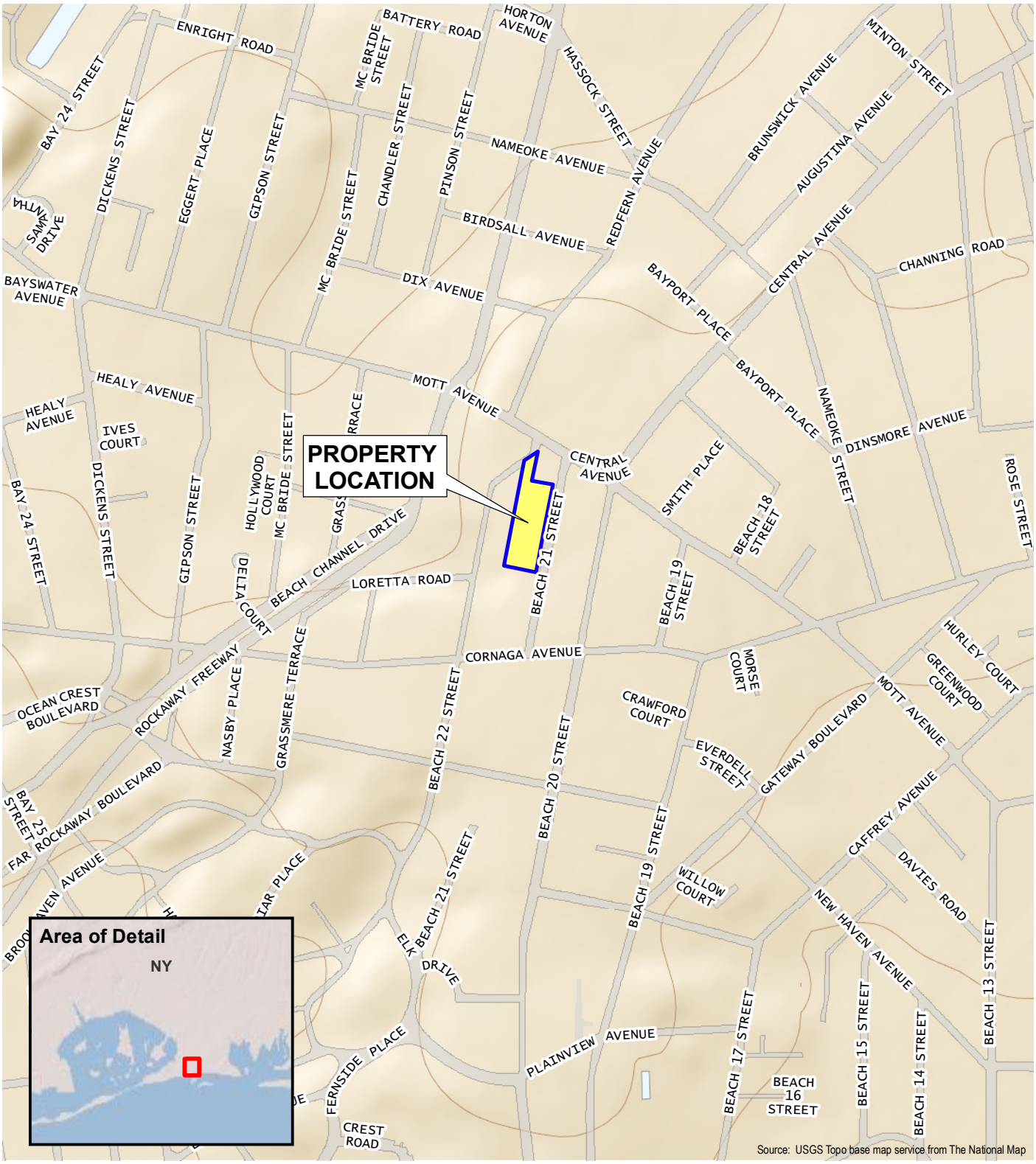
This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

This report is based on services performed by AKRF, Inc. professional staff and observation of the Property and its surroundings. We represent that observations made in this assessment are accurate to the best of our knowledge, and that no findings or observations concerning the potential presence of hazardous substances have been withheld or amended. The research and reconnaissance have been carried to a level that meets accepted industry and professional standards. Nevertheless, AKRF and the undersigned shall have no liability or obligation to any party other than the New York City Economic Development Corporation and their successors or assignees, and AKRF's obligations and liabilities to the above, their successors or assignees is limited to fraudulent statements made, or grossly negligent or willful acts or omissions.

12.0 REFERENCES

1. Toxics Targeting, Inc., 1037-1059 Beach 21st Street - Queens, NY, Regulatory Radius Search, May 18, 2016.
2. U.S. Geological Survey, *Far Rockaway, NY Quadrangle*, 7.5 minute Series (Topographic), Scale 1:24,000, 2013.
3. U.S. Geological Survey, *Reconnaissance of the Ground-Water Resources of Kings and Queens Counties, New York - Open-File Report 81-1186*, 1981.
4. U.S. Geological Survey, *Fact Sheet FS 134-97: Water-Table Altitude in Kings and Queens Counties, New York, in March 1997*, November 1997.
5. New York State Department of Health: Office of Public Health - Environmental Radiation Section, Basement Radon Screening Data, 2016.
6. Sanborn Insurance Maps dated 1901, 1912, 1933, 1951, 1982, 1990, and 2015.
7. Environmental Data Resources, Inc., 10-49 Beach 21st Street – Far Rockaway, NY 11691, City Directory Abstract, May 18, 2016.

FIGURES



Far Rockaway Municipal Parking Field
Queens, New York

PROPERTY LOCATION

AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

DATE
6/3/2016

PROJECT No.
20552

FIGURE
1

Aerial Source: 2014 New York Statewide Digital Orthoimagery

Legend

Property Boundary

30 Lot Boundary

0 50 100 200

Feet

Far Rockaway Municipal Parking Field
Queens, New York

PROPERTY DETAIL

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6/3/2016

PROJECT No.
20552

FIGURE
2

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Photograph 1. The Property, view north.

Photograph 2. A bus stop on the eastern side of the Property, and commercial/ residential development to the east across Beach 21st Street, view north.

Photograph 3. The western side of the Property, view southwest.

Photograph 4. A grassy patch in the southwestern corner of the Property, with monitoring wells for a permeable pavement pilot test.

Photograph 5. A vacant lot south-adjacent to the Property, view west from Beach 21st Street.

Photograph 6. An abandoned drum on the vacant lot.

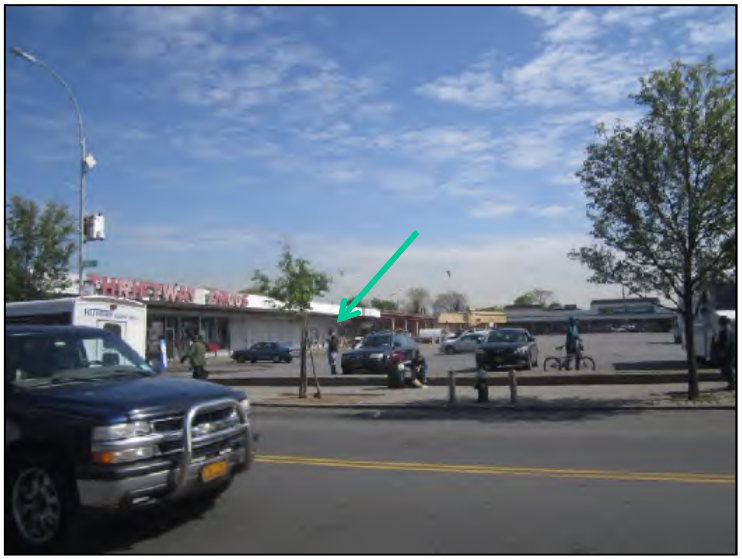
Photograph 7. An auto repair shop at the southeastern corner of the Property block, view northwest across Cornaga Avenue.

Photograph 8. A parking and repair area adjacent to the auto repair shop. Note that the northern portion (marked with an arrow) is unpaved.

Photograph 9. An auto repair shop west-adjacent to the Property, view south from Beach 22nd Street.

Photograph 10. Tire, drum and chemical storage in an unpaved area south of the auto repair shop (west-adjacent to the Property), view west from the Property.

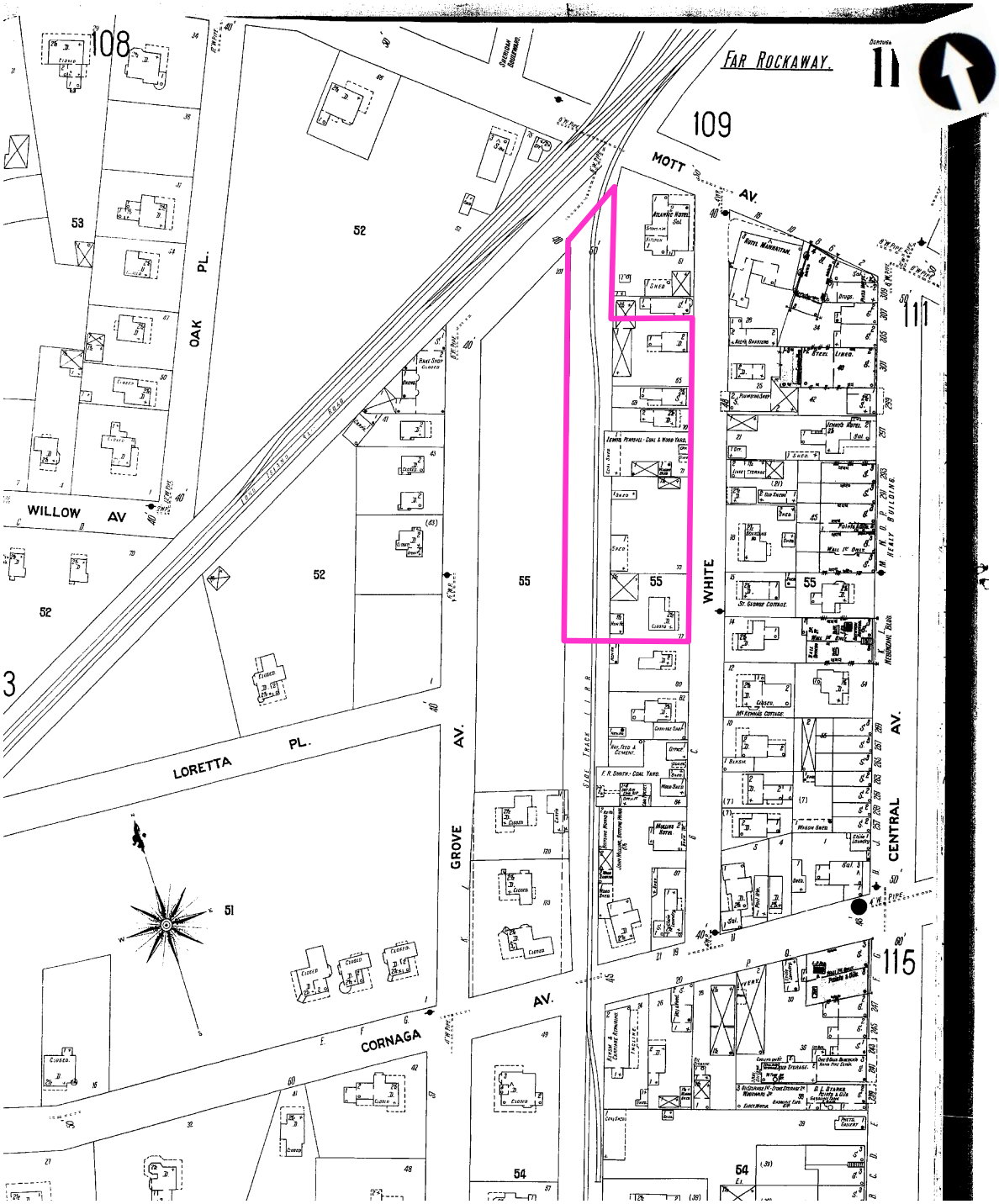
Photograph 11. Elevated MTA A Line tracks and Mott Avenue station west of the Property, view south from Mott Avenue.



Photograph 12. A shopping mall on the north-adjacent block, view north across Mott Avenue. A dry cleaner is marked with an arrow.

APPENDIX B

HISTORICAL SANBORN MAPS



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1901 SANBORN MAP

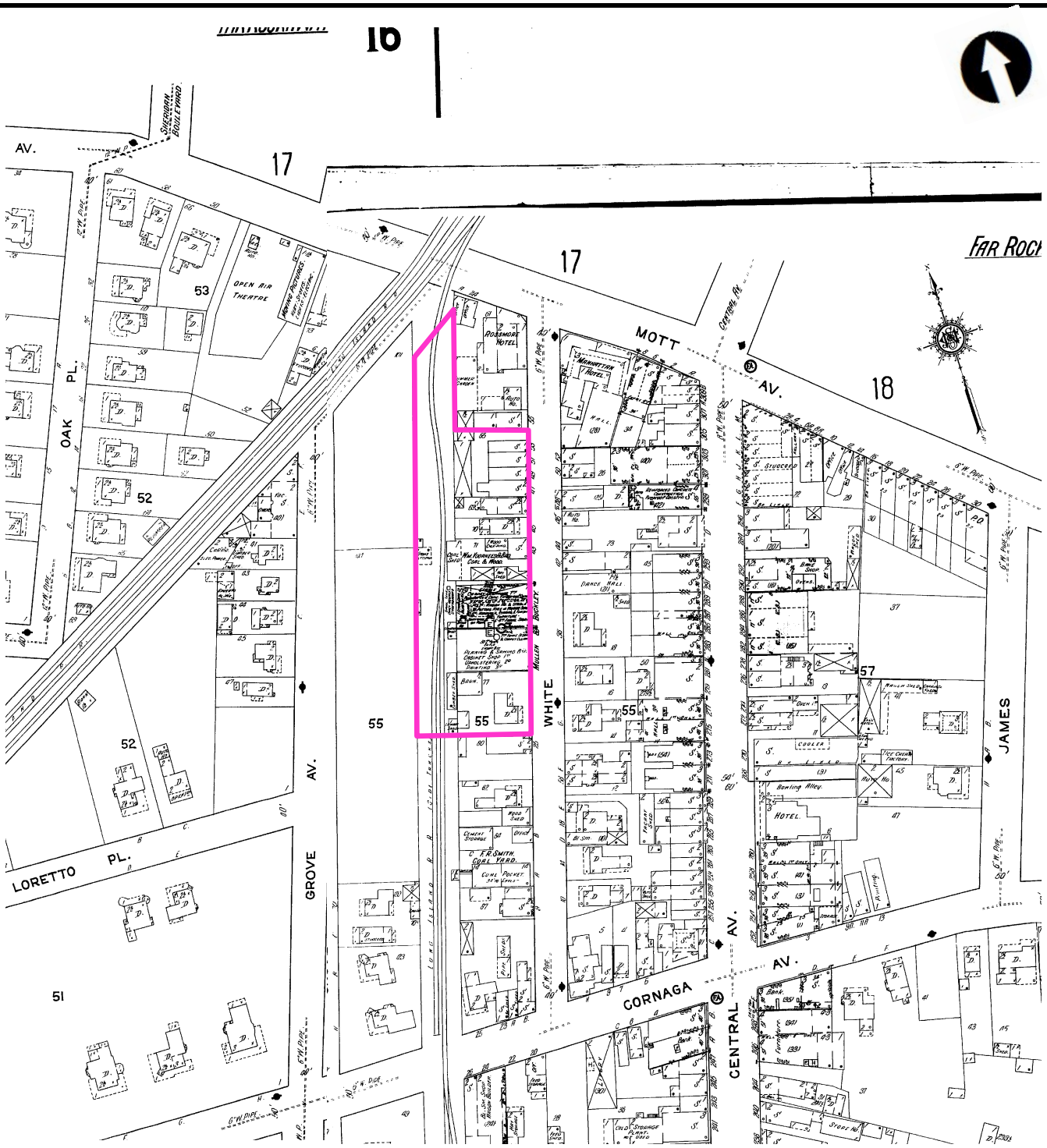
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\Hazmat\South Disposition Site Phase I\Sanborns



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1912 SANBORN MAP

AKRF

Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

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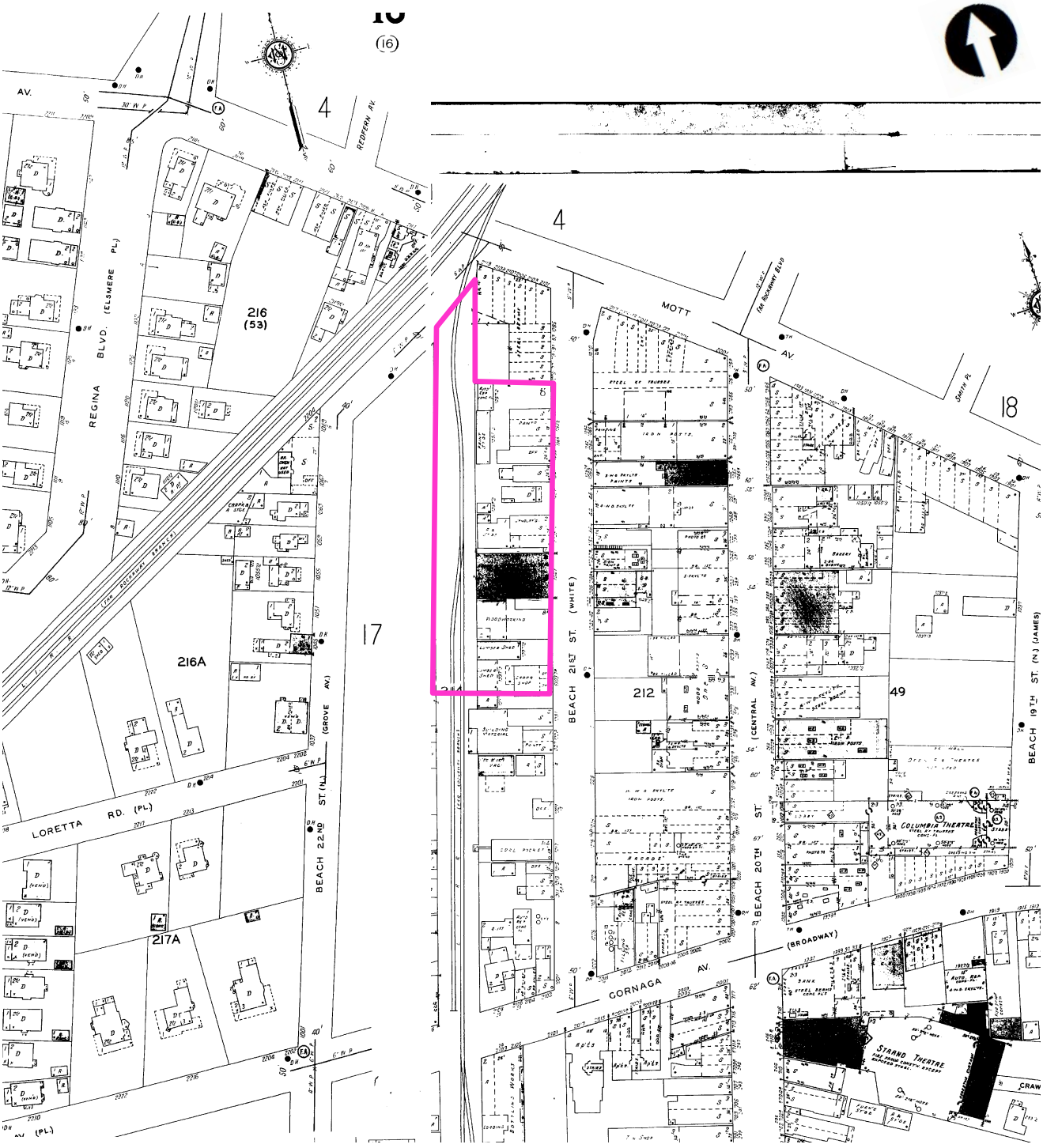


LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1933 SANBORN MAP

AKRF

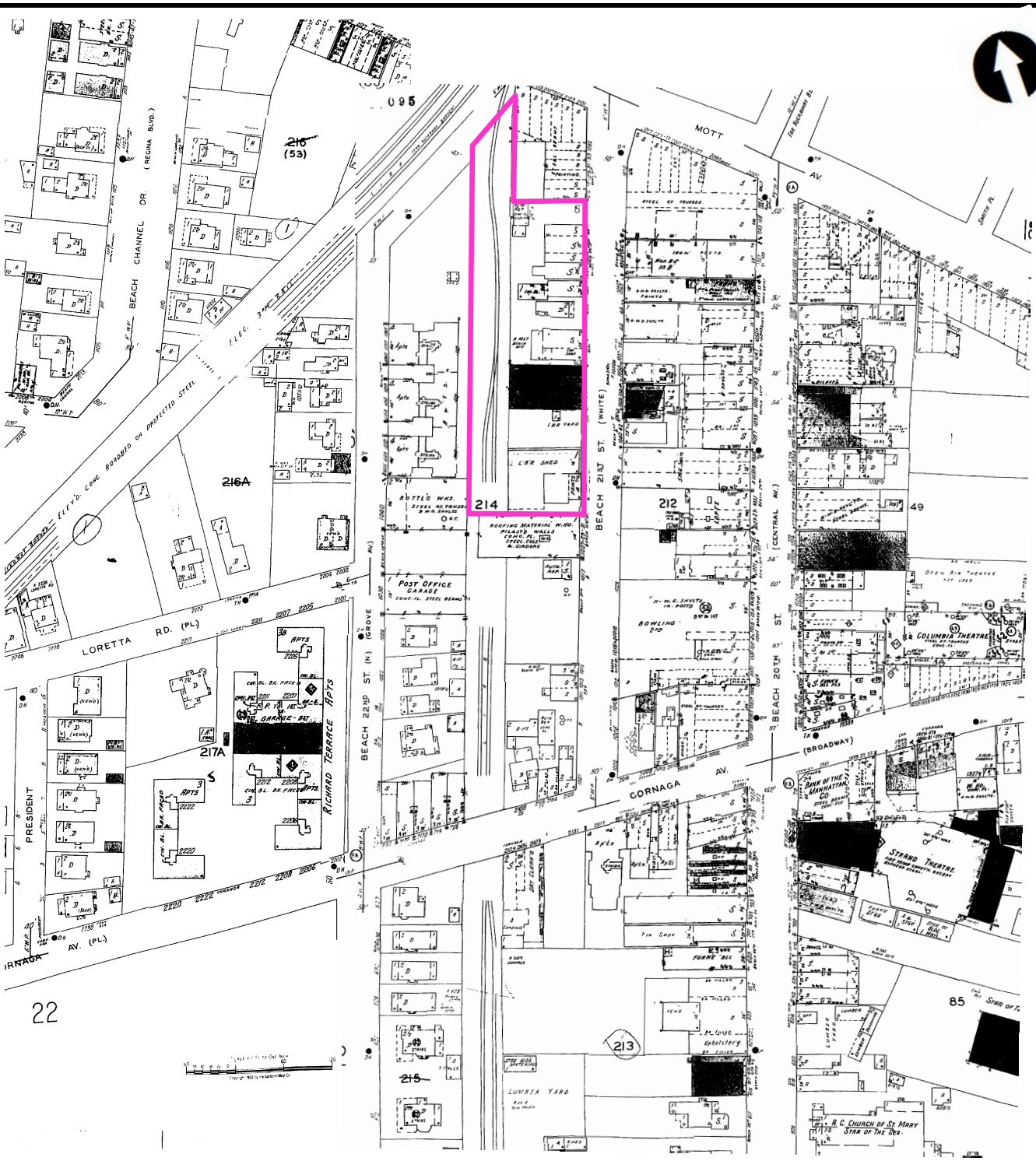
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\Hazmat\South Disposition Site Phase I\Sanborns



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1951 SANBORN MAP

AKRF

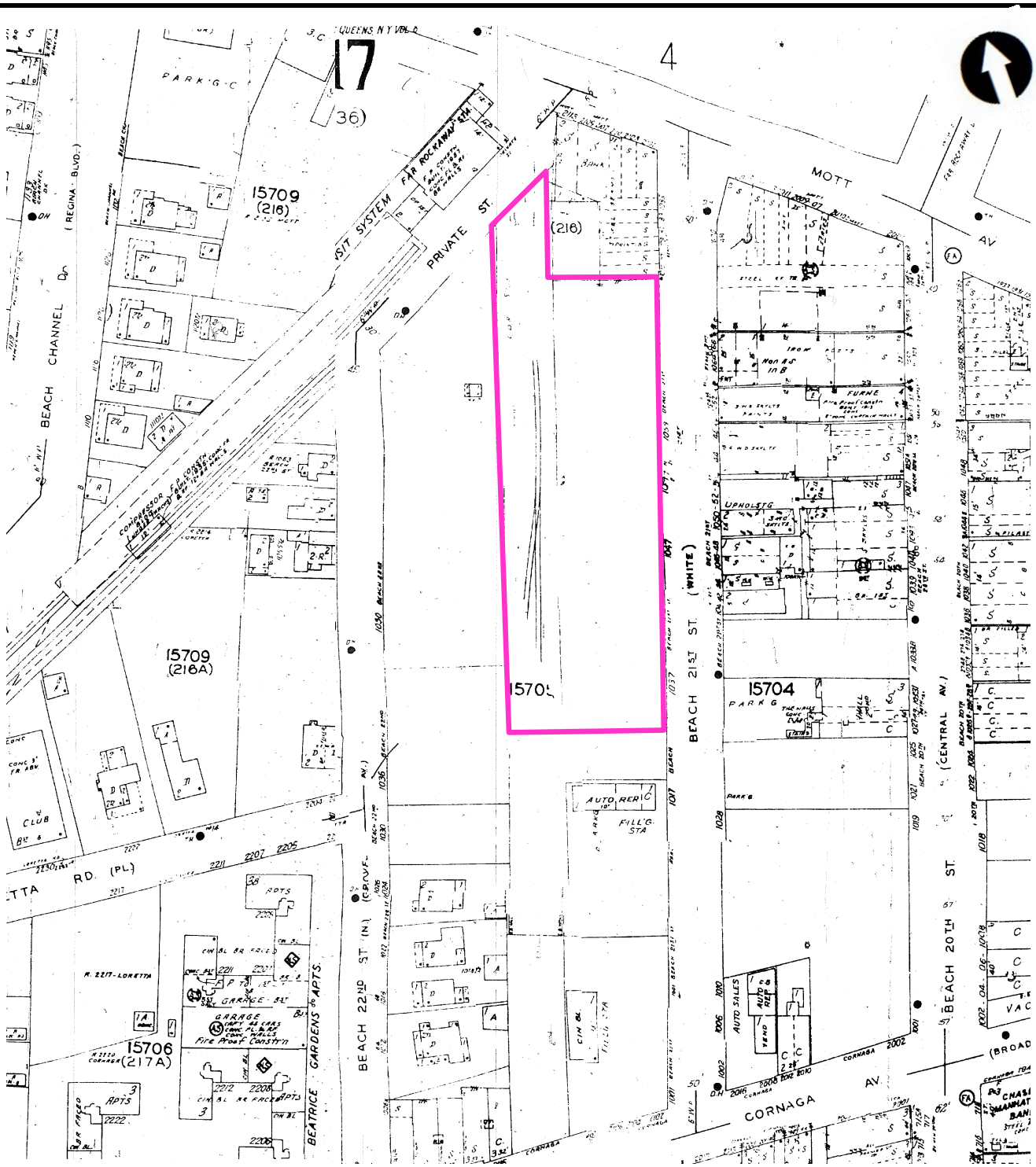
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\HazmatSouth Disposition Site Phase I\Sanborns



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1982 SANBORN MAP

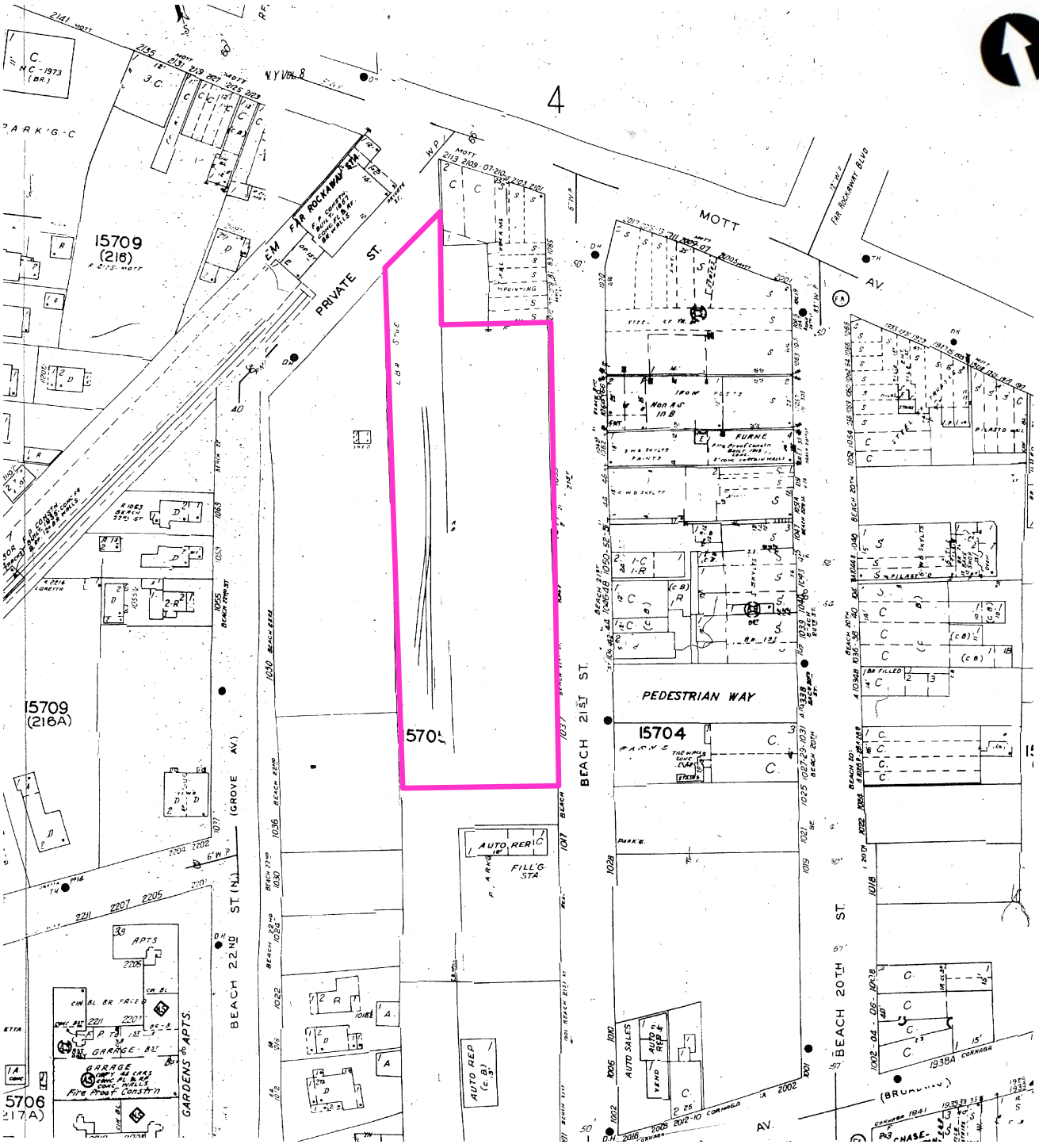
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\Hazmat\South Disposition Site Phase I\Sanborns



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

1990 SANBORN MAP

AKRF

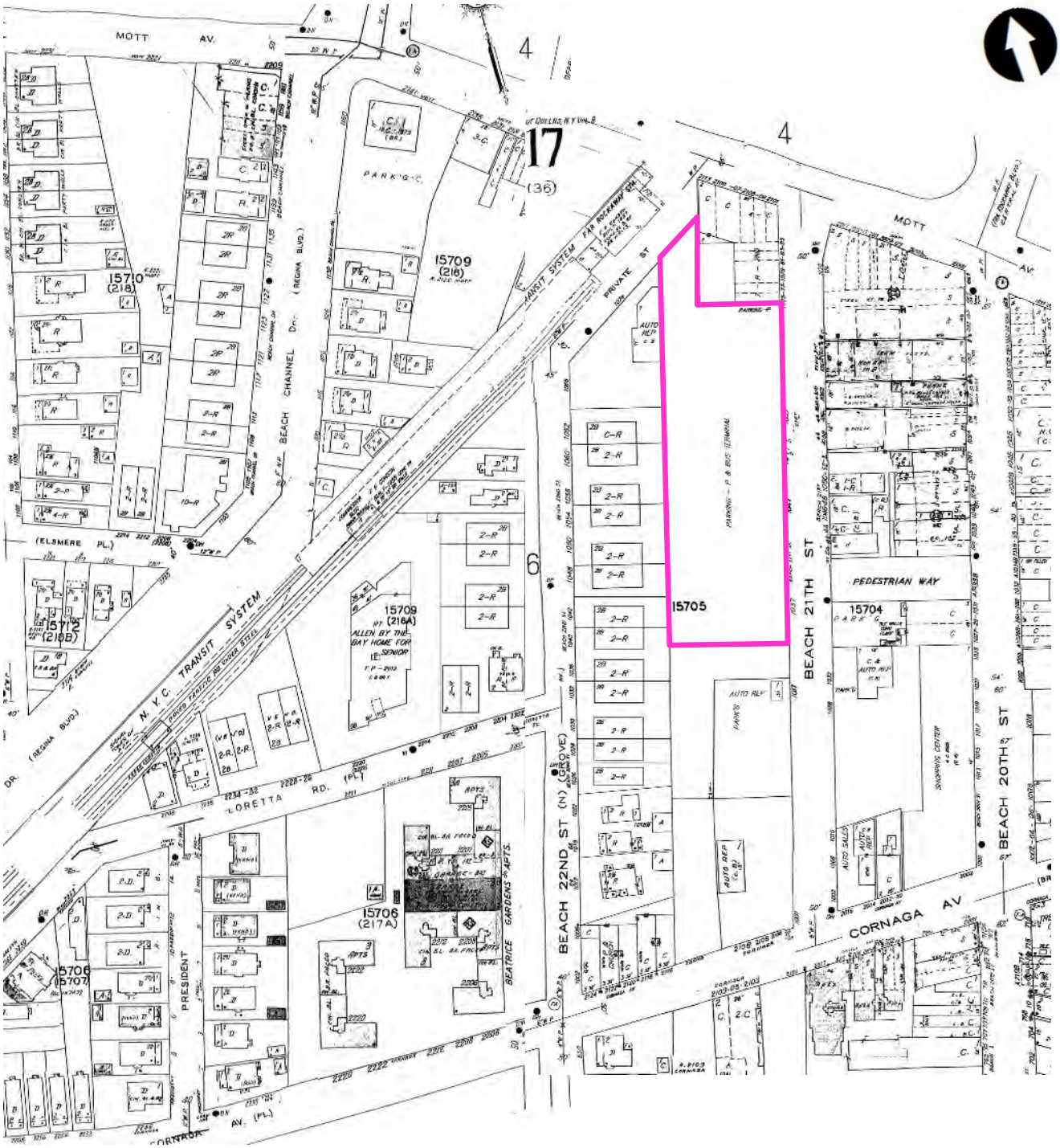
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\Hazmat\South Disposition Site Phase I\Sanborns



LEGEND:

Property Boundary

Far Rockaway Municipal Parking Field
Queens, New York

2015 SANBORN MAP

AKRF

Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
6.03.16

PROJECT No.
20552

FIGURE
Appx B

W:\Projects\20552 - EDC DOWNTOWN FAR ROCKAWAY\Technical\Hazmat\South Disposition Site Phase I\Sanborns

APPENDIX C

REGULATORY RECORDS REVIEW

TOXICS TARGETING

Phase I
Environmental Database Report

1037-1059 Beach 21st Street
Queens, NY 11691

May 18, 2016

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Who is Covered

This limited warranty is extended by Toxics Targeting, Inc. only to the original purchaser of the accompanying Environmental Report ("Report"). It may not be assigned to any other person.

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PLEASE REFER TO PAGES ONE AND FIVE FOR A DESCRIPTION OF SOME OF THE LIMITATIONS OF THIS ENVIRONMENTAL REPORT.

Table of Contents

Introduction

Toxics Targeting has combined environmental database searches, extensive regulatory analysis and sophisticated mapping techniques to produce your *Environmental Report.* It checks for the presence of 25 categories of government-reported toxic sites and provides detailed, up-to-date information on each identified site. The findings of your report are presented in an easy-to-understand format that:

1. ***Maps*** the approximate locations of selected government-reported toxic sites identified on or near a specified target address.

2. ***Estimates*** the distance and direction between the target address and each identified toxic site.

3. ***Reports*** air and water permit non-compliance and other regulatory violations.

4. ***Profiles*** some aspects of the usage, manufacture, storage, handling, transport or disposal of toxic chemicals at individual sites.

5. ***Summarizes*** some potential health effect information and drinking water standards for selected chemicals reported at individual sites.

The Three Sections Of Your Report

The first section highlights your report's findings by summarizing identified sites according to: **a)** distance intervals, **b)** direction, **c)** proximity to the target address and **d)** individual site categories. In addition, the locations of all identified toxic sites are illustrated on individual maps for each radius search distance used in your report. A close-up map illustrates the locations of all identified toxic sites, at the shortest radius search distance used in your report. Finally, a map of tax parcels and a table of selected information about those parcels are included.

The second section of your report contains *Toxic Site Profiles* that provide detailed information on each identified toxic site. The information in each *Toxic Site Profile* varies according to its source. Some toxic site categories have extensive information and some have limited information. All the information is updated on a regular basis.

The third section of the report contains appendices that identify: **1)** on-site spills reported to the national Emergency Response Notification System (ERNS), **2)** various toxic sites that cannot be mapped due to incomplete or erroneous addresses or other mapping problems, **3)** codes that characterize hazardous wastes reported at various facilities, **4)** methods used to map toxic sites identified in your report and **5)** information sources used in your report.

How to Use Your Report

- Check Table One to see the number of identified sites by distance intervals.

- Check Table Two to see identified sites sorted by direction.

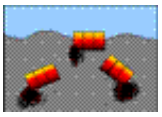
- Check Table Three to see identified sites ranked by proximity to the target address.

- Check Table Four to see identified sites sorted by site categories.

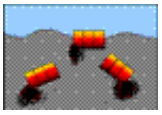
- Use Table Five to get info for the subject parcel and every parcel found on the Tax Parcel Map
- Refer to the various maps to see the locations of identified toxic sites. Refer to the *Toxic Site Profile* and *Appendix* sections for additional information.

Toxic Site Databases Analyzed In Your Report

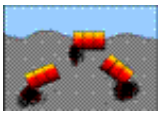
Search Radius

One-Mile 

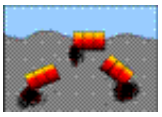
1) ***National Priority List for Federal Superfund Cleanup****:* a listing of sites known to pose environmental or health hazards that are being investigated or cleaned up under the Federal Superfund program.

Half-Mile 

2) ***Delisted National Priority List Sites****:* a listing of NPL sites that have been removed from the National Priority List.

One-Mile 

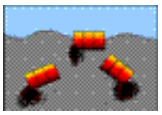
3) ***New York Inactive Hazardous Waste Disposal Site Registry****:* a state listing of sites that can pose environmental or public health hazards requiring investigation or clean up.

One-Mile 

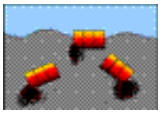
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYS DEC Inactive Haz. Waste Disposal Site Registry.

One-Mile 

5) ***New York and Federal RCRA Corrective Action Activity (CORRACTS):*** waste facilities with RCRA corrective action activity reported by the USEPA and NYS DEC.

Half-Mile 

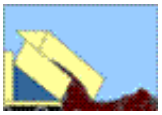
6) ***CERCLIS*** (Comprehensive Environmental Response, Compensation and Liability Information System): a federal listing of Non-NFRAP sites that can pose environmental or public health hazards requiring investigation or clean up.

Half-Mile 

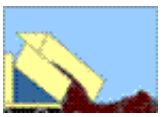
7) ***CERCLIS NFRAP:*** a federal listing of CERCLIS sites that have no further remedial action planned.

Half-Mile 

8) ***NYS & NYC Brownfield Program Sites****:* a listing of sites that are abandoned, idled or under-used industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.

Half-Mile 

9) ***New York Solid Waste Facilities Registry****:* active and inactive landfills, incinerators, transfer stations or other solid waste management facilities.

Half-Mile 

10) ***New York City 1934 Solid Waste Sites****:* a listing of solid waste disposal sites operated by New York City municipal authorities circa 1934.

Half-Mile 

11) ***New York and Federal Hazardous Waste Treatment, Storage or Disposal Facilities****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRIS). Also includes the following database:

- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Half-Mile 

12) ***Toxic Spills: active and inactive or closed*** spills reported to state environmental authorities, including *remediated* and *unremediated* leaking underground storage tanks. This database includes the following categories:

- Tank Failures
- Tank Test Failures
- Unknown Spill Cause or Other Spill Causes
- Miscellaneous Spill Causes

Eighth-Mile 

13) ***New York State Major Oil Storage Facilities****:* sites with more than a 400,000 gallon capacity for storing petroleum products.

Eighth-Mile 

14) ***New York State Petroleum Bulk Storage Facilities****:* sites with more than an 1,100 gallon capacity for storing petroleum products.

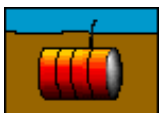
Eighth-Mile 

15) ***New York City Fire Dept Tank Data****:* tank data from 1997.

Eighth-Mile 

16) ***New York and Federal Hazardous Waste Generators and Transporters****:* sites reported by the NYS manifest system and the USEPA's Resource Conservation and Recovery Act Information System (RCRA). Also includes the following database:

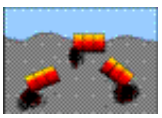
- ***RCRA violations:*** waste facilities with violations reported by the USEPA pursuant to the Resource Conservation and Recovery Act.

Eighth-Mile 

17) ***New York Chemical Bulk Storage Facilities****:* sites storing hazardous substances listed in 6 NYCRR Part 597 in aboveground tanks with capacities of 185 gallons or more and/or underground tanks of any size

Eighth-Mile 

18) ***Historic New York City Utility Sites (1890's to 1940's)****:* power generating stations, manufactured gas plants, gas storage facilities, maintenance yards and other gas and electric utility sites.

Half-Mile 

19) ***New York Hazardous Substance Disposal Site Draft Study****:* a state listing of sites contaminated with toxic substances that can pose environmental or public health hazards. These sites were not eligible for state clean up funding programs.

Eighth-Mile 

20) ***Federal Toxic Release Inventory Facilities****:* discharges of selected toxic chemicals to air, land, water or treatment facilities.

Eighth-Mile 

21) ***Federal Air Discharges****:* air pollution point sources monitored by U.S. EPA and/or state and local air regulatory agencies.

Eighth-Mile 

22) ***Federal Permit Compliance System Toxic Wastewater Discharges:*** permitted toxic wastewater discharges.

Eighth-Mile 

23) ***Federal Civil and Administrative Enforcement Docket****:* judiciary cases filed on behalf of the U. S. Environmental Protection Agency by the Department of Justice.

On-site only (250 ft) 

24) ***New York City Environmental Quality Review (CEQR) – E Designation Sites****:* parcels assigned a special environmental ("E") designation under the CEQR process. E designation requires specific protocols that must be followed.

Property only 

25) ***ERNS: Federal Emergency Response Notification System Spills****:* a listing of federally reported spills.

Limitations Of The Information In Your Report

The information presented in your *Environmental Report* has been obtained from various local, state and federal government agencies. Please be aware that: **1)** additional information on individual sites may be available, **2)** newly discovered sites are continually reported and **3)** all map locations are approximate. As a result, this report is intended to be the FIRST STEP in the process of identifying and evaluating possible environmental threats to specific properties and can only serve as a guide for conducting on-site visits or additional, more detailed toxic hazard research.

Toxics Targeting tries to ensure that the information in your report is presented accurately and with minimal alteration. Systematic changes are made to correct obvious address errors in order to allow sites to be mapped. Any address changes that are made are noted in the map information section at the top of each corresponding *Toxic Site Profile*. Some information that has been withheld by government authorities remains included in Toxic Site Profiles and is identified as archival information. Since the information presented in your report is not edited, please be aware that it can contain reporting errors or typographical mistakes made by the site owners/operators or government agencies that produced the information. Also please be aware of some other limitations of the information in your report:

- The digital map used by *Toxics Targeting* is the same one used by the U. S. Census or local authorities in New York City. While the map is generally accurate, no map is perfect. In addition, *Toxics Targeting's* mapping methods estimate where toxic site addresses are located if the address is not specifically designated. FOR THESE REASONS, ALL MAP LOCATIONS OF ADDRESSES AND REPORTED TOXIC SITES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE VERIFIED BY ON-SITE VISITS;

- UNDISCOVERED, UNREPORTED OR UNMAPPABLE TOXIC SITES MIGHT NOT BE IDENTIFIED BY THIS REPORT'S CHECK OF 25 TOXIC SITE CATEGORIES. TOXIC SITES REPORTED IN OTHER GOVERNMENT DATABASES MIGHT ALSO EXIST. FOR THESE REASONS, YOUR REPORT MIGHT NOT IDENTIFY ALL THE TOXIC SITES THAT EXIST IN THE AREA IT SEARCHES;

- The appendix of your report contains a listing of sites that could not be mapped due to incomplete or erroneous address information or other mapping problems. This listing includes unmappable toxic sites in the zip codes searched for the report as well as toxic sites without zip codes reported in the same county. IF YOU WOULD LIKE INFORMATION ON ANY OF THE LISTED SITES, PLEASE CONTACT *TOXICS TARGETING AND REFER TO THE SITE ID NUMBER.*

- New York State Department of Environmental Conservation Remediation Site Borders are approximate and may not align with tax parcel boundaries mapped by local authorities or the digital map used by the US Census Bureau. As a result, Remediation Site Borders may overlap parcels that do not involve site remediation activities. Selected parcels also can involve multiple Remediation Site Borders. Refer to individual site profiles for more information. Sites without profiles include potential new sites or sites that have not yet been publicly listed by DEC.

- Some toxic sites identified in your report may be classified as **known hazards**. Most of the toxic sites identified in your report involve **potential hazards** related to the on-site use, manufacture, handling, storage, transport or disposal of toxic chemicals. Some of the toxic sites identified in your report may be the addresses of parties responsible for toxic sites located elsewhere. YOU SHOULD ONLY CONCLUDE THAT TOXIC HAZARDS ACTUALLY EXIST AT A SPECIFIC SITE WHEN GOVERNMENT AUTHORITIES MAKE THAT DETERMINATION OR WHEN THAT CONCLUSION IS FULLY DOCUMENTED BY THE FINDINGS OF AN APPROPRIATE SITE INVESTIGATION UNDERTAKEN BY LICENSED PROFESSIONALS;

- Compass directions and distances are approximate. Compass directions are calculated from the subject property address to the mapped location of each identified toxic site. The compass direction does not necessarily refer to the closest property boundary of an identified toxic site. The compass direction also can vary substantially for toxic sites that are located very close to the subject property address.

- The information presented in your report is a summary of the information that *Toxics Targeting* obtains from government agencies on reported toxic sites. YOU MAY BE ABLE TO OBTAIN ADDITIONAL INFORMATION ABOUT REPORTED SITES WITH THE FREEDOM OF INFORMATION REQUEST FORM LETTERS THAT ARE PROVIDED ON THE INSIDE OF THE BACK COVER.

Section One:

Report Summary

- *Table One: Number of Identified Toxic Sites By Distance Interval*
- *Table Two: Identified Toxic Sites By Direction*
- *Table Three: Identified Toxic Sites By Category*
- *Table Four: Identified Toxic Sites By Proximity*
- *Map One: One-Mile Radius Map*
- *Map Two: Half-Mile Radius Map*
- *Map Three: Eighth-Mile Radius Map*
- *Map Four: Eighth-Mile Radius Close up Map*
- *Map Five: Tax Parcel Map*
- *Table Five: Tax Parcel Map Information Table*

NUMBER OF IDENTIFIED SITES BY DISTANCE INTERVAL

Database Searched	0 − 100 ft	100 ft − 1/8 mi	1/8 mi − 1/4 mi	1/4 mi − 1/2 mi	1/2 mi − 1 mi	Site Category Totals
ASTM−Required 1 Mile Search						
National Priority List (NPL) Sites	0	0	0	0	0	0
NYS Inactive Hazardous Waste Disposal Site Registry	0	0	0	0	2	2
NYS Inactive Haz Waste Disposal Site Registry Qualifying	0	0	0	0	0	0
RCRA Corrective Action (CORRACTS) Sites	0	0	0	0	0	0
ASTM−Required 1/2 Mile Search						
Delisted National Priority List (NPL) Sites	0	0	0	0	Not searched	0
CERCLIS Superfund Non−NFRAP Sites	0	0	0	0	Not searched	0
CERCLIS Superfund NFRAP Sites	0	0	0	0	Not searched	0
Brownfields Sites						
Voluntary Cleanup Program	0	0	0	0	Not searched	0
Environmental Restoration Program	0	0	0	0	Not searched	0
Brownfield Cleanup Program	0	0	0	0	Not searched	0
NYC Voluntary Cleanup Program	0	0	0	0	Not searched	0
NYSDEC Solid Waste Facilities / Landfills	0	0	3	1	Not searched	4
RCRA Hazardous Waste Treatment, Storage, Disposal Sites	0	0	0	0	Not searched	0
NYS Toxic Spills						
Active Tank Failures	0	0	0	0	Not searched	0
Active Tank Test Failures	0	0	1	0	Not searched	1
Active Spills − Unknown / Other Causes	0	0	0	0	Not searched	0
Active Spills − Miscellaneous Causes	0	0	0(1)	0(4)	Not searched	0(5)
Closed Tank Failures	0	0	0	4	Not searched	4
Closed Tank Test Failures	0	0	5	6	Not searched	11
Closed Spills − Unknown / Other Causes	0	2	3	16	Not searched	21
Closed Spills − Miscellaneous Causes	0	4	2(17)	6(56)	Not searched	12(73)
ASTM−Required Property & Adjacent Property (1/8 Mile Search)						
NYS Major Oil Storage Facilities	0	0	Not searched	Not searched	Not searched	0
Local & State Petroleum Bulk Storage Sites	0	17	Not searched	Not searched	Not searched	17
RCRA Hazardous Waste Generators & Transporters	0	6	Not searched	Not searched	Not searched	6
NYS Chemical Bulk Storage Sites	0	0	Not searched	Not searched	Not searched	0
Historic Utility Facilities	0	0	Not searched	Not searched	Not searched	0
ASTM−Required On−Site Only Search						
NYC Environmental Quality Review Requirements ("E") Sites*	0	0	Not searched	Not searched	Not searched	0
Emergency Response Notification System (ERNS)	0	Not searched	Not searched	Not searched	Not searched	0
Institutional Controls / Engineering Controls (IC/EC)	See databases for NPL, CERCLIS, Inactive Hazardous Waste Disposal Site Registry and Brownfield Sites.					
ASTM−Required Databases Distance Interval Totals	**0**	**29**	**14(18)**	**33(60)**	**2**	**78(78)**

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

* NYC Environmental Quality Review Requirements ("E") Sites were searched at 250 feet.

NOTE: Table continues on next page.

Non−ASTM Databases 1/2 Mile Search						
1934 NYC Municipal Waste Landfills	0	0	0	0	Not searched	0
Hazardous Substance Waste Disposal Sites	0	0	0	0	Not searched	0
Non−ASTM Databases 1/8 Mile Search						
Toxic Release Inventory Sites (TRI)	0	0	Not searched	Not searched	Not searched	0
Permit Compliance System (PCS) Toxic Wastewater Discharges	0	0	Not searched	Not searched	Not searched	0
Air Discharges	0	0	Not searched	Not searched	Not searched	0
Civil & Administrative Enforcement Docket Facilities	0	0	Not searched	Not searched	Not searched	0
Non−ASTM Databases Distance Interval Totals	**0**	**0**	**0**	**0**	**Not Searched**	**0**
Distance Interval Totals	***0***	***29***	***14(18)***	***33(60)***	***2***	***78(78)***

Numbers in ( ) indicate spills not mapped and profiled in this report, and are listed at the end of the active and closed spills sections. See these lists for a description of the parameters involved with identifying these spills.

Identified Toxic Sites by Direction

1037−1059 Beach 21st Street
Queens, NY 11691

* Compass directions can vary substantially for sites located very close to the subject property address.

Sites less than 100 feet from subject property sorted by distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
No sites found less than 100 feet from subject property				

Sites between 100 ft and 660 ft from the subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
46	FAR ROCKAWAY SHOPPING MALL	MOTT AVE., BETWEEN B. CHANNEL DRIVE & CENTRAL AVE	326 feet to the N	Closed Status Spill (Misc. Spill Cause)
73	MTA NYCT − MOTT AVENUE STATION − A	MOTT AVE & BEACH 22ND ST	326 feet to the N	Hazardous Waste Generator/Transporter
45	DRUM RUN	BEACH 21ST ST AND MOTT AVE	293 feet to the NNE	Closed Status Spill (Misc. Spill Cause)
74	SNOW WHITE CLEANERS	2088 MOTT AVENUE	330 feet to the NNE	Hazardous Waste Generator/Transporter
67	INT.PENTECOSTAL MISSION	16−18 CENTRAL AVE	613 feet to the NE	Petroleum Bulk Storage Site
68	ACTION CENTER FOR DEUCATION & COMMUNITY DEV.	16−12 CENTRAL AVENUE	651 feet to the NE	Petroleum Bulk Storage Site
69	SEAGRIT BAR & GRILL INC.	1612 CENTRAL AVE	651 feet to the NE	Petroleum Bulk Storage Site
59	SY YOUNG BAY	20−11 MOTT AVE	263 feet to the ENE	Petroleum Bulk Storage Site
65	ENGINE 328 AND ENGINE 264	16−15 CENTRAL AVENUE	560 feet to the ENE	Petroleum Bulk Storage Site
47	SPILL NUMBER 0000082	1920 MOTT AVE	623 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
70	ROCKAWAY COMPANY	19−20 MOTT AVENUE	655 feet to the ENE	Petroleum Bulk Storage Site
71	JP MORGAN CHASE	19−12 MOTT AVENUE	655 feet to the ENE	Petroleum Bulk Storage Site
72	ROCKAWAY CO	19−14 MOTT AVE	655 feet to the ENE	Petroleum Bulk Storage Site
57	BAYMART (RETAIL STORE)	1057 BEACH 20TH STREET	223 feet to the E	Petroleum Bulk Storage Site
58	D−MART INC	1057 BEACH 20 ST	223 feet to the E	Petroleum Bulk Storage Site
62	ROCKAWAY CO	19−31 MOTT AVENUE	396 feet to the E	Petroleum Bulk Storage Site
44	OPPOSITE 1044 BEACH 21 ST	(MUNICPLE PARKING LOT)	145 feet to the SE*	Closed Status Spill (Misc. Spill Cause)
60	OWEN AUTO SERVICE	1017 BEACH 21ST STREET	319 feet to the S	Petroleum Bulk Storage Site
61	O & L AUTO REPAIRS	1017 BEACH 21 ST	319 feet to the S	Petroleum Bulk Storage Site
63	RCL SERVICE CENTER	1009 BEACH 21ST STREET	514 feet to the S	Petroleum Bulk Storage Site
64	D.J.S.SERVICE CORP.	1009 BEACH 21 ST	514 feet to the S	Petroleum Bulk Storage Site
23	VEHICLE REPAIR SHOP	10−09 CORNAGA AVE	516 feet to the S	Closed Status Spill (Unk/Other Cause)
76	NYNEX	CORNAGA AVE & BEAD 21ST	600 feet to the S	Hazardous Waste Generator/Transporter
66	2206 REALTY CORP	22−06 CORNAGA AVENUE	593 feet to the SW	Petroleum Bulk Storage Site

56	NOBO CORPORATION	10−74 BEACH 22ND STREET	124 feet to the NW*	Petroleum Bulk Storage Site
78	MYLES CLEANER	11−59 BEACH CHANNEL DRIVE	650 feet to the NW	Hazardous Waste Generator/Transporter
75	GEORGE L CHRIS CLEANERS	2140 MOTT AVENUE	531 feet to the NNW	Hazardous Waste Generator/Transporter
24	UNKNOWN	1210 BEACH CHANNEL DR	562 feet to the NNW	Closed Status Spill (Unk/Other Cause)
77	BELL ATLANTIC−NY	MOTT AVE & BEACH CHANNEL DR MH	617 feet to the NNW	Hazardous Waste Generator/Transporter

Sites equal to or greater than 660 ft from subject property sorted by direction and distance

Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
43	MOTT BASIN	SHERIDAN BLVD	2493 feet to the N	Closed Status Spill (Unk/Other Cause)
1	K − INWOOD HOLDER	W. OF SHERIDAN BLVD. & S. OF NASSAU AVE.	3260 feet to the N	NYSDEC Inactive Haz Waste Disposal Site
4	JACK COLETTA INC./COLETTA RECYCLING	1629 REDFERN AVE	1160 feet to the NNE	Solid Waste Facility
5	REDFERN RECYCLING LLC	1629 REDFERN AVENUE	1160 feet to the NNE	Solid Waste Facility
6	METROPOLITAN RUBBER CO.	1406 AUGUSTINA AVENUE	1326 feet to the NNE	Solid Waste Facility
28	LIRR	NAMEOKE ST/REDFERN AVE	1489 feet to the NNE	Closed Status Spill (Unk/Other Cause)
30	INWOOD STATION − LIRR	RED FERN AVE	1573 feet to the NNE	Closed Status Spill (Unk/Other Cause)
51	LIRR	LIRR/INWOOD STA/REDFERN	1573 feet to the NNE	Closed Status Spill (Misc. Spill Cause)
40	SPILL NUMBER 9903890	13−02 REDFERN AVE	2377 feet to the NNE	Closed Status Spill (Unk/Other Cause)
41	REDFERN HOUSING −NYCHA	14−68 BEACH CHANNEL DR	2377 feet to the NNE	Closed Status Spill (Unk/Other Cause)
12	13−11 BAYPORT PLACE	13−11 BAYPORT PLACE	1043 feet to the NE	Closed Status Tank Test Failure
49	NYNEX BUILDING	13−11 BAYPORT PLACE	1043 feet to the NE	Closed Status Spill (Misc. Spill Cause)
9	12−13 NELSON ST	12−13 NELSON ST	1664 feet to the NE	Closed Status Tank Failure
10	12−13 NEILSON ST	12−13 NEILSON ST	1664 feet to the NE	Closed Status Tank Failure
53	PS253Q	1307 CENTRAL AVE	1922 feet to the NE	Closed Status Spill (Misc. Spill Cause)
31	CONSTRUCTION	1152 NEILSON ST	1842 feet to the ENE	Closed Status Spill (Unk/Other Cause)
42	1130 BEACH 9TH ST	1130 BEACH 9TH ST	2423 feet to the ENE	Closed Status Spill (Unk/Other Cause)
18	APART	10−14 NEILSON STREET	1854 feet to the E	Closed Status Tank Test Failure
3	AUTO MAVEN DENT DR INC	1016 BEACH 19TH STREET	796 feet to the ESE	Solid Waste Facility
26	HI AUTO SERVICE	18−11 MOTT AVENUE	1140 feet to the ESE	Closed Status Spill (Unk/Other Cause)
13	101ST POLICE PRECINT	16−12 MOTT AVENUE	1184 feet to the ESE	Closed Status Tank Test Failure
17	APARTMENT BUILDING TTF	15−02 MOTT AVENUE	1521 feet to the ESE	Closed Status Tank Test Failure
29	15−02 MOTT AVENUE	15002 MOTT AVENUE	1521 feet to the ESE	Closed Status Spill (Unk/Other Cause)
52	K MNGT BUILDINGS	13−22 CAFFREY AVE	1893 feet to the SE	Closed Status Spill (Misc. Spill Cause)
36	BEHIND THIS ADDRESS	13−25 CAFFREY AVE	2066 feet to the SE	Closed Status Spill (Unk/Other Cause)
38	RESIDENCE	2 WILLIAMS COURT	2153 feet to the SE	Closed Status Spill (Unk/Other Cause)
14	CLOSED−LACKOF RECENT INFO	19020 NEW HAVEN AVE.	1189 feet to the SSE	Closed Status Tank Test Failure
15	CLOSED−LACKOF RECENT INFO	19−20 NEW HAVEN AVENUE	1189 feet to the SSE	Closed Status Tank Test Failure
16	SAINT MARYS STAR OF SEA	19−20 NEW HAVEN AVENUE	1189 feet to the SSE	Closed Status Tank Test Failure
19	327 BCH 19TH ST	327 BEACH 19TH STREET	1880 feet to the S	Closed Status Tank Test Failure

20	ST JOHNS EPISCOPAL HOSPIT	327 BEACH 19TH ST	1880 feet to the S	Closed Status Tank Test Failure
21	APARTMENT BLDG.	20−30 ELK DR	1915 feet to the S	Closed Status Tank Test Failure
7	APT BUILDING TTF	22−11 NEW HAVEN AVE	1243 feet to the SSW	Active Tank Test Failure
54	SANDY FOLLOW UP	431 BEACH 122ND ST	1998 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
22	KINGDOM HALL JEHOVA WIT	2360 BROOKHAVEN AVE	1924 feet to the SW	Closed Status Tank Test Failure
35	PUBLIC SCHOOL 215	535 BRIAR PL	1998 feet to the SW	Closed Status Spill (Unk/Other Cause)
25	PRIVATE HOME−SEWAGE	2254 CORNAGA AVE	1034 feet to the WSW	Closed Status Spill (Unk/Other Cause)
32	HOME	1035 DICKINS STREET	1900 feet to the W	Closed Status Spill (Unk/Other Cause)
33	1053 DICKENS AVENUE	1053 DICKONS AVENUE	1928 feet to the W	Closed Status Spill (Unk/Other Cause)
27	STREET SPILL?	11−43 MCBRIDE ST	1294 feet to the WNW	Closed Status Spill (Unk/Other Cause)
48	2230−40 MOTT AVENUE	2230−40 MOTT AVENUE	1011 feet to the NW	Closed Status Spill (Misc. Spill Cause)
8	22−88 MOTT AVENUE	22−88 MOTT AVENUE	1469 feet to the NW	Closed Status Tank Failure
34	PRIVATE RESD	13−77 GIPSON ST	1984 feet to the NW	Closed Status Spill (Unk/Other Cause)
50	1365 CHANDLER ST (HURRICANE SANDY)	1365 CHANDLER ST	1476 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
11	NEXT TO	22−54 NAMEOKE AVE.	1822 feet to the NNW	Closed Status Tank Failure
37	CANAL	22−55 BATTERY ROAD	2117 feet to the NNW	Closed Status Spill (Unk/Other Cause)
55	MEK BUTTERY RD	BATTERY RD	2120 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
39	IN ROADWAY	BATTERY RD & MCBRIDE ST	2212 feet to the NNW	Closed Status Spill (Unk/Other Cause)
2	175 ROGER AVENUE	175 ROGER AVENUE	4156 feet to the NNW	NYSDEC Inactive Haz Waste Disposal Site

Identified Toxic Sites by Category

1037−1059 Beach 21st Street
Queens, NY 11691

* Compass directions can vary substantially for sites located very close to the subject property address.

NYSDEC Inactive Haz. Waste Disposal Site Registry −− Total Sites − 2

Database searched at 1 MILE − ASTM required search distance: 1 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	130121	K − INWOOD HOLDER	W. OF SHERIDAN BLVD. & S. OF NASSAU AVE.	3260 feet to the N
2	130164	175 ROGER AVENUE	175 ROGER AVENUE	4156 feet to the NNW

Solid Waste Facilities −− Total Sites − 4

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
3	NY40000011865	AUTO MAVEN DENT DR INC	1016 BEACH 19TH STREET	796 feet to the ESE
4	NY00000000355	JACK COLETTA INC./COLETTA RECYCLING	1629 REDFERN AVE	1160 feet to the NNE
5	NY40000116947	REDFERN RECYCLING LLC	1629 REDFERN AVENUE	1160 feet to the NNE
6	NY00000000356	METROPOLITAN RUBBER CO.	1406 AUGUSTINA AVENUE	1326 feet to the NNE

Active Tank Test Failures −− Total Sites − 1

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
7	1304503	APT BUILDING TTF	22−11 NEW HAVEN AVE	1243 feet to the SSW

Closed Status Tank Failures −− Total Sites − 4

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
8	9809570	22−88 MOTT AVENUE	22−88 MOTT AVENUE	1469 feet to the NW
9	9303657	12−13 NELSON ST	12−13 NELSON ST	1664 feet to the NE
10	9303442	12−13 NEILSON ST	12−13 NEILSON ST	1664 feet to the NE
11	0509035	NEXT TO	22−54 NAMEOKE AVE.	1822 feet to the NNW

Closed Status Tank Test Failures −− Total Sites − 11

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
12	8801169	13−11 BAYPORT PLACE	13−11 BAYPORT PLACE	1043 feet to the NE
13	9412991	101ST POLICE PRECINT	16−12 MOTT AVENUE	1184 feet to the ESE
14	8706832	CLOSED−LACKOF RECENT INFO	19020 NEW HAVEN AVE.	1189 feet to the SSE
15	8706791	CLOSED−LACKOF RECENT INFO	19−20 NEW HAVEN AVENUE	1189 feet to the SSE
16	0307675	SAINT MARYS STAR OF SEA	19−20 NEW HAVEN AVENUE	1189 feet to the SSE
17	0904364	APARTMENT BUILDING TTF	15−02 MOTT AVENUE	1521 feet to the ESE
18	0800413	APART	10−14 NEILSON STREET	1854 feet to the E
19	9013017	327 BCH 19TH ST	327 BEACH 19TH STREET	1880 feet to the S
20	0204866	ST JOHNS EPISCOPAL HOSPIT	327 BEACH 19TH ST	1880 feet to the S
21	0403513	APARTMENT BLDG.	20−30 ELK DR	1915 feet to the S
22	9914058	KINGDOM HALL JEHOVA WIT	2360 BROOKHAVEN AVE	1924 feet to the SW

Closed Status Spills (Unknown Causes & Other Causes) −− Total Sites − 21

Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
23	1304092	VEHICLE REPAIR SHOP	10−09 CORNAGA AVE	516 feet to the S
24	9702230	UNKNOWN	1210 BEACH CHANNEL DR	562 feet to the NNW
25	0713846	PRIVATE HOME−SEWAGE	2254 CORNAGA AVE	1034 feet to the WSW
26	9707778	HI AUTO SERVICE	18−11 MOTT AVENUE	1140 feet to the ESE
27	0800735	STREET SPILL?	11−43 MCBRIDE ST	1294 feet to the WNW
28	0100123	LIRR	NAMEOKE ST/REDFERN AVE	1489 feet to the NNE
29	9304779	15−02 MOTT AVENUE	15002 MOTT AVENUE	1521 feet to the ESE
30	9802015	INWOOD STATION − LIRR	RED FERN AVE	1573 feet to the NNE
31	0903973	CONSTRUCTION	1152 NEILSON ST	1842 feet to the ENE

32	0613102	HOME	1035 DICKINS STREET	1900 feet to the W
33	9609624	1053 DICKENS AVENUE	1053 DICKONS AVENUE	1928 feet to the W
34	1006122	PRIVATE RESD	13−77 GIPSON ST	1984 feet to the NW
35	0108314	PUBLIC SCHOOL 215	535 BRIAR PL	1998 feet to the SW
36	0512048	BEHIND THIS ADDRESS	13−25 CAFFREY AVE	2066 feet to the SE
37	0606146	CANAL	22−55 BATTERY ROAD	2117 feet to the NNW
38	0412964	RESIDENCE	2 WILLIAMS COURT	2153 feet to the SE
39	9903496	IN ROADWAY	BATTERY RD & MCBRIDE ST	2212 feet to the NNW
40	9903890	SPILL NUMBER 9903890	13−02 REDFERN AVE	2377 feet to the NNE
41	9510331	REDFERN HOUSING −NYCHA	14−68 BEACH CHANNEL DR	2377 feet to the NNE
42	9107338	1130 BEACH 9TH ST	1130 BEACH 9TH ST	2423 feet to the ENE
43	9508409	MOTT BASIN	SHERIDAN BLVD	2493 feet to the N

Closed Status Spills (Miscellaneous Spill Causes) −− Total Sites − 12 **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
44	0408292	OPPOSITE 1044 BEACH 21 ST	(MUNICPLE PARKING LOT)	145 feet to the SE*
45	1204054	DRUM RUN	BEACH 21ST ST AND MOTT AVE	293 feet to the NNE
46	0809169	FAR ROCKAWAY SHOPPING MALL	MOTT AVE., BETWEEN B. CHANNEL DRIVE & CENTRAL AVE	326 feet to the N
47	0000082	SPILL NUMBER 0000082	1920 MOTT AVE	623 feet to the ENE
48	9710254	2230−40 MOTT AVENUE	2230−40 MOTT AVENUE	1011 feet to the NW
49	9608080	NYNEX BUILDING	13−11 BAYPORT PLACE	1043 feet to the NE
50	1213364	1365 CHANDLER ST (HURRICANE SANDY)	1365 CHANDLER ST	1476 feet to the NNW
51	9201639	LIRR	LIRR/INWOOD STA/REDFERN	1573 feet to the NNE
52	8908672	K MNGT BUILDINGS	13−22 CAFFREY AVE	1893 feet to the SE
53	0312969	PS253Q	1307 CENTRAL AVE	1922 feet to the NE
54	1208861	SANDY FOLLOW UP	431 BEACH 122ND ST	1998 feet to the SSW
55	8600474	MEK BUTTERY RD	BATTERY RD	2120 feet to the NNW

Petroleum Bulk Storage Sites −− Total Sites − 17 **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
56	2−602577	NOBO CORPORATION	10−74 BEACH 22ND STREET	124 feet to the NW*
57	2−607761	BAYMART (RETAIL STORE)	1057 BEACH 20TH STREET	223 feet to the E
58	NY03001	D−MART INC	1057 BEACH 20 ST	223 feet to the E
59	NY09596	SY YOUNG BAY	20−11 MOTT AVE	263 feet to the ENE
60	2−604688	OWEN AUTO SERVICE	1017 BEACH 21ST STREET	319 feet to the S
61	NY07570	O & L AUTO REPAIRS	1017 BEACH 21 ST	319 feet to the S
62	2−309060	ROCKAWAY CO	19−31 MOTT AVENUE	396 feet to the E
63	2−604080	RCL SERVICE CENTER	1009 BEACH 21ST STREET	514 feet to the S
64	NY03011	D.J.S.SERVICE CORP.	1009 BEACH 21 ST	514 feet to the S
65	2−358037	ENGINE 328 AND ENGINE 264	16−15 CENTRAL AVENUE	560 feet to the ENE
66	2−117773	2206 REALTY CORP	22−06 CORNAGA AVENUE	593 feet to the SW
67	NY04986	INT.PENTECOSTAL MISSION	16−18 CENTRAL AVE	613 feet to the NE
68	2−610219	ACTION CENTER FOR DEUCATION & COMMUNITY DEV.	16−12 CENTRAL AVENUE	651 feet to the NE
69	NY08938	SEAGRIT BAR & GRILL INC.	1612 CENTRAL AVE	651 feet to the NE
70	2−159263	ROCKAWAY COMPANY	19−20 MOTT AVENUE	655 feet to the ENE
71	2−612280	JP MORGAN CHASE	19−12 MOTT AVENUE	655 feet to the ENE
72	NY08576	ROCKAWAY CO	19−14 MOTT AVE	655 feet to the ENE

Hazardous Waste Generators, Transporters −− Total Sites − 6 **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
73	NYR000150961	MTA NYCT − MOTT AVENUE STATION − A	MOTT AVE & BEACH 22ND ST	326 feet to the N
74	NYD982180663	SNOW WHITE CLEANERS	2088 MOTT AVENUE	330 feet to the NNE
75	NYD077444206	GEORGE L CHRIS CLEANERS	2140 MOTT AVENUE	531 feet to the NNW

76	NYP000932921	NYNEX	CORNAGA AVE & BEAD 21ST	600 feet to the S
77	NYP000940486	BELL ATLANTIC−NY	MOTT AVE & BEACH CHANNEL DR MH	617 feet to the NNW
78	NYD981141468	MYLES CLEANER	11−59 BEACH CHANNEL DRIVE	650 feet to the NW

Identified Toxic Sites by Proximity

1037−1059 Beach 21st Street, Queens, NY 11691

* Compass directions can vary substantially for sites located very close to the subject property address.

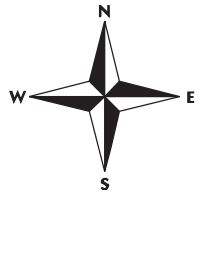
Map Id#	Site Name	Site Street	Approximate Distance & Direction From Property	Toxic Site Category
56	NOBO CORPORATION	10−74 BEACH 22ND STREET	124 feet to the NW*	Petroleum Bulk Storage Site
44	OPPOSITE 1044 BEACH 21 ST	(MUNICPLE PARKING LOT)	145 feet to the SE*	Closed Status Spill (Misc. Spill Cause)
57	BAYMART (RETAIL STORE)	1057 BEACH 20TH STREET	223 feet to the E	Petroleum Bulk Storage Site
58	D−MART INC	1057 BEACH 20 ST	223 feet to the E	Petroleum Bulk Storage Site
59	SY YOUNG BAY	20−11 MOTT AVE	263 feet to the ENE	Petroleum Bulk Storage Site
45	DRUM RUN	BEACH 21ST ST AND MOTT AVE	293 feet to the NNE	Closed Status Spill (Misc. Spill Cause)
60	OWEN AUTO SERVICE	1017 BEACH 21ST STREET	319 feet to the S	Petroleum Bulk Storage Site
61	O & L AUTO REPAIRS	1017 BEACH 21 ST	319 feet to the S	Petroleum Bulk Storage Site
46	FAR ROCKAWAY SHOPPING MALL	MOTT AVE., BETWEEN B. CHANNEL DRIVE & CENTRAL AVE	326 feet to the N	Closed Status Spill (Misc. Spill Cause)
73	MTA NYCT − MOTT AVENUE STATION − A	MOTT AVE & BEACH 22ND ST	326 feet to the N	Hazardous Waste Generator/Transporter
74	SNOW WHITE CLEANERS	2088 MOTT AVENUE	330 feet to the NNE	Hazardous Waste Generator/Transporter
62	ROCKAWAY CO	19−31 MOTT AVENUE	396 feet to the E	Petroleum Bulk Storage Site
63	RCL SERVICE CENTER	1009 BEACH 21ST STREET	514 feet to the S	Petroleum Bulk Storage Site
64	D.J.S.SERVICE CORP.	1009 BEACH 21 ST	514 feet to the S	Petroleum Bulk Storage Site
23	VEHICLE REPAIR SHOP	10−09 CORNAGA AVE	516 feet to the S	Closed Status Spill (Unk/Other Cause)
75	GEORGE L CHRIS CLEANERS	2140 MOTT AVENUE	531 feet to the NNW	Hazardous Waste Generator/Transporter
65	ENGINE 328 AND ENGINE 264	16−15 CENTRAL AVENUE	560 feet to the ENE	Petroleum Bulk Storage Site
24	UNKNOWN	1210 BEACH CHANNEL DR	562 feet to the NNW	Closed Status Spill (Unk/Other Cause)
66	2206 REALTY CORP	22−06 CORNAGA AVENUE	593 feet to the SW	Petroleum Bulk Storage Site
76	NYNEX	CORNAGA AVE & BEAD 21ST	600 feet to the S	Hazardous Waste Generator/Transporter
67	INT.PENTECOSTAL MISSION	16−18 CENTRAL AVE	613 feet to the NE	Petroleum Bulk Storage Site
77	BELL ATLANTIC−NY	MOTT AVE & BEACH CHANNEL DR MH	617 feet to the NNW	Hazardous Waste Generator/Transporter
47	SPILL NUMBER 0000082	1920 MOTT AVE	623 feet to the ENE	Closed Status Spill (Misc. Spill Cause)
78	MYLES CLEANER	11−59 BEACH CHANNEL DRIVE	650 feet to the NW	Hazardous Waste Generator/Transporter
68	ACTION CENTER FOR DEUCATION & COMMUNITY DEV.	16−12 CENTRAL AVENUE	651 feet to the NE	Petroleum Bulk Storage Site
69	SEAGRIT BAR & GRILL INC.	1612 CENTRAL AVE	651 feet to the NE	Petroleum Bulk Storage Site
70	ROCKAWAY COMPANY	19−20 MOTT AVENUE	655 feet to the ENE	Petroleum Bulk Storage Site
71	JP MORGAN CHASE	19−12 MOTT AVENUE	655 feet to the ENE	Petroleum Bulk Storage Site
72	ROCKAWAY CO	19−14 MOTT AVE	655 feet to the ENE	Petroleum Bulk Storage Site
3	AUTO MAVEN DENT DR INC	1016 BEACH 19TH STREET	796 feet to the ESE	Solid Waste Facility
48	2230−40 MOTT AVENUE	2230−40 MOTT AVENUE	1011 feet to the NW	Closed Status Spill (Misc. Spill Cause)
25	PRIVATE HOME−SEWAGE	2254 CORNAGA AVE	1034 feet to the WSW	Closed Status Spill (Unk/Other Cause)
12	13−11 BAYPORT PLACE	13−11 BAYPORT PLACE	1043 feet to the NE	Closed Status Tank Test Failure
49	NYNEX BUILDING	13−11 BAYPORT PLACE	1043 feet to the NE	Closed Status Spill (Misc. Spill Cause)
26	HI AUTO SERVICE	18−11 MOTT AVENUE	1140 feet to the ESE	Closed Status Spill (Unk/Other Cause)
4	JACK COLETTA INC./COLETTA RECYCLING	1629 REDFERN AVE	1160 feet to the NNE	Solid Waste Facility
5	REDFERN RECYCLING LLC	1629 REDFERN AVENUE	1160 feet to the NNE	Solid Waste Facility
13	101ST POLICE PRECINT	16−12 MOTT AVENUE	1184 feet to the ESE	Closed Status Tank Test Failure
14	CLOSED−LACKOF RECENT INFO	19020 NEW HAVEN AVE.	1189 feet to the SSE	Closed Status Tank Test Failure
15	CLOSED−LACKOF RECENT INFO	19−20 NEW HAVEN AVENUE	1189 feet to the SSE	Closed Status Tank Test Failure
16	SAINT MARYS STAR OF SEA	19−20 NEW HAVEN AVENUE	1189 feet to the SSE	Closed Status Tank Test Failure
7	APT BUILDING TTF	22−11 NEW HAVEN AVE	1243 feet to the SSW	Active Tank Test Failure
27	STREET SPILL?	11−43 MCBRIDE ST	1294 feet to the WNW	Closed Status Spill (Unk/Other Cause)
6	METROPOLITAN RUBBER CO.	1406 AUGUSTINA AVENUE	1326 feet to the NNE	Solid Waste Facility
8	22−88 MOTT AVENUE	22−88 MOTT AVENUE	1469 feet to the NW	Closed Status Tank Failure

50	1365 CHANDLER ST (HURRICANE SANDY)	1365 CHANDLER ST	1476 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
28	LIRR	NAMEOKE ST/REDFERN AVE	1489 feet to the NNE	Closed Status Spill (Unk/Other Cause)
17	APARTMENT BUILDING TTF	15−02 MOTT AVENUE	1521 feet to the ESE	Closed Status Tank Test Failure
29	15−02 MOTT AVENUE	15002 MOTT AVENUE	1521 feet to the ESE	Closed Status Spill (Unk/Other Cause)
30	INWOOD STATION − LIRR	RED FERN AVE	1573 feet to the NNE	Closed Status Spill (Unk/Other Cause)
51	LIRR	LIRR/INWOOD STA/REDFERN	1573 feet to the NNE	Closed Status Spill (Misc. Spill Cause)
9	12−13 NELSON ST	12−13 NELSON ST	1664 feet to the NE	Closed Status Tank Failure
10	12−13 NEILSON ST	12−13 NEILSON ST	1664 feet to the NE	Closed Status Tank Failure
11	NEXT TO	22−54 NAMEOKE AVE.	1822 feet to the NNW	Closed Status Tank Failure
31	CONSTRUCTION	1152 NEILSON ST	1842 feet to the ENE	Closed Status Spill (Unk/Other Cause)
18	APART	10−14 NEILSON STREET	1854 feet to the E	Closed Status Tank Test Failure
19	327 BCH 19TH ST	327 BEACH 19TH STREET	1880 feet to the S	Closed Status Tank Test Failure
20	ST JOHNS EPISCOPAL HOSPIT	327 BEACH 19TH ST	1880 feet to the S	Closed Status Tank Test Failure
52	K MNGT BUILDINGS	13−22 CAFFREY AVE	1893 feet to the SE	Closed Status Spill (Misc. Spill Cause)
32	HOME	1035 DICKINS STREET	1900 feet to the W	Closed Status Spill (Unk/Other Cause)
21	APARTMENT BLDG.	20−30 ELK DR	1915 feet to the S	Closed Status Tank Test Failure
53	PS253Q	1307 CENTRAL AVE	1922 feet to the NE	Closed Status Spill (Misc. Spill Cause)
22	KINGDOM HALL JEHOVA WIT	2360 BROOKHAVEN AVE	1924 feet to the SW	Closed Status Tank Test Failure
33	1053 DICKENS AVENUE	1053 DICKONS AVENUE	1928 feet to the W	Closed Status Spill (Unk/Other Cause)
34	PRIVATE RESD	13−77 GIPSON ST	1984 feet to the NW	Closed Status Spill (Unk/Other Cause)
35	PUBLIC SCHOOL 215	535 BRIAR PL	1998 feet to the SW	Closed Status Spill (Unk/Other Cause)
54	SANDY FOLLOW UP	431 BEACH 122ND ST	1998 feet to the SSW	Closed Status Spill (Misc. Spill Cause)
36	BEHIND THIS ADDRESS	13−25 CAFFREY AVE	2066 feet to the SE	Closed Status Spill (Unk/Other Cause)
37	CANAL	22−55 BATTERY ROAD	2117 feet to the NNW	Closed Status Spill (Unk/Other Cause)
55	MEK BUTTERY RD	BATTERY RD	2120 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
38	RESIDENCE	2 WILLIAMS COURT	2153 feet to the SE	Closed Status Spill (Unk/Other Cause)
39	IN ROADWAY	BATTERY RD & MCBRIDE ST	2212 feet to the NNW	Closed Status Spill (Unk/Other Cause)
40	SPILL NUMBER 9903890	13−02 REDFERN AVE	2377 feet to the NNE	Closed Status Spill (Unk/Other Cause)
41	REDFERN HOUSING −NYCHA	14−68 BEACH CHANNEL DR	2377 feet to the NNE	Closed Status Spill (Unk/Other Cause)
42	1130 BEACH 9TH ST	1130 BEACH 9TH ST	2423 feet to the ENE	Closed Status Spill (Unk/Other Cause)
43	MOTT BASIN	SHERIDAN BLVD	2493 feet to the N	Closed Status Spill (Unk/Other Cause)
1	K − INWOOD HOLDER	W. OF SHERIDAN BLVD. & S. OF NASSAU AVE.	3260 feet to the N	NYSDEC Inactive Haz Waste Disposal Site
2	175 ROGER AVENUE	175 ROGER AVENUE	4156 feet to the NNW	NYSDEC Inactive Haz Waste Disposal Site

Toxics Targeting
1 Mile Radius Map

1037-1059 Beach 21st Street

Queens, NY 11691



Queens County

National Priority List (NPL)

Inactive Hazardous Waste Disposal Registry Site

Inact. Haz Waste Disp. Registry Qualifying

RCRA Corrective Action Facility

Site Location

Waterbody

County Border

Railroad Tracks

1 Mile Radius

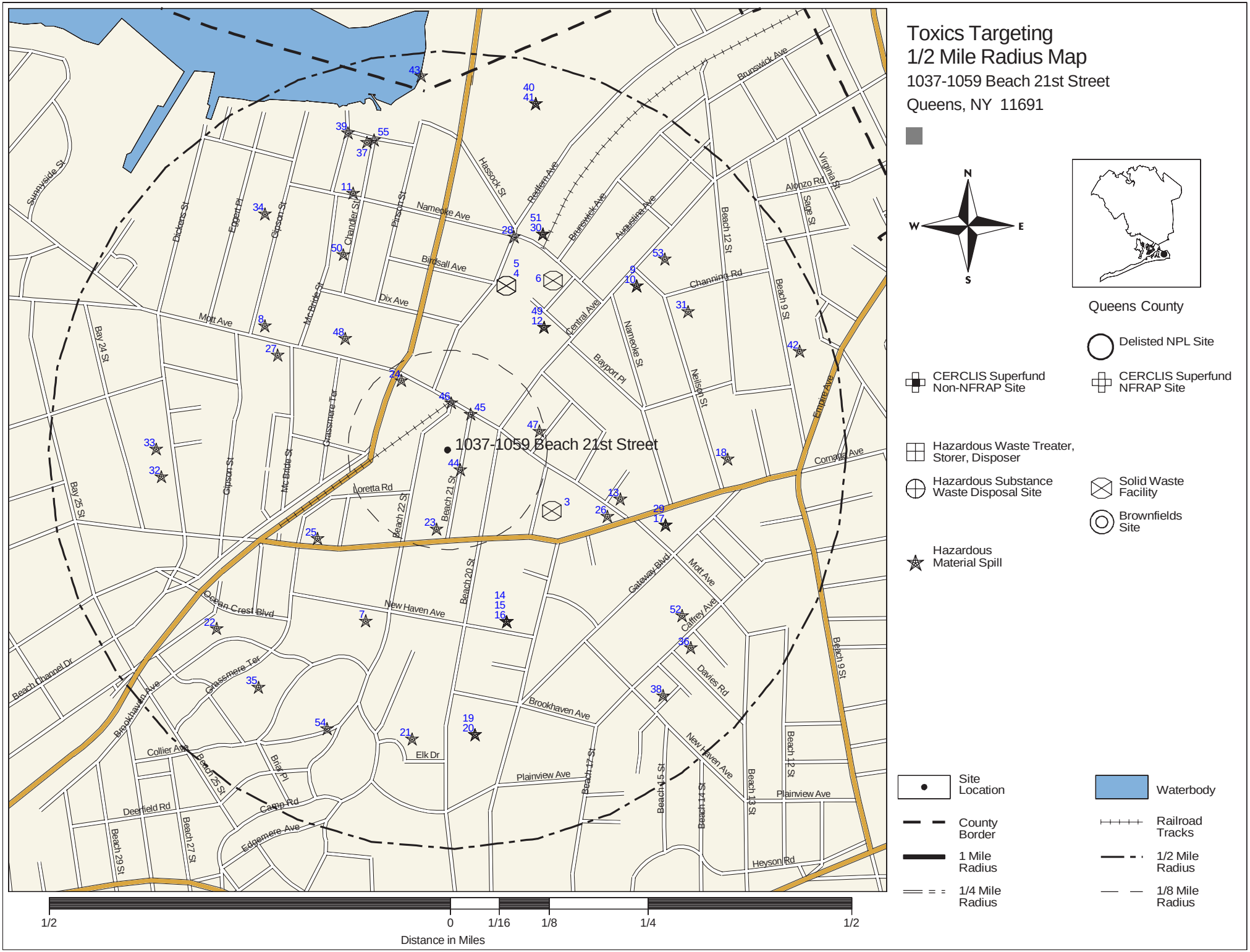
1/2 Mile Radius

1/4 Mile Radius

1/8 Mile Radius

1 0 1/8 1/4 1/2 1

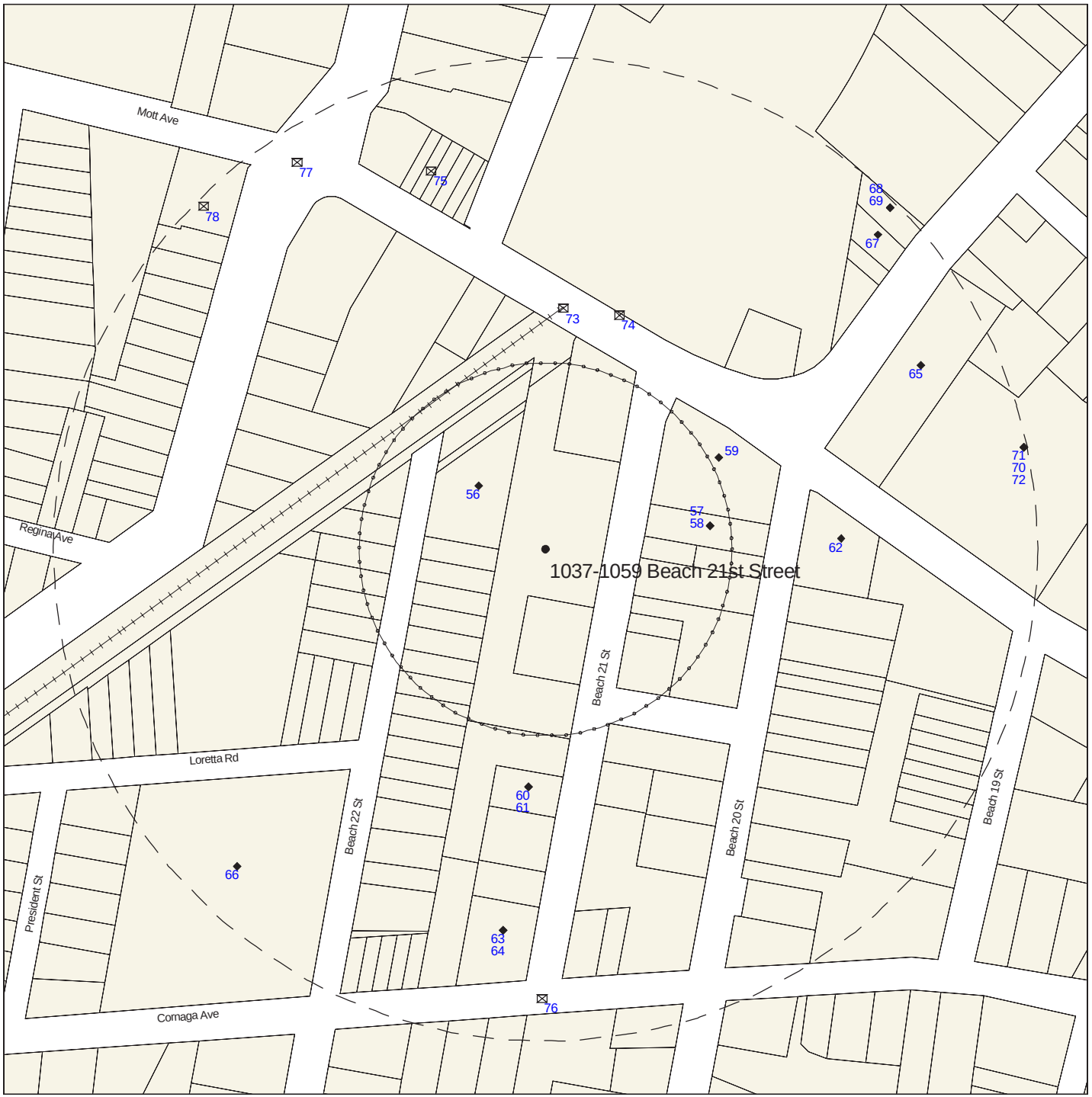
Distance in Miles


Toxics Targeting
1/2 Mile Radius Map
1037-1059 Beach 21st Street
Queens, NY 11691
N
W
E
S
Queens County
Delisted NPL Site
CERCLIS Superfund Non-NFRAP Site
CERCLIS Superfund NFRAP Site
Hazardous Waste Treater, Storer, Disposer
Hazardous Substance Waste Disposal Site
Solid Waste Facility
Brownfields Site
Hazardous Material Spill
1037-1059 Beach 21st Street
Site Location
Waterbody
County Border
Railroad Tracks
1 Mile Radius
1/2 Mile Radius
1/4 Mile Radius
1/8 Mile Radius
1/2
0
1/16
1/8
1/4
1/2
Distance in Miles
Brunswick Ave
Hassock St
Redfern Ave
Virginia St
Alonzo Rd
Sage St
Augustina Ave
Beach 12 St
Sunnyside St
Dickens St
Egbert Pl
Gipson St
Chandler St
Beach St
Nameoke Ave
Birdsall Ave
Channing Rd
Beach 9 St
Mott Ave
Mc Bride St
Dix Ave
Central Ave
Nameoke St
Bayport Pl
Nellison St
Empire Ave
Bay 24 St
Grassmere Ter
Cornaga Ave
Loretta Rd
Beach 22 St
Beach 21 St
Bay 25 St
Gateway Blvd
Beach 20 St
Ocean Crest Blvd
New Haven Ave
Cafrey Ave
Beach Channel Dr
Brookhaven Ave
Davies Rd
Collier Ave
Beach 25 St
Brigg Pl
Elk Dr
Plainview Ave
Beach 17 St
Beach 15 St
Beach 14 St
Beach 13 St
Deerfield Rd
Camp Rd
Edgemere Ave
Beach 27 St
Beach 29 St
Heyson Rd

Toxics Targeting
1/8 Mile Radius Map

1037-1059 Beach 21st Street

Queens, NY 11691



Queens County

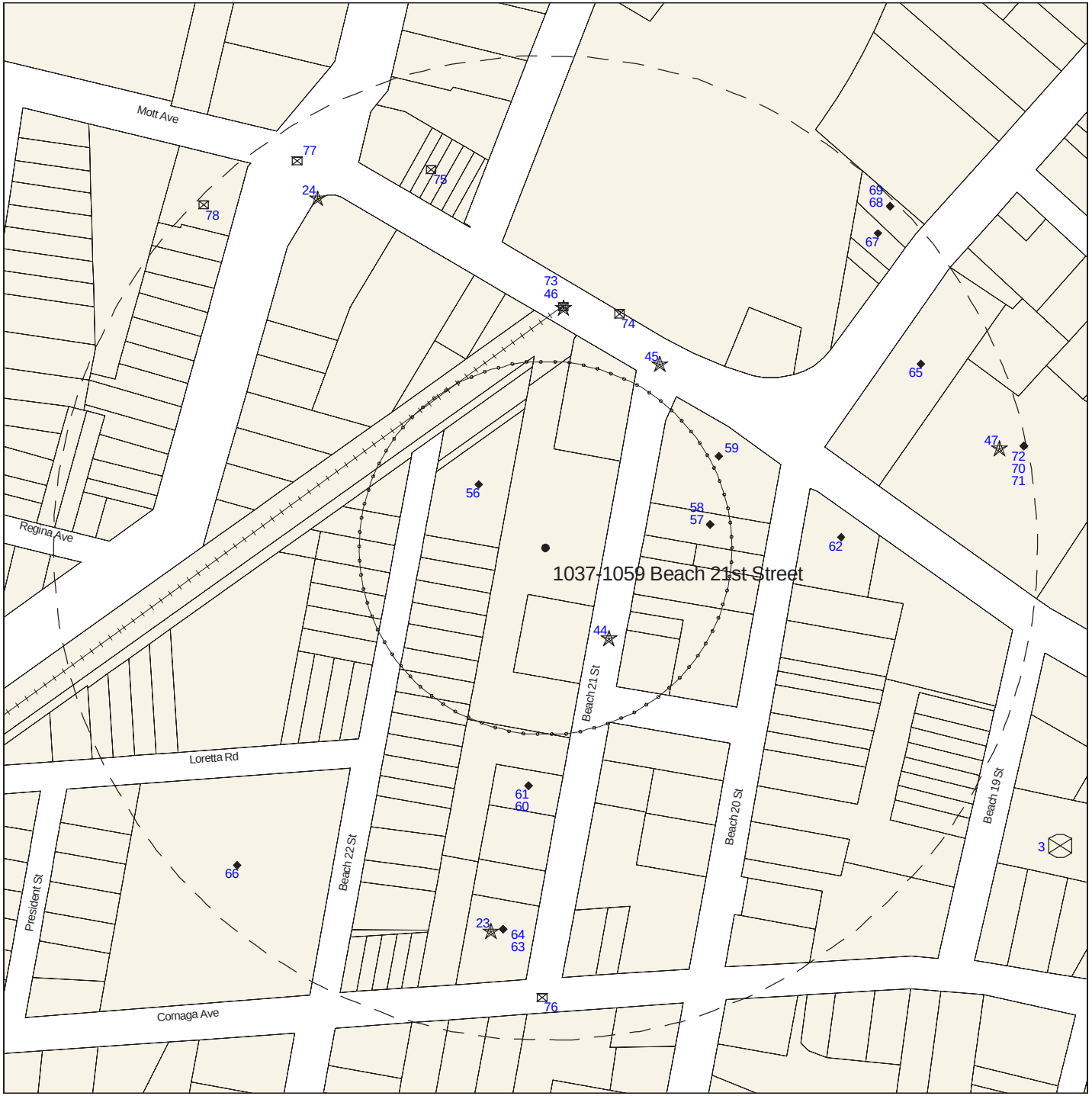
- Major Oil Storage Facility
- Chemical Storage Facility
- Toxic Release
- Wastewater Discharge
- Hazardous Waste Generator, Transp.
- Enforcement Docket Facility
- Air Release
- Env Qual Review E Designation
- Petroleum Bulk Storage Facility
- Historic Utility Site

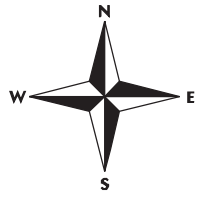
- Site Location
- County Border
- 1/8 Mile Radius
- Waterbody
- Railroad Tracks
- 250 Foot Radius

Toxics Targeting
1/8 Mile Closeup Map

1037-1059 Beach 21st Street

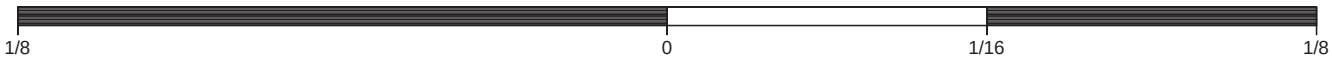
Queens, NY 11691





Queens County

- National Priority List (NPL) *
- Delisted NPL Site **
- CERCLIS Superfund Non-NFRAP Site **
- CERCLIS Superfund NFRAP Site **
- Inactive Hazardous Waste Disposal Registry Site *
- Inact. Haz Waste Disp. Registry Qualifying *
- Hazardous Waste Treater, Storer, Disposer **
- RCRA Corrective Action Facility *
- Hazardous Substance Waste Disposal Site **
- Solid Waste Facility **
- Major Oil Storage Facility ****
- Brownfields Site **
- Chemical Storage Facility ****
- Hazardous Material Spill **
- Toxic Release ****
- Wastewater Discharge ****
- Petroleum Bulk Storage Facility ****
- Hazardous Waste Generator, Transp. ****
- Historic Utility Site ****
- Enforcement Docket Facility ****
- Air Release ****
- Env Qual Review E Designation *****
- Remediation Site Borders
- Site Location
- Waterbody
- County Border
- Railroad Tracks
- 1/8 Mile Radius
- 250 Foot Radius



Distance in Miles

* 1 Mile Search Radius
** 1/2 Mile Search Radius
**** 1/8 Mile Search Radius
***** Onsite Search (250 Ft)

Toxics Targeting Tax Parcel Map

1037-1059 Beach 21st Street

Queens, NY 11691

N

W E

S

Queens County

- National Priority List (NPL)
- Delisted NPL Site
- CERCLIS Superfund Non-NFRAP Site
- CERCLIS Superfund NFRAP Site
- Inactive Hazardous Waste Disposal Registry Site
- Inact. Haz Waste Disp. Registry Qualifying
- Hazardous Waste Treater, Storer, Disposer
- RCRA Corrective Action Facility
- Hazardous Substance Waste Disposal Site
- Solid Waste Facility
- Major Oil Storage Facility
- Brownfields Site
- Chemical Storage Facility
- Hazardous Material Spill
- Toxic Release
- Wastewater Discharge
- Petroleum Bulk Storage Facility
- Hazardous Waste Generator, Transp.
- Historic Utility Site
- Enforcement Docket Facility
- Air Release
- Env Qual Review E Designation
- Remediation Site Borders
- Site Location
- Waterbody
- County Border
- Railroad Tracks

Tax Parcel Information Table

1037−1059 Beach 21st Street
Queens, NY 11691

Subject Parcel or Parcels

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
4−15705−0059	BEACH 21 STREET	DEPT OF TRANSPORTATIO	C8−1 R5	V8	0		1147500	48565

Other Parcels Found On The Tax Parcel Map

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
4−15537−0005	2010 MOTT AVENUE	NORTH FORK BANK	C4−2	O6	1	1970	409500	11100
4−15537−0001	2002 MOTT AVENUE	STARK RITA (EX)	C4−2 C8−1	K6	2	1931	1087650	563404
4−15705−0031	1042 BEACH 22 STREET	FROST, HYACINTH	R5	B2	1	2002	26400	2844
4−15704−0040	2001 BEACH 20 STREET	CENTRAL BUILDING CORP	C4−2	K9	1	1941	614250	18027
4−15709−0158	1049 BEACH 22 STREET	GERALD STANLEY	R5	B2	1	2002	25567	3125
4−15704−0030	1050 BEACH 21 STREET	BRENTON DEER	C4−2	S1	1	1931	15714	1800
4−15705−0030	1040 BEACH 22 STREET	PIPIA, ANTHONY	R5	B2	1	2002	26400	2844
4−15705−0078	1027 BEACH 21 STREET	BEACH 21ST STREET REA	C8−1 R5	Z9	1		101700	14060
4−15705−0136	BEACH 22 STREET	STATE LAND UNDER WATE	C8−1	V8	0		48600	2059
4−15704−0066	1027 BEACH 20 STREET	KOTLAR REALTY LLC	C4−2	K9	1	1931	355500	8000
4−15704−0053	1057 BEACH 20 STREET	D−MART, INC	C4−2	K9	1	1930	345600	7200
4−15704−0055	1055 BEACH 20 STREET	GLEITMAN RLTY ASSOCIA	C4−2	L8	1	1931	48600	2638
4−15704−0026	1040 BEACH 21 STREET	BURKE, PATRICK	C4−2	K4	1	1931	186300	5250
4−15705−0140	1074 BEACH 22 STREET	10−74 BEACH 22ND ST I	C8−1 R5	G2	1	1995	85500	13710
4−15705−0135	BEACH 22 STREET	D C A S	C8−1	V9	0		145800	6170
4−15705−0034	1054 BEACH 22 STREET	LESLYN BISHOP	R5	B2	1	2000	25249	3058
4−15709−0002	2204 LORETTA ROAD	SANDERS, KIM	R5	B1	1	1940	9028	3069
4−15705−0028	1034 BEACH 22 STREET	JEFFREY, VINCENT	R5	B2	1	2002	26400	2844
4−15705−0033	1050 BEACH 22 STREET	MICHELLE CHARLES	R5	B2	1	2000	25249	3058
4−15709−0001	2202 LORETTA ROAD	GODETTE, CHRISTINE	R5	B1	1	1940	13310	2316
4−15709−0025	LORETTA ROAD	NYS DOT	R5 R4−1	U7	0			7392
4−15705−0069	BEACH 21 STREET	NYC TRANSIT AUTHORITY	C8−1	V8	0		224100	9479
4−15705−0029	1036 BEACH 22 STREET	JEFFREY, VINCENT	R5	B2	1	2002	26400	2844
4−15709−0160	1047 BEACH 22 STREET	WAYNE MCGHEE	R5	B2	1	2002	25567	3125
4−15704−0057	1051 BEACH 20 STREET	1051 BCH 20ST ASSOCIA	C4−2	K1	1	1967	278100	8000
4−15709−0150	1063 BEACH 22 STREET	MARIA NOBOA	R5	A1	1	1930	10026	3548
4−15709−0109	2123 MOTT AVENUE	CHO & P PRODPERTY COR	R5	K1	1	1938	464850	26578
4−15704−0060	1047 BEACH 20 STREET	LINO REALTY CORP	C4−2	C7	2	1930	838350	12950
4−15705−0036	1060 BEACH 22 STREET	AVA M PRUITT	R5	B2	1	2000	25249	3058
4−15705−0032	1048 BEACH 22 STREET	MILTON CROSSDALE	R5	B2	1	2000	25249	3062
4−15705−0035	1056 BEACH 22 STREET	JAMES SPANN	R5	B2	1	2000	25249	3058
4−15709−0118	2117 MOTT AVENUE	ROCKAWAY DEVELOPMENT&	R5	K9	1	1931	204750	2200
4−15709−0154	1055 BEACH 22 STREET	ALMEIDA, MANUEL	R5	B2	1	2002	25567	3125
4−15709−0155	1053 BEACH 22 STREET	ICILDA MOORE	R5	B2	1	2002	25567	3125
4−15709−0115	2119 MOTT AVENUE	PATEL PRAVIN	R5	K9	1	1931	328950	5008
4−15709−0215	2119A MOTT AVENUE	FAVIOLA LLC	R5	V3	0		8880	2816
4−15709−0152	1059 BEACH 22 STREET	TULLOCH, VANTROY	R5	S1	2	1930	13320	3750
4−15705−0037	1062 BEACH 22 STREET	VICTOR, RONALD	R5	B2	1	2000	20220	3058

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
4−15709−0145	BEACH 22 STREET	VEERASAWMY, JOAN W	R5	Z9	0		33300	3086
4−15705−0125	2101 MOTT AVENUE	TARIK HOLDING CORP	C8−1	K9	1	1960	556200	11844
4−15709−0086	1120 BEACH CHANNEL DRIVE	LUCAS, GWENDOLINE	R5	B3	2	1920	21703	7604
4−15709−0035	LORETTA ROAD	DEPT OF GENERAL SERVI	R5 R4−1	U7	0			59600
4−15704−0036	1062 BEACH 21 STREET	GLEITMAN RLTY ASSOCIA	C4−2	G2	1	1963	77850	2100

Section Two: Toxic Site Profiles

The heading of each *Toxic Site Profile* refers to the site's map location and details:

- The facility name, address, city, state, and zip code.
- Any changes that were made to a site's address in order to map its location.
- The site mapping method that was used (see ***How Sites are Located***, at the end of this section for more information).

Toxic Site Profiles summarize information provided by site owners or operators and government agencies regarding various toxic chemical activities reported at each site, such as:

- Whether chemicals were stored, produced, transported, discharged or disposed of.
- The name of chemicals and their Chemical Abstract Series (CAS) numbers.
- The amount of chemicals and the units (gallons/pounds) the chemical was measured in.
- Whether the site or storage tanks at the site are currently active or inactive.
- Special codes used by government agencies to regulate hazardous waste activities at some sites, or a complete description of the codes follows the profiles section.

For selected individual chemicals reported at various toxic sites, some potential health effect summary information appears below the site profile. Each potential health effect summary identifies chemicals by name and by Chemical Abstract Series (CAS) Number. An "x" under each potential health effect heading indicates positive toxicity testing results reported by the National Institute of Occupational Safety and Health's Registry of Toxic Effects of Chemical Substances (RTECS). Some chemicals (mostly appearing in profiles of Hazardous Waste facilities), are reported as mixtures, and RTECS health effect information is only available for individual chemicals. In addition, RTECS only provides information on approximately 100,000 common chemicals. Consequently, the absence of potential health effect summary information for a particular chemical identified in a Toxic Site Profile does not necessarily mean that the chemical does not pose potential health effects.

The Maximum Contaminant Level (MCL) in drinking water allowed for selected chemicals is also noted. In most cases, the only applicable MCL has been set by the New York State Department of Health (NYSDOH). Where NYSDOH has not set an MCL, the federal standard, if one exists, is listed and is marked by an asterisk.

Presented below are column headings that describe the health effect definitions used in RTECS and applicable New York State and federal drinking water standards. Reference sources for information presented in this section are also provided.

ACUTE TOX: **Acute Toxicity**: Short-term exposure to this chemical can cause lethal and non-lethal toxicity effects not included in the following four categories.

TUMOR TOX: **Tumorigenic Toxicity**: The chemical can cause an increase in the incidence of tumors.

MUTAG TOX: **Mutagenic Toxicity**: The chemical can cause genetic alterations that are passed from one generation to the next.

REPRO TOX: **Reproductive Toxicity**: May signify one of the following effects: maternal effects, paternal effects, effects on fertility, effects on the embryo or fetus, specific developmental abnormalities, tumorigenic effects, or effects on the newborn (only positive reproductive effects data for mammalian species are referenced).

IRRIT TOX: **Primary Irritant**: The chemical can cause eye or skin irritation.

MCL: **Drinking Water Standard - Maximum Contaminant Level** (MCL) listed under Drinking Water Supplies, 10 NYCRR Part 5, Subparts 1.51(f),(g), and (h) for NYDOH MCL's and under the Safe Drinking Water Act, 40 CFR 141, Subparts B and G, (* indicates value for total trihalomethanes) for federal MCL's.

Reference Source for Toxicity Information: Registry of Toxic Effects of Chemical Substances (RTECS), NIOSH (on-line database); For further information, contact: NIOSH, 4676 Columbia Parkway, Cincinnati, OH, 45226, 800/35-NIOSH.

Reference Source for Drinking Water Standards: New York State Department of Health, Bureau of Toxic Substances Assessment, 2 University Place, Room 240, Albany, NY 12203, 518/458-6373.

U.S. Environmental Protection Agency, Office of Drinking Water, 401 M St SW, Mailstop WH-556, Washington, DC, 20460, 202/260-5700.

Inactive Hazardous Waste Disposal Site Classifications:

1 -- Causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment -- immediate action required;
2 -- Significant threat to the public health or environment -- action required;
3 -- Does not Present a significant threat to the environment or public health -- action may be deferred;
4 -- Site properly closed --requires continued management;
5 -- Site properly closed, no evidence of present or potential adverse impact -- no further action required;
2a -- This temporary classification has been assigned to sites where there is inadequate data to assign them to the five classifications specified by law;
A -- Work underway and not yet complete;
P -- Potential Site;
$D_{1, 2, 3}$ -- Delisted Site (1: hazardous waste not found; 2: remediated; 3: consolidated site or site incorrectly listed);
C -- Remediation Complete (formerly D2).

NO NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

INACTIVE HAZ WASTE DISPOSAL REGISTRY OR REGISTRY−QUALIFYING SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 1 **K − INWOOD HOLDER** **Facility Id: 130121**
W. OF SHERIDAN BLVD. & S. OF NASSAU AVE. INWOOD (V), NY 11696 TT−Id: 120A−0007−059

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE − LARGE SITE
Approximate distance from property: 3260 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: UNKNOWN

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 130121
CLASSIFICATION CODE: A REGION: 1 DEC ID: 378988
CLASSIFICATION CODE DESCRIPTION:
Work is underway and not yet complete.

NAME OF SITE: K - Inwood Holder
STREET ADDRESS: W. of Sheridan Blvd. & S. of Nassau Ave. TOWN: Hempstead
CITY: Inwood (V) ZIP: 11696 COUNTY: Nassau

ESTIMATED SIZE: 27 Acres
SITE TYPE: Dump- Structure- Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:
None reported

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

APPLICANT REQUESTOR(S):

DOCUMENT REPOSITORY(S):
NAME: Peninsula Public Library
ADDRESS: 280 Central Ave
Lawrence, NY 11559-1526

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:
Location: The Inwood Holder site is a 27 acre site located in an urban area. The site is located on the southwest corner of Nassau Avenue and Sheridan Blvd. in Inwood, NY.

Site Features: The majority of the site is undeveloped and overgrown with trees and brush. The concrete foundations of the former gas holder, pump house, boiler house and engine room are visible and located in the northeastern area of the parcel. A natural gas metering and regulation station is in operation and located east of the holder foundation and adjacent to Sheridan Blvd. Motts Basin resides on the southern border of the site. Current Zoning and Land Use: The site is currently inactive, except for the area around the regulator station. Current zoning is commercial. The surrounding parcels are currently used for a combination of commercial and light industrial purposes. The closest residence is located upgradient from the site, along Nassau Avenue approximately 60 feet from the site boundary. Past Use of the Site: The gas holder was constructed between 1923 and 1930, and operated until approximately 1972. The holder was removed in 1993. During an unspecified time period, the central-southern portion of the site was used as a fill area for fly ash, drums and construction debris. This contributed to the petroleum impacts found during a 1993 site investigation. Site Geology and Hydrogeology: The site is underlain by fill consisting of gravels, silty sand and combustion residuals (coal and ash). A two to three foot thick peat layer is encountered at most locations at depths from roughly 7 to 11 feet below ground surface (bgs). Below the peat is a layer of silty sand. Groundwater is encountered between 2 and 13.5 feet bgs with flow to the south and southwest.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
COAL TAR	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Nature and Extent of Contamination: Based upon investigations conducted to date, the primary contaminants of concern at the site include coal tar and petroleum. Soil - The majority of the visually observed impacts were identified south and southwest of the former gas holder and include petroleum and holder related materials. Visually observed impacts were generally above the peat unit. Deep impacts below the peat layer were observed in SB-47, with DNAPL saturation from 23.5 to 35 ft bgs. In above the peat layer, in SB-35, a total BTEX value of 1,820 ppm was detected in the 9.5 to 10 ft bgs interval. In SB-20, a total PAH value of 485 ppm was detected in the 8.5-10 ft bgs interval. In TP-12, a total PAH value of 2,340 ppm was detected in the 6.5-7 ft bgs interval. Below the peat layer, in SB-20, a total PAH value of 3,600 ppm was detected in the 22-23.5 ft bgs interval.

Groundwater - Groundwater is impacted by dissolved phase VOCs emanating from the MGP and petroleum related source area. Total

BTEX from MW-21S, screened from 3-8 ft, within this source area, was initially detected at a level of 63,000 ppb, but has decreased to 5,060 ppb in the third sampling event. Tetrachloroethene (PCE) was detected at 58,000 ppb in SB-6, screened from 24-28 ft, and 12,000 ppb in MW-51I, screened from 18-28 ft, both situated on the northern, upgradient border of the site.

Soil Vapor & Indoor Air - Only soil vapor samples were collected, as there are no occupied buildings on the site. Possible MGP-related compounds detected above guidance values were trimethylbenzenes, 4-Ethyltoluene, carbon disulfide, ethylbenzene, hexane, naphthalene, styrene, toluene, and xylenes. Non MGP-related compounds detected above guidance values were 1,1,1-Trichloroethane, 1,1-Dichloroethane, 2- Butanone, acetone, chloroform, cis-1,2-Dichloroethene, methylene chloride, and tetrachloroethene (PCE).

ASSESSMENT OF HEALTH PROBLEMS:
People who enter the site could contact contaminants in the soil or sediments by walking on the site, digging or otherwise disturbing the soil or sediments. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. People are not expected to come into direct contact with contaminated groundwater unless they dig below the ground surface. Volatile organic compounds in contaminated groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Additional environmental sampling is necessary to evaluate the potential for soil vapor intrusion to impact on- and off-site buildings.

PROJECT COMPLETIONS:
None reported

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-	Groundwater-	Soil-	Sediment-
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE:
GROUNDWATER DEPTH:

LEGAL ACTION:	Type:		State-	Federal-
STATUS:	Negotiation in Progress-		Order Signed-	
REMEDIAL ACTION:	Proposed-	Under Design-	In Progress-	Completed-
NATURE OF ACTION:				

Map Identification Number 2 **175 ROGER AVENUE** **Facility Id: 130164**
175 ROGER AVENUE INWOOD, NY 11096 TT−Id: 120A−0008−559

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 4156 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

****

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL SITE INFORMATION

SITE CODE: 130164
CLASSIFICATION CODE: 02 REGION: 1 DEC ID: 479943
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: 175 Roger Avenue
STREET ADDRESS: 175 Roger Avenue TOWN: Hempstead
CITY: Inwood ZIP: 11096 COUNTY: Nassau

ESTIMATED SIZE: 4.85 Acres
SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:
None reported

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):
NAME: Nassau County Owner Type: PRP - Class 2 HazSubs
Dept of Public Works - Division of Real Estate
ADDRESS: 1 West Street
Room 200
Mineola, NY 11501

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:
Location: The 175 Roger Avenue site is located at 175 Roger Avenue, Inwood, Town of Hempstead, Nassau County. The Site is bordered to the north by Roger Avenue, with a parking lot (former Shell terminal) to the northwest, a gravel/soil recycling facility and Sony Pictures and Entertainment to the northeast. Further north is the Negro Bar Channel, a waterway to Jamaica Bay. South of the Site are residential properties, followed by Bayview Avenue. The Site is bordered to the east by Gates Avenue, followed by commercial buildings. Immediately west of the Site is a freight and cargo company. Site Features: The site consists of a 4.85 acre parcel of land that is developed with a 155,000 square foot one-story, warehouse building with a partial mezzanine. The remainder of the site consists of asphalt and concrete paved driveway/parking area with limited areas of grass. Current Zoning/Use(s): This site is currently zoned for commercial use in a primarily commercial and residential urban area.

Historic Use(s) and Source(s): Historical site documentation indicates that the Site was built in three stages from 1954 through 1967. The Site was used as a "Sheet Metal Fabrication" factory since at least 1961. Rockaway Metal Products occupied the Site from approximately 1971 until circa 1987. In 1987, Rockaway Metal Products abandoned the Site and left hazardous waste materials improperly stored and disposed of on-Site. On June 15 and 16, 1992, the United States Environmental Protection Agency (USEPA) personnel conducted a site inspection and discovered the following: approximately 240 55-gallon deteriorated and leaking drums, a 5,000-gallon tanker trailer in poor condition, dry wells that appeared to contain sludge materials and USTs that contained potentially flammable liquids. To address the hazardous condition, the EPA conducted an Emergency Removal Action from August 1993 through April 1995. Approximately 240 55-gallon drums of waste materials were removed. The tanker trailer, one 1,000-gallon heating oil UST located in the southeast portion of the Site and UST piping/ dispenser systems were removed. Following the removal action, the Site was used as a warehouse by various tenants from 1990 through 2004, including Gunter Auto Shop, an auto repair shop. The Site was acquired by Nassau County Department of Real Estate in 1995 because of nonpayment of taxes and continues to own the Site. Since 2004 the site has remained vacant. The site building was damaged by a fire in February 2011 and has been condemned and needs to be demolished.

Site Geology/Hydrogeology: The Site ground surface is approximately 10 feet above mean sea level. The Site is generally flat and has a gentle slope towards the northwest. The Site contains no areas classified as wetlands, and is covered with concrete, asphalt and surrounded by paved roadways and sidewalks. Depth to groundwater throughout the Site ranges from 4 to 6 feet bgs and appears to be tidally influenced. A groundwater divide appears to run through the center of the Site, with an apparent groundwater flow direction towards both the northwest and southeast. March 2013: The applicant, Expeditors International, has elected to terminate the Brownfield Cleanup Agreement and cease participating in the BCP. Termination letter was received from Applicant March 8, 2013. Central Office issued withdrawal acceptance letter March 19, 2013. Nassau County currently owns the property. February 2015: Expeditors International is currently considering buying the property from Nassau County. The Department’s attorney assigned to the project is in negotiations with Expeditors regarding executing a Consent Order.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
XYLENE (MIXED)	UNKNOWN
ARSENIC	UNKNOWN
ETHYLBENZENE	UNKNOWN
LEAD	UNKNOWN
NAPHTHALENE	UNKNOWN

THALLIUM	UNKNOWN
TETRACHLOROETHYLENE (PCE)	UNKNOWN
CADMIUM	UNKNOWN
MERCURY	UNKNOWN
1,2,4-TRIMETHYLBENZENE	UNKNOWN
VINYL CHLORIDE	UNKNOWN
CHROMIUM	UNKNOWN
TOLUENE	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
DICHLOROETHYLENE	UNKNOWN
1,1 Dichloroethene	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Nature and Extent of Contamination: The primary contaminants of concern at the site at this time include petroleum hydrocarbons, chlorinated volatile organic compound (VOCs), semi-volatile organic compounds (SVOCs) and metals. The media impacted include soil, soil vapor and groundwater.

Site Soils: Soil impacts appear to be limited to the area immediately surrounding the three abandoned USTs in the north central area of the site. Shallow soil samples were found to contain levels of VOCs, including 1,2,4-trimethylbenzene (870,000 micrograms per kilogram, ug/kg), 1,3,5-trimethylbenzene (390,000 ug/kg) and several petroleum related compounds above the commercial SCOs. Site dry wells have been impacted by selected metals, such as cadmium, chromium, lead and mercury. These compounds were detected above protection of groundwater SCOs.

Groundwater: A petroleum hydrocarbon plume is centered along the northeast section of the Site and appears to extend off-site to the northwest and southeast at depths greater than 20 feet below ground surface (bgs). The plume appears to be emanating from the area of the abandoned USTs. A chlorinated VOC plume is widespread throughout the Site, with elevated levels of vinyl chloride (340 micrograms per Liter, ug/L), cis-1,2-dichloroethylene (6,400 ug/L), trichloroethylene (TCE) (6,100 ug/L) and tetrachloroethylene (PCE) (9,800 ug/L)in groundwater. The chlorinated VOC levels increase with depth throughout the Site. The plume appears to extend off-Site to the southeast and northwest. In addition, arsenic (29 ug/L), thallium (55 ug/L) and lead (69 ug/L), were identified in the Site groundwater at levels above the standards.

Soil Vapor: Several VOCs, such as PCE and TCE, were measured in the soil vapor samples collected under the asphalt pavement outside of the site building. VOCs were also measured in sub-slab vapor samples collected beneath the existing Site building. PCE and TCE were detected in sub-slab soil vapor samples at levels ranging up to 4,300 micrograms per cubic meter (ug/m3) to 170 ug/m3. Additionally, acetone, 2-butanone (MEK), ethylbenzene, 4-ethyltoluene, toluene, 1,2,4- trimethylbenzene, 1,3,5-trimethylbenzene, m- and p-xylene, and o-xylene were detected in soil vapor samples. PCE and TCE were not detected in indoor air samples at levels above the New York State Department of Health (NYSDOH) Air Guidance Value (AGV).

Based on an evaluation of the data collected as part of the site investigations, the existence of shallow groundwater at the site (approximately 4 to 6 feet below grade) and the presence of several residential dwellings adjacent to the site property boundary, the Department, in concurrence with the NYSDOH, concluded that the 175 Roger Avenue site poses a significant threat to the environment and public health. Special Resources Impacted: No special resource impacts have occurred on-site. Contaminated groundwater appears to be migrating off-site towards downgradient water bodies.

ASSESSMENT OF HEALTH PROBLEMS:
People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Since the site is fenced and covered by asphalt or concrete, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. Volatile organic compounds in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment and occupancy. The potential exists for inhalation of site-related contaminants in indoor air via soil vapor intrusion in adjacent off-site buildings.

PROJECT COMPLETIONS:
None reported

The New York State Department of Environmental Conservation has not publicly updated the following fields since 2003:

ANALYTICAL DATA AVAILABLE FOR:	Air-	Surface Water-	Groundwater-	Soil-	Sediment-
APPLICABLE STANDARDS EXCEEDED IN:	Groundwater-	Drinking Water-	Surface Water-	Air-	

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE:
GROUNDWATER DEPTH:

LEGAL ACTION:	Type:		State-	Federal-
STATUS:	Negotiation in Progress-		Order Signed-	
REMEDIAL ACTION:	Proposed-	Under Design-	In Progress-	Completed-
NATURE OF ACTION:				

NO RCRA CORRECTIVE ACTION SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS

NO CERCLIS SUPERFUND SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO BROWNFIELDS SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

SOLID WASTE FACILITIES IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 3 **AUTO MAVEN DENT DR INC** **Facility Id: NY40000011865**
1016 BEACH 19TH STREET, FAR ROCKAWAY, NY 11691 TT−Id: 390A−1000−146

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 796 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
	Vehicle Dismantling	No		02/17/2002			

Map Identification Number 4 **JACK COLETTA INC./COLETTA RECYCLING** **Facility Id: NY00000000355**
1629 REDFERN AVE, FAR ROCKAWAY, NY 11691 TT−Id: 390A−1000−067

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1160 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
41K62	Waste tire storage − permit	No		02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Jack Coletta Inc./Coletta Recycling 1629 Redfern Ave, Far Rockaway, NY, 11691	Owner	02/08/2002	

Map Identification Number 5 **REDFERN RECYCLING LLC** **Facility Id: NY40000116947**
1629 REDFERN AVENUE, FAR ROCKAWAY, NY 11691 TT−Id: 390A−1000−228

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1160 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
41MB2	RHRF − registration	Yes	Registration	01/26/2012			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
Vito Dragonetti − President	Owner	01/26/2012	

Map Identification Number 6 **METROPOLITAN RUBBER CO.** **Facility Id: NY00000000356**
1406 AUGUSTINA AVENUE, FAR ROCKAWAY, NY 11691 TT−Id: 390A−1000−068

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1326 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Activity Number	Activity Type	Active?	Regulatory Status	Activity Start Date	Activity End Date	Activity Closed Date	Activity Delisted Date
41K68	Waste tire storage − permit	No		02/17/2002			

Affiliation	Affiliation Type	Affiliation Start Date	Affiliation End Date
CLIFFORD BRAND United States	Contact	02/08/2002	

NO HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSERS IDENTIFIED WITHIN THE 1/2 MILE SEARCH RADIUS

HAZARDOUS MATERIAL SPILLS INTRODUCTION

The Hazardous Material Spills in this section are divided into eight spill cause groupings. These include:

Active Spills Section: Spills with incomplete paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

1) Tank Failures
2) Tank Test Failures
3) Unknown Spill Cause or Other Spill Cause Hazardous Spills
4) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

Closed Status Spills Section: Spills with completed paperwork that may or may not be cleaned up (See Date Cleanup Ceased)

5) Tank Failures
6) Tank Test Failures
7) Unknown Spill Cause or Other Spill Cause Hazardous Spills
8) Miscellanous Spill Causes: Equipment Failure, Human Error, Tank Overfill, Deliberate Spill, Traffic Accidents, Housekeeping, Abandoned Drum, Vandalism and Storms.

All spills within each spill cause category are presented in order of proximity to the subject site address.

Please note that spills reported within 0.25 mile (or one−eighth mile in New York City) are mapped and profiled.

Between 0.25 mile (or one−eighth mile in New York City) and 0.5 mile, only the following spills are mapped and profiled:

* Tank Failures;

* Tank Test Failures;

* Unknown Spill Cause or Other Spill Cause;

* Spills greater than 100 units of quantity; and

* Spills reported in the NYSDEC Fall 1998 MTBE Survey.

A table at the end of each section presents a listing of reported Miscellanous Spills with less than 100 units located between 0.25 mile (or one−eighth mile in Manhattan) and 0.5 mile. These spills are neither mapped nor profiled.

NO ACTIVE TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

ACTIVE TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 7 **APT BUILDING TTF** **Spill Number: 1304503** **Close Date:**
22−11 NEW HAVEN AVE QUEENS, NY TT−Id: 520A−0288−997

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1243 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: 2211 NEW HAVEN AVE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	PROPERTY OWNER	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	vszhune	Contact for more spill info:	ROB HILL	Contact Person Phone:	7188557272

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/24/2013		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#6 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Tank was cleaned, then failed tank test.

DEC Investigator Remarks:

10/31/13 David Chan from Riteway sent the following email Spill # 1304503 22−11 New Heaven Ave. ˇ I was sub contracted by National Mechanical to perform the work at this site. The tank failed the test but we were not contracted to perform any other work after the tank test failure. We sent a proposal for a new tank, an abandonment and an isolation.

8/13/114 David Chan from Riteway sent the following email 22−11 New Haven − we submitted a proposal for follow up work after the tank failure but received no response. Then a few months later they requested that we abandon the tank, which we did. We did not perform any work for them between the TTF and the abandonment. The property may have given the follow up work to another contractor.

NO ACTIVE UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO ACTIVE HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/8 mile. Between 1/8 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

THE FOLLOWING ACTIVE SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/8 MILE AND 1/2 MILE SEARCH RADIUS FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM, OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY
1411737	GROUND	13−46 BEACH CHANNEL DRIVE	FAR ROCK AWAY
1300148	PRIVATE RESIDENCE	2385 DICKENS ST	FAR ROCKAWAY
1510837	BEHIND ST JOHNS HOSPITAL	327 BEACH 19TH ST	FAR ROCKAWAY
1404156	MACLEAN NURSING HOME	1711 BROOKHAVEN AVE	FAR ROCKAWAY
0504782	KEYSPAN	1254 AUGUSTINA AVE	QUEENS

CLOSED STATUS TANK FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 8 **22−88 MOTT AVENUE** **Spill Number: 9809570** **Close Date: 12/07/1998**
22−88 MOTT AVENUE FAR ROCKAWAY, NY TT−Id: 520A−0127−753

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1469 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 2288 MOTT AVENUE
Revised zip code: NO CHANGE

Source of Spill:	PRIVATE DWELLING	Spiller:	RUSSELL FURIA − 22−88 MOTT AVENUE	Spiller Phone:	(516) 493−3400
Notifier Type:	Responsible Party	Notifier Name:	RUSSELL FURIA	Notifier Phone:	(516) 493−3400
Caller Name:	RUSSELL FURIA	Caller Agency:	CONSULTING ENGINEER	Caller Phone:	(516) 493−3400
DEC Investigator:	MMMULQUE	Contact for more spill info:	RUSSELL FURIA	Contact Person Phone:	(516) 493−3400

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/30/1998		TANK FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

UNDERGROUND TANK BEING REMOVED

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN DEC WAS NOT NOTIFIED FOR TANK REMOVAL MR. RUSSELL FURIA SAID THE TANK IS 5,000 GAL. CAPACITY (OUR DATABASE SHOWS 3,000) WAS USED FOR #5,6 OIL IS NOW #2 OIL. CONTAMINATED SOIL

CONTAINED #6, NOT #2 CONSULTING FIRM WILL SUBMIT APPLICATION FOR TANK REMOVAL. CONSULTANT REMOVED CONTAMINATED SOILS. ENDPOINT SAMPLES ARE BELOW DETECTION LIMITS. NO FURTHER ACTIONS REQUIRED.

Map Identification Number 9 **12−13 NELSON ST** **Spill Number: 9303657** **Close Date: 06/21/1993**
12−13 NELSON ST QUEENS, NY TT−Id: 520A−0128−670

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1664 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1213 NEILSON ST
Revised zip code: 11691

Source of Spill: PRIVATE DWELLING Spiller: UNK Spiller Phone:
Notifier Type: Local Agency Notifier Name: Notifier Phone:
Caller Name: RICARDO FREYRE Caller Agency: NYC DEP Caller Phone: (718) 595−6777
DEC Investigator: CAMMISA Contact for more spill info: Contact Person Phone:

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/15/1993	06/21/1993	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

TANK LEAKING IN BASEMENT NYC DEP HAZMAT WAS NOTIFIED (718)595−4670.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 10 **12−13 NEILSON ST** **Spill Number: 9303442** **Close Date: 06/16/1993**
12−13 NEILSON ST FAR ROCKAWAY, NY TT−Id: 520A−0126−063

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1664 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1213 NEILSON ST
Revised zip code: NO CHANGE

Source of Spill: PRIVATE DWELLING
Notifier Type: Responsible Party
Caller Name: GIL GOLD
DEC Investigator: CAMMISA

Spiller: RELATED MGT CO.
Notifier Name:
Caller Agency: RELATED MGT CO.
Contact for more spill info:

Spiller Phone:
Notifier Phone:
Caller Phone: (718) 731−1055
Contact Person Phone:

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/15/1993	06/16/1993	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	POUNDS	0	POUNDS	SOIL

Caller Remarks:

SPILL IN BASEMENT − IS CONTAINED − WOULD LIKE CALL BACK. WILL HAVE TANK COMPANY REPAIR SMALL LEAK.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was S. CAMMISA

Map Identification Number 11 **NEXT TO** **Spill Number: 0509035** **Close Date: 02/02/2006**
22−54 NAMEOKE AVE. ROCKAWAY, NY TT−Id: 520A−0125−203

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1822 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: 2254 NAMEOKE AVE.
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	CHANDLER DEVELOPMENT CORP	Spiller Phone:	(718) 217−4900
Notifier Type:	Fire Department	Notifier Name:	DISPATCH	Notifier Phone:	( ) −
Caller Name:	MICHAEL MONACO	Caller Agency:	FDNY HAZMAT 1	Caller Phone:	(347) 203−6886
DEC Investigator:	SFRAHMAN	Contact for more spill info:	MICHAEL MONACO	Contact Person Phone:	(347) 203−6886

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.

Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/27/2005		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	GROUNDWATER

Caller Remarks:

50−100 gallons spilled. Some puddling − putting down oil pads 250 gallon tank leaking outside − construction site possibly from previous home that was on the site or someone dumped it here. possibly all the way down to water table Attempted to contact the company − unable to possibly due to the hour.

DEC Investigator Remarks:

10.28.05 Sharif −I spoke with Michael Monaco of FDNY. He said they put speedy dry and soak pad to absorb the oil. It was a tank leaking on a construction site. No responsible party was available at night to start the clean up.An ECO was sent out to hold the PR for clean up and necessary law inforcement. Later today I called the RP’s office and told them to start the clean up immediately. A CSL letter was also sent to Chandler Development Corp 189−07 Jamaica Avenue, Hollis, NY 11423 Ph: 718−217−4900, Fax: 718−217−4929 02/02/06 Sharif//Report from PTC. They pumped out the oil water mix from the site. Contaminated soil was removed for disposal.End point sample result indicated minor presence of VOC/SVOC’S.Waste disposal manifest and lab result were included.NFA required.

CLOSED STATUS TANK TEST FAILURES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 12 **13−11 BAYPORT PLACE** **Spill Number: 8801169** **Close Date: 11/14/1991**
13−11 BAYPORT PLACE NEW YORK CITY, NY TT−Id: 520A−0125−345

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1043 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1311 BAYPORT PLACE
Revised zip code: NO CHANGE

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: NY TELEPHONE Spiller Phone:
Notifier Type: Tank Tester Notifier Name: Notifier Phone:
Caller Name: ROY BERG Caller Agency: FENLEY & NICHOL Caller Phone: (516) 586−4900
DEC Investigator: BATTISTA Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
05/06/1988	11/14/1991	TANK TEST FAILURE	2−343986	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	−1.00	GALLONS	0.00	GALLONS	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

10K TNAK, L R = GROSS VISIBLE LEAK. 5/23 : 10K TANK, #2 FUEL, L R = −0.307 GPH. TANK TEST ONLY.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 13 **101ST POLICE PRECINT** **Spill Number: 9412991** **Close Date: 10/02/1997**
16−12 MOTT AVENUE QUEENS, NY TT−Id: 520A−0128−741

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1184 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: 1612 MOTT AVENUE
Revised zip code: NO CHANGE

Source of Spill: NON−MAJOR FACILITY (>1100 GAL) Spiller: NYPD Spiller Phone: (718) 337−5217
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: GREG FASANO Caller Agency: PETROLEUM CONST. Caller Phone: (718) 385−8800
DEC Investigator: GUTIERREZ Contact for more spill info: Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
12/22/1994		TANK TEST FAILURE	2−342912	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	POUNDS	0	POUNDS	AIR

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

1 − 550 GALLON TANK VAC TESTED BELOW MIN. ALLOWED

DEC Investigator Remarks: DEC INVESTIGATOR REMARKS NOT AVAILABLE FOR THIS SPILL ACCORDING TO THE LAST UPDATE.

The following DEC Investigator Remarks were available prior to 1/1/2002:

550−GALLON GASOLINE TANK CLOSED IN PLACE ON AUGUST 10, 1995. SITE INVESTIGATION DID NOT INDICATE SIGNIFICANT IMPACT TO SOIL NEAR TANK. GROUNDWATER CONTAMINATION AT SITE MAY BE FROM OFF−SITE SOURCE. SEPARATE INVESTIGATION OF POSSIBLE SOURCE (GAS STATION

ACROSS MOTT AVENUE) CONTINUING.

Map Identification Number 14 **CLOSED−LACKOF RECENT INFO** **Spill Number: 8706832** **Close Date: 03/04/2003**
19020 NEW HAVEN AVE. NEW YORK CITY, NY TT−Id: 520A−0130−052

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1189 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 1920 NEW HAVEN AVE.
Revised zip code: NO CHANGE

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER Spiller: ST. MARY'S CHURCH Spiller Phone: (718) 327−1133
Notifier Type: Tank Tester Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: ADMIN. CLOSED Contact for more spill info: Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/11/1987		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	−1.00	POUNDS	0.00	POUNDS	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

5K TANK FAILED WITH A LEAK RATE OF −.151 G/HR.CLOSED DUE TO LACK OF ANY RECENT INFO− DOES NOT MEET ANY CLEAN UP REQUIREMENTS.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ADMIN.CLOSED 03/04/2003−Closed Due To The Nature / Extent Of The Spill Report

Map Identification Number 15 **CLOSED−LACKOF RECENT INFO** **Spill Number: 8706791** **Close Date: 03/04/2003**
19−20 NEW HAVEN AVENUE FAR ROCKAWAY, NY TT−Id: 520A−0133−470

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1189 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 1920 NEW HAVEN AVENUE
Revised zip code: NO CHANGE

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ST.MARY'S STAR OF THE SEA	Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	ADMIN. CLOSED	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/10/1987		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	−1.00	POUNDS	0.00	POUNDS	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

5K TANK SYSTEM,COULDN'T MAINTAIN LEVEL IN STANDPIPE.CLOSED DUE TO LACK OF ANY RECENT INFO−DOES NOT MEET ANY CLEAN UP REQUIREMENTS.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ADMIN.CLOSED 03/04/2003−Closed Due To The Nature / Extent Of The Spill Report

Map Identification Number 16 **SAINT MARYS STAR OF SEA** **Spill Number: 0307675** **Close Date: 09/14/2004**
19−20 NEW HAVEN AVENUE FAR ROCKAWAY, NY TT−Id: 520A−0133−469

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1189 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 1920 NEW HAVEN AVENUE
Revised zip code: NO CHANGE

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Tank Tester
Caller Name: PHIL FAZIN
DEC Investigator: MXTIPPLE
Spiller: PHIL FAZIN − SAINT MARYS STAR OF SEA
Notifier Name: PHIL FAZIN
Caller Agency: A−1 CROWN LEAK CORPOATION
Contact for more spill info: PHIL FAZIN
Spiller Phone: (516) 375−5890
Notifier Phone: (516) 375−5890
Caller Phone: (516) 375−5890
Contact Person Phone: (516) 375−5890

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/21/2003		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	5000	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks: NO REMARKS GIVEN FOR THIS SPILL

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 10/21/03 TJD @ Duty Desk TTF letter sent to facility representative.

11/13/2003 Sangesland spoke with James Menzies (facilities manager for the site). He had not received a prior letter, so Sangesland faxed a new TTF letter to his office. (718−327−3276)

7/9/04 Tipple called James Menzies to inquire on the status of the work to date. Repairs made//line to a boiler that had been removed had not been properly sealed/// James will forward paperwork to DEC.

9/14/04 Tank exposed..as per conversation with J Menzies bld. Mgr. the old lines were on top of the tank, and were exposed and removed at the time of excavation. Visual inspection revealed no contamination// letter received///NFA

Map Identification Number 17 **APARTMENT BUILDING TTF** **Spill Number: 0904364** **Close Date: 10/29/2009**
15−02 MOTT AVENUE FAR ROCKAWAY, NY 11691 TT−Id: 520A−0229−566

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1521 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: 1502 MOTT AVENUE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNK	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JMKRIMGO	Contact for more spill info:	MARLIN JOESPH	Contact Person Phone:	(718) 624−4842

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/14/2009		TANK TEST FAILURE	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

Tank test failure of two 5,000 gallon tanks at above address. Small leakage in the fuel lines, unk of amount spilled. Will evacuate tanks to detirmine the problem fix lines if needed.

DEC Investigator Remarks:

Sangesland spoke to PTC. Tanks were pumped out, PTC provided a proposal to repair the lines and retest. TTF Letter sent to Property Manager: Related Management Attn: Peter Hoyle 423 West 55th St − 9th Flr New York, NY 10019

8/11/09. John from ATC (consultant) called. 2x5000 gal #2 oil tanks failed test (dry leak). Both tanks encased in concrete and all piping above ground. Tanks were tested isolated from piping. Leak most likely at the top part of tanks. They proposed clean up tanks, breake and remove concrete from the top and visually inspect them form inside. If holes found close to the top, then repair or close tanks. If holes close to the middle of the tanks then concrete encasing should be removed and tanks examined for

evidence of leaks. The proposed scope of work will be submitted before August 27. JK.

1029/09. J.Krimgold reviewed the Closure report submitted by ATC and dated 10/23/09. Based on the data presented, both tanks and associated piping were aboveground. However tanks were incased in the concrete. Both tanks, associated piping and incasement were removed. No evidance of of relese was found. Case closed.

Map Identification Number 18 **APART** **Spill Number: 0800413** **Close Date: 06/18/2008**
10−14 NEILSON STREET FAR ROCKAWAY, NY TT−Id: 520A−0214−413

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1854 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: 1014 NEILSON STREET
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	MANAGER − APART	Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	bkfalvey	Contact for more spill info:	MANAGER	Contact Person Phone:	(212) 873−4919

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/10/2008		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
	10000	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks:

FAILED TEST: WILL EMPTY TANK

DEC Investigator Remarks:

5/6/08 received call from Bernie of NYC Tank Testing (917)648−5551. Tank to be pulled and endpoint samples to be taken. Will submit PBS closure application. Working with Rene Lewis on tank removal. Will call me when tank is to be removed. bf

5/7/08 bf: sent ttf letter to: Ohad Badani Neilson Gardens, Inc. 155 Riverside Drive New York, NY 10024

5/30/08 Received messages from Rene Lewis (917)214−6670 on 5/28 and 5/29. Tank was removed. He was told that the closure application was submitted. No application received yet as per DEC database. When he arrived on−site, holes were already cut in tank and oil was entering through holes. 65 tons contaminated soil removed. 10 endpoint samples taken. They will be installing new tank. He will tell them they need to supply application. Spill closure report will follow within 10 days. bf

6/18/08 Received hansd delivered closure report from Rene Lewis on 6/13/08. Sampled through tank bottom and tank sides. Removed tank. Excavated approx. 65 tons of contaminated soil. All contaminaants non−detect. Tank closure application and application for new AST attached and sent for processing. Rene called today and requested NFA letter after closure. faxed letter to him at (718)638−3181. Mailed letter to Mr. Badani at the address above. NFA. bf

Map Identification Number 19 **327 BCH 19TH ST** **Spill Number: 9013017** **Close Date: 02/23/1993**
327 BEACH 19TH STREET NEW YORK CITY, NY TT−Id: 520A−0133−471

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1880 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ST. JOHN'S HOSPITAL	Spiller Phone:	(718) 868−7680
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:	ROBERT GANDOLFO	Caller Agency:	TANK TEST INC	Caller Phone:	(718) 789−3770
DEC Investigator:	O'DOWD	Contact for more spill info:		Contact Person Phone:	

Category: Known release which created a fire/explosion hazards (inside or outdoors), drinking water supply contamination, or significant releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/21/1991	02/23/1993	TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	−1.00	UNKNOWN	0.00	UNKNOWN	SOIL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
		Unknown	0.00	UNKNOWN

Caller Remarks:

20K TANK FAILED HORNER EZY CHECK,SYSTEM TEST, VISUAL GROSS LEAK,WILL REPAIR VISUAL LEAK AT PUMP FLANGE IN BASEMENT,WILL RETEST,SPEEDY DRY APPLIED & WILL PICK UP & DISPOSE.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 20 **ST JOHNS EPISCOPAL HOSPIT** **Spill Number: 0204866** **Close Date: 07/11/2006**
327 BEACH 19TH ST FAR ROCKAWAY, NY TT−Id: 520A−0133−468

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1880 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER Spiller: ST JOHNS EPISCOPAL HOSPIT Spiller Phone:
Notifier Type: Tank Tester Notifier Name: JOHN LEDDY Notifier Phone: (631) 321−4670
Caller Name: JOHN LEDDY Caller Agency: PROTEST ENTERPRISES Caller Phone: (631) 321−4670
DEC Investigator: iabeilby Contact for more spill info: Contact Person Phone:

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/07/2002		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	20000	Alternate Test per 613.5a2v	0.00	UNKNOWN

Caller Remarks:

u/g tank failed vacum test

tank will be uncovered and retested dry leak problem at top of tank

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DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO

7/11/06 − iabeilby: closed. Spill due to tank test failure on 8/7/02. Retested and passed tank test on 4/16/03.

Map Identification Number 21 **APARTMENT BLDG.** **Spill Number: 0403513** **Close Date: 10/06/2008**

20−30 ELK DR FAR ROCKAWAY, NY TT−Id: 520A−0125−022

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1915 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 2030 ELK DR
Revised zip code: NO CHANGE

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	JIM MELNICK − APARTMENT BLDG.	Spiller Phone: (631) 321−4670
Notifier Type:	Tank Tester	Notifier Name:	ALBERTO LOPEZ	Notifier Phone: (631) 321−4670
Caller Name:	JIM MELNICK	Caller Agency:	PRO TEST	Caller Phone: (631) 321−4670
DEC Investigator:	MJHAGGER	Contact for more spill info:	JIM MELNICK	Contact Person Phone: (631) 321−4670

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

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Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/01/2004		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#6 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	4000	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks:

Tank Test failure.

DEC Investigator Remarks:

9/15/2005 − Jim Melnick of Pro Test stated that their was a new tank installed at the site about a month ago and they will be removing the existing tank and testing the soils within the next 30−days.

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD send TTF letter to:

Avi Slansky

20−30 Elk Assoc.

129−09 26th Street, Suite 301

Flushing, NY 11354

07/22/04.Pro Test sent a letter stating that they will EIR the tank by 7/26/04. YK.

9/28/07 − Haggerty − I asked Brian Falvey from our PBS unit in NYC to accompany me to the site for an inspection. I had previously made countless attempts to get Mr. Slansky (718−463−1200), property manager from Wavecrest, to take care of this open spill. Before I took over management of this site in January ’07, Ralph Keating made multiple attempts to get spill addressed over the course a year.

Old tank partially uncovered with boards over it for the past 3 years (located directly in the walkway to the building)
According to the Building Super, nothing has changed since the tank was tested on 7/1/04. The tank should have been closed out before the registration expired. Also, a new tank was installed approximately 2.5yrs ago inside the apartment complex basement. This tank was never registered or Tightness Tested. I attached a picture in edocs showing the tanks condition

PBS Conference scheduled for 10/23/07.

10/23/07 − Haggerty − Met with DEC lawyer Scott Owens, DEC Inspector Brian Falvey, and Property Manager Avi Slansky at PBS conference. Wavecrest Management fined $10,000 and ordered to complete tank removal by the end of the year.

12/28/07 − Haggerty − Excavation and Tank removal begins began the day before. Spoke with John Leddy of Protest (631−321−4670). Over−excavation completed creating a 18*30ft trench. Informed John that for every linear 15ft of trench, 5 grab samples must be collected for analysis. Therefore, a total of 10 samples (2 bottom and 8 sidewall)

10/6/08 − Haggerty − Received Spill Closure Report. All endpoint samples clean. Spill Closed

Map Identification Number 22 **KINGDOM HALL JEHOVA WIT** **Spill Number: 9914058** **Close Date: 11/03/2005**
2360 BROOKHAVEN AVE FAR ROCKAWAY, NY TT−Id: 520A−0128−097

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1924 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: GASOLINE STATION OR PBS FACILITY
Notifier Type: Tank Tester
Caller Name: RICKY ROUFF
DEC Investigator: RHFILKIN

Spiller:
Notifier Name: RICKY ROUFF
Caller Agency: STATE ENV SERVICES
Contact for more spill info: ERROL ST MARIE

Spiller Phone:
Notifier Phone: (718) 265−3355
Caller Phone: (718) 265−3355
Contact Person Phone: (718) 337−5812

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/13/2000		TANK TEST FAILURE	NO	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	2500	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks:

gross failure

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND

11/3/05 − Owner says tank failed test but then was retested and passed. He has no documentation though. PBS system has the 3/13/2000 failure, no mention of a retest or replacement, but shows tank passed test 4/4/05. Since tank appears to now pass tests without having been replaced, I'll assume original failure was incorrect and there was no spill. Closed 11/3/05 − Filkins

CLOSED STATUS UNKNOWN CAUSE SPILLS AND OTHER CAUSE SPILLS IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 23 **VEHICLE REPAIR SHOP** **Spill Number: 1304092** **Close Date: 12/20/2013**
10−09 CORNAGA AVE FAR ROCK−A−WAY, NY TT−Id: 520A−0289−022

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (4)
Approximate distance from property: 516 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 1009 CORNAGA AVE
Revised zip code: NO CHANGE

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Other
Caller Name:
DEC Investigator: vszhune
Spiller: FRANK GALDUN − UNKNOWN
Notifier Name:
Caller Agency:
Contact for more spill info: FRANK GALDUN
Spiller Phone:
Notifier Phone:
Caller Phone:
Contact Person Phone: (631) 617−6200

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/16/2013		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	UNKNOWN	0	UNKNOWN	GROUNDWATER
GASOLINE	PETROLEUM	0	UNKNOWN	0	UNKNOWN	GROUNDWATER

Caller Remarks:

releases from dry well in pact ground water clean up pending

DEC Investigator Remarks:

7/16/2013 − Feng − Spoke to Frank Galdun (631−617−6200, frankg4@optonline.net). He is doing the work for the interested/potential buyer. The property is to sale. The site is formerly a gasoline station, and now a repair shop. They removed the tanks, dispensers and piping in 1999. For the investigation he has done, no tanks were found during GPR survey. They installed 6−7 soil borings onsite. They did not find any contamination in soil borings, but some groundwater contamination.

They sampled the dry wells sediment and one of them show contamination. High VOCs in groundwater in the soil boring next to the aforementioned dry well, i.e. 1,134 ppb VOCs. The sediment was at 5 feet deep, but believed to be deeper when installed. The investigation report will be forwarded to my attension.

assigned the case to DEC V. Zhune for followup as per DEC J. Vought.

12/20/13−Arthur Baldwin from PAL Environmental Services emailed The Focused Subsurface Site Investigation dated Phase I indicated that nine gasoline USTs were removed in 1999. The site is used solely as a vehicle repair operation. All activities were completed on June 28, 2013. GPR survey identified no subsurface anolmalies at the site. Six soil boring were drilled. Four selected soil borings (B1 through B4)were drilled to the water table.

All soil borings werei nstalled at former UST areas, former dispenser area, at one or two on−site drywells and at a hydraulic upgradient position relative to all site features (B1). One grab soil sample was collected from each of the two drywells at the site. One groundwater sample each ws collected for laboratory analysis from B1 through B4. MECC also collected a shalow soil sample (HA−1 3')from an area north od the site building exterior where one aboveground waste oil storage tank (AST) was observed.

Map Identification Number 24 **UNKNOWN** **Spill Number: 9702230** **Close Date: 10/16/1997**
1210 BEACH CHANNEL DR ROCKAWAY, NY TT−Id: 520A−0133−473

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (5)
Approximate distance from property: 562 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11691

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Federal Government	Notifier Name:	ANONYMOUS	Notifier Phone:	
Caller Name:	JEFF BRAY	Caller Agency:	USCG	Caller Phone:	(212) 668−7920
DEC Investigator:	WESTERLIND	Contact for more spill info:	ABOVE	Contact Person Phone:	

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/21/1997		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
OTHER	OTHER	0	GALLONS	0	GALLONS	SURFACE WATER
The following material(s) was dropped or revised by the NYS DEC. Call Toxics Targeting for more information						
OTHER PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	

Caller Remarks:

ORIGINAL CALLER COMPLAINED OF SHEEN ON WATER IN AREA POSS COMING FROM LOCAL GAS STATIONS

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 25 **PRIVATE HOME−SEWAGE** **Spill Number: 0713846** **Close Date: 04/01/2008**
2254 CORNAGA AVE FAR ROCKAWAY, NY TT−Id: 520A−0214−394

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1034 feet to the WSW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	PRIVATE DWELLING	Spiller:	UNDETERMINED FAULT	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	smsanges	Contact for more spill info:	GLADIS SKAUR	Contact Person Phone:	(718) 868−0206

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/31/2008		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
RAW SEWAGE	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

ON AND OFF FOR OVER A WEEK; CALLER HAS MADE MANY CALLS INCLUDING EPA AND DEP; ALL HAVE SAID THEY CAN DO NOTHING BUT SHE WANTS TO SPEAK WITH SOMEONE FROM DEC; NEIGHBORS HAVEING SIMILAR PROBLEMS; CALLER STATES THAT MATERIAL USUALLY GOES INTO THE BASMENT BUT THEY BLOCKED OFF THE PIPES SO THEY NO LONGER HAVE USE OF TOILET AND SEWAGE IS OVERFLOWING INTO YARD;

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 26 **HI AUTO SERVICE** **Spill Number: 9707778** **Close Date: 11/21/2008**
18−11 MOTT AVENUE FAR ROCKAWAY, NY TT−Id: 520A−0127−486

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1140 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: 1811 MOTT AVENUE
Revised zip code: NO CHANGE

Source of Spill: GASOLINE STATION OR PBS FACILITY
Notifier Type: DEC
Caller Name: JONATHAN KOLLEENY
DEC Investigator: hrpatel
Spiller: MR SAQIB − HI AUTO SERVICE
Notifier Name: JONATHAN KOLLEENY
Caller Agency: NYS DEC
Contact for more spill info: RICHARD PARK
Spiller Phone: (516) 488−2366
Notifier Phone: (718) 482−4933 ext.
Caller Phone: (718) 482−4933 ext.
Contact Person Phone: (718) 327−8776

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
03/28/1997		UNKNOWN	2−201286	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

DURING SITE ASSESSMENT OF POLICE PRECINCT ACROSS STREET, WELLS PUT IN AT POLICE STATION AND IN SIDEWALK BY GAS STATION FOUND CONTAMINATED GROUNDWATER. DATA SUGGESTS GAS STATION MAY BE SOURCE. GAS STATION HAS SIX OUT−OF−SERVICE TANKS. NO INFORMATION ON WHEN, HOW OR WHY TANKS WERE CLOSED.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL OWNER OF GAS STATION ASKED TO PERFORM ASSESSMENT OF CLOSED TANKS. YELLOWSTONE WILL DO ASSMT. WILL SUBMIT SITE PLAN SHOWING PROPOSED WELL/BORING LOCATIONS PRIOR TO WORK.

4/12/04−Vought−Spill transferred from Tibbe to Rommel as per Rommel.

11/14/08 − Austin − Transferred from C.O. back to Region − reassigned to Patel for followup − end

11/17/08−Hiralkumar Patel.

PBS #: 2−201286. PBS shows site as waste oil storer and had 275 gal waste oil tank in 2004 and at that time two 2000 gal gasoline tanks and six 550 gal other tanks were closed in place.

visited site. site currently has retails stores.

alternate addresses: 18−03 to 18−17 Mott Avenue, 18−06 to 18−18 Cornaga Ave

spoke to one of the tenants and as per him, there was an abandoned gas station and an active repair shop at the corner of Mott ave and Cornaga Ave about six years ago when he started his business. then owner demolished gas station and repair shop structure and built new retail stores.

gas station/repair shop was located at the corner of Mott Ave and Cornaga AVe: running from 18−03 to 18−07 along Mott ave and from 18−06 to 18−18 along Cornaga Ave.

fill box and vent pipe was observed in front of 18−15 and 18−17 Mott Ave

101st Precinct is located across the subject site on Mott ave. inspected sidewalk along precinct and found two monitoring wells in front of garage entrance.

Lt. Marrow or Sgt. Hartman 101st Precinct Ph. (718) 868−3400

spoke with Mr. Alkaifi, president of Tarik Holdings, building owner. as per him, site was redeveloped in 2005 and they have reports available. asked him to submit reports.

Abdo Alkaifi

site owner President Tarik Holding Corp. 1077 Bay 24th Street Far Rockaway, NY 11691−1801 contact: Khalil Alkaifi

owner's son Ph. (516) 668−7172 email: kalkaifi@aol.com, kalkaifi@yahoo.com

sent email to Khalil Alkaifi requiring submission of all avilable reports regarding cleanup.

11/21/08−Hiralkumar Patel. received fax from Mr. Alkaifi with tank closure report. abstract:

− removed six 550 gal gasoline USTs, two 2000 gal gasoline USTs and one 275 gal waste oil UST − all tanks were single wall steel tanks − tanks found to be in good condition after removal, no holes or pitting were observed − noo PID readings were observed during excavation or in any endpoint sample locations − all ancillary piping was removed and disposed of − total of 12 endpoint samples were taken − groundwater sample was collected from existing monitoring well on site − no contamination found in any endpoint samples or groundwater sample

discussed with DEC Austin. based on findings during tank removal, Austin asked to close the case.

case closed.

Map Identification Number 27 **STREET SPILL?** **Spill Number: 0800735** **Close Date: 05/28/2008**
11−43 MCBRIDE ST QUEENS, NY TT−Id: 520A−0217−590

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1294 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: 1143 MC BRIDE ST
Revised zip code: 11691

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RMPIPER	Contact for more spill info:	SYLVIA CLARK	Contact Person Phone:	(646) 360−4982

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/17/2008		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

Caller had no other info.

DEC Investigator Remarks:

Call back number is disconnected No way to confirm what problem is, or how large problem is. Will be assigned as a low priority drive by .

DECPiper performed inspection. Nothing seemed out of the ordinary. Closed.

Map Identification Number 28 **LIRR** **Spill Number: 0100123** **Close Date: 04/02/2002**
NAMEOKE ST/REDFERN AVE FAR ROCKAWAY, NY TT−Id: 520A−0131−886

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1489 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NAMEOKE AV/REDFERN AVE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	SAME − LIRR	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:	BILL KEENAN	Notifier Phone:	(718) 558−3081
Caller Name:	BILL KEENAN	Caller Agency:	LI RAILROAD	Caller Phone:	(718) 558−3081
DEC Investigator:	MXTIPPLE	Contact for more spill info:	BILL KEENAN	Contact Person Phone:	(718) 558−3081

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/04/2001		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
LUBE OIL	PETROLEUM	20.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

drum found on it’s side and dented − product leaked out − unk further cause − cleanup scheduled tomorrow

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 04/04/2001 SPOKE WITH BILL KEENAN, TRADEWINDS SCHEDULED TO DO CLEANUP 4/5/2001 WILL RUN STARS ON END PIONT SAMPLES 07/30/2001 04/02/2002 cleanup completed by LIRR

Map Identification Number 29 **15−02 MOTT AVENUE** **Spill Number: 9304779** **Close Date: 06/21/1995**
15002 MOTT AVENUE QUEENS, NY TT−Id: 520A−0128−672

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1521 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: 1502 MOTT AVE
Revised zip code: 11691

Source of Spill:	PRIVATE DWELLING	Spiller:	UNK	Spiller Phone:	
Notifier Type:	Citizen	Notifier Name:		Notifier Phone:	
Caller Name:	BETSY	Caller Agency:	NYC DEP	Caller Phone:	(716) 595−6777
DEC Investigator:	CAMMISA	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/16/1993	06/21/1995	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

LEAKING FROM TANK IN BASEMENT − NYC DEP WILL RESPOND − SLOW LEAK INVAULT 5000 AST CONTACTOR TO REPAIR TANK DISPOSE OF OIL.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 30 **INWOOD STATION − LIRR** **Spill Number: 9802015** **Close Date: 06/28/2005**
RED FERN AVE FAR ROCKAWAY, NY TT−Id: 520A−0131−885

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1573 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: REDFERN AVE
Revised zip code: 11691

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	LEWIS WUNDERLICH − LONG ISLAND RR	Spiller Phone:	(718) 558−3252
Notifier Type:	Responsible Party	Notifier Name:	LEWIS WUNDERLICH	Notifier Phone:	(718) 558−3252
Caller Name:	LEWIS WUNDERLICH	Caller Agency:	LONG ISLAND RAILROAD	Caller Phone:	(718) 558−3252
DEC Investigator:	Unassigned	Contact for more spill info:	LEWIS WUNDERLICH	Contact Person Phone:	(718) 558−3252

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/15/1998		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MERCURY	HAZARDOUS MATERIAL	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

spill may have occured any time from the mid 1980's till now

caller has already started to make arreangments for clean up

spill is to soil

DEC Investigator Remarks:

06−28−05: Spill transferred to Region 1 from Region 2 because spill is just over the border in Nassau County. The spill is mercury from a LIRR substation. It is being remediated under the VCA program , number V00391−1.

Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO

3/23/05 − Austin − Transferred from DeMeo to Tibbe − end

Map Identification Number 31 **CONSTRUCTION** **Spill Number: 0903973** **Close Date: 05/05/2010**
1152 NEILSON ST QUEENS, NY TT−Id: 520A−0232−164

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1842 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN
Notifier Type: Citizen
Caller Name:
DEC Investigator: HRAHMED

Spiller: UNK
Notifier Name:
Caller Agency:
Contact for more spill info: UNK

Spiller Phone:
Notifier Phone:
Caller Phone:
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/06/2009		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#6 FUEL OIL	PETROLEUM	0	UNKNOWN	0	UNKNOWN	

Caller Remarks:

did not see spill..anonymous caller; construction site is removing and cleaning up tank

DEC Investigator Remarks:

07/07/09−HRAHMED−As per DOB records the DDC Plbg $ htg applied for a permit to replace the oil boiler. Spoke to the operator of the contractor (212 391 0887). She said she will contact the plumber and have him call DEC.

5/5/10−HRAHMED−No oil spill observed, called in by anonymous person. due to lack of spill evidence, case closed.

Map Identification Number 32 **HOME** **Spill Number: 0613102** **Close Date: 03/06/2007**
1035 DICKINS STREET FAR ROCKAWAY, NY TT−Id: 520A−0133−575

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1900 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 1035 DICKENS ST
Revised zip code: 11691

Source of Spill: COMMERCIAL VEHICLE Spiller: RICH − MADISON OIL HEATING OIL P Spiller Phone: (718) 444−3400
Notifier Type: Other Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: smsanges Contact for more spill info: HOMEOWNER Contact Person Phone: (718) 337−5664

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/06/2007		OTHER	NO	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

LESS THEN 1/2 GALLON SPILLED ON THE STREET: AND ALL CLEANED UP

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 33 **1053 DICKENS AVENUE** **Spill Number: 9609624** **Close Date: 12/06/1996**

1053 DICKONS AVENUE
BAYS WATER
FAR ROCKAWAY, NY
TT−Id: 520A−0128−798

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1928 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: 1053 DICKENS ST
Revised zip code: 11691

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	LUZ EISEMANN	Notifier Phone:	(718) 327−0477
Caller Name:	LUZ EISEMANN	Caller Agency:	CITIZEN	Caller Phone:	(718) 327−0477
DEC Investigator:	O'DOWD	Contact for more spill info:	LUZ EISEMANN	Contact Person Phone:	(718) 327−0477

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/31/1996		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

CALLER KEEPS GETTING POCKETS OF OIL IN HER BACKYARD

DEC Investigator Remarks: DEC INVESTIGATOR REMARKS NOT AVAILABLE FOR THIS SPILL ACCORDING TO THE LAST UPDATE.

The following DEC Investigator Remarks were available prior to 1/1/2002:

HE SAID 11/04/96 2:25 P.M. FOR LUCIA EISEMAN W/CLAUDIA. BEST TIME CALL HER 9:00 A.M. 12/06/96 SURFACE SPILL CLEANUP DONE BR HOMEOWNER. 12/03/96 2:40 P.M. BUSY. 12/05/96 2:15 P.M. SPOKE TO LUCIA MIKE WILL BE GOING TO SITE TOMORROW WILL SEE.

Map Identification Number 34 **PRIVATE RESD** **Spill Number: 1006122** **Close Date: 09/03/2010**
13−77 GIPSON ST QUEENS, NY TT−Id: 520A−0255−679

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1984 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 1377 GIPSON ST
Revised zip code: NO CHANGE

Source of Spill:	PRIVATE DWELLING	Spiller:	BILL PATTELL − PETRO OIL CO	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	hrpatel	Contact for more spill info:	PETRO OIL CO	Contact Person Phone:	(800) 645−4328

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/02/2010		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	2.00	GALLONS	0.00	GALLONS	

Caller Remarks:

SPILLED IN CELLAR. NO INDICATION ON CLEANUP YET.

DEC Investigator Remarks:

09/03/10−Hiralkumar Patel. see also spill #: 1006120. spoke with Petro (at 7:50 PM on 09/02/10). about 2 gal oil leaked from oil filter on boiler onto concrete surface. spill cleaned up immediately. but spill happened near drain area and petro was not sure if any oil got into drain. they reported spill to NYC DEP.

case closed.

Map Identification Number 35 **PUBLIC SCHOOL 215** **Spill Number: 0108314** **Close Date: 11/16/2001**
535 BRIAR PL FAR ROCKAWAY, NY TT−Id: 520A−0124−445

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1998 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	PUBLIC SCHOOL 215	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:	MARGARET TENTLE	Caller Agency:	METRO OIL	Caller Phone:	(718) 383−1400
DEC Investigator:	JAKOLLEE	Contact for more spill info:		Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/16/2001		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#4 FUEL OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

during delivery there was pressure on line that caused product to back up out of fill pipe − clean up crew enroute

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KOLLEENY KOLLEENY AND VOUGHT VISITED SCENE AT 10:30 AM ON 11/16/01. METRO OIL COMPANY CLEANUP CREW PRESENT (HEADED BY PAUL LENOX), AS WELL AS SCHOOL CUSTODIAN (ROBERT CETINA, 718−327−0339). OIL SPILLED AT FILL PORT ONTO PAVEMENT, CONTAINED WITH SPEEDY DRY. DID NOT IMPACT SEWERS. CAUSE OF SPILL UNCERTAIN; DRIVER SPECULATED VENT MAY BE PARLTLY CLOGGED. ABOUT 3 BAGS OF SPEEDY DRY USED, CLEANUP CREW SHOVELED AND DISPOSED OF IT. DEC OBSERVED NO SIGNIFICANT RESIDUAL IMPACTS.

Map Identification Number 36 **BEHIND THIS ADDRESS** **Spill Number: 0512048** **Close Date: 01/19/2006**
13−25 CAFFREY AVE QUEENS, NY TT−Id: 520A−0133−472

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 2066 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 1325 CAFFREY AVE
Revised zip code: NO CHANGE

Source of Spill: PRIVATE DWELLING
Notifier Type: Other
Caller Name: DENNIS HUACON
DEC Investigator: SMSANGES
Spiller: MARY DUNNING − BEHIND THIS ADDRESS
Notifier Name: DENNIS HUACON
Caller Agency: NYCDEP
Contact for more spill info: MARY DUNNING
Spiller Phone: (718) 471−7300
Notifier Phone: (718) 595−4722
Caller Phone: (718) 595−4722
Contact Person Phone: (718) 471−7300

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/18/2006		OTHER	NO	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
RAW SEWAGE	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

pvc pipe , under a piece of ply wood in the backyard, is raw sewage running in a pit:

DEC Investigator Remarks:

Sangesland forwarded this to Selvin Southwell in DEC Water. Since there is no impact to surface water or a body of water, not a DEC issue. Ref to city DEP.

Map Identification Number 37 **CANAL** **Spill Number: 0606146** **Close Date: 10/10/2006**
22−55 BATTERY ROAD QUEENS, NY TT−Id: 520A−0122−754

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 2117 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: 2255 BATTERY ROAD
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	HRPATEL	Contact for more spill info:	ROBERT HERRIS	Contact Person Phone:	(516) 343−0465

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Unknown RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
08/28/2006		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	SURFACE WATER

Caller Remarks:

barge in water and construction of building is in procees next to the canal. clean up not yet in process.

DEC Investigator Remarks:

08/29/06−Hiralkumar Patel. received during off hours duty on 08/28/06. visited site. met Robert Herris. Mr. Herris went at site for fishing during low tide and found oil strip along coast line for about 30 ft. when i reached at site, it was dark and tide was high. found sheen on water body for about 5−6 ft wide from coast line. no odor. spoke with Mr. Crews at Coast Guard (case#: 809524) and they will send someone for investigation.

10/11/06−Hiralkumar Patel. spoke at Coast Guard. person will call back with details. received call from Mr. Sierra from coast guard. he responded site lateron and found nothing. he has closed the case.

based on coast guard’s information, case closed.

Map Identification Number 38 **RESIDENCE** **Spill Number: 0412964** **Close Date: 03/22/2005**
2 WILLIAMS COURT QUEENS, NY TT−Id: 520A−0130−051

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 2153 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN − UNKNOWN VESSEL	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	SEAN DONOHUHE	Notifier Phone:	(212) 689−1520
Caller Name:	SEAN DONOHUHE	Caller Agency:	NYC DEP	Caller Phone:	(212) 689−1520
DEC Investigator:	MXTIPPLE	Contact for more spill info:	BALUYOT, MRS	Contact Person Phone:	(718) 327−0845

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/11/2005		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

OIL SPILLED FROM BOILER WHILE BENG REPLACED. CLEAN UP IS NOT IN PROCESS. LOCATED IN THE BASEMENT.

DEC Investigator Remarks:

spoke with citizen, water from boiler spilled in alley and onto street. one tire on her car got dirty.

NFA//

Map Identification Number 39 **IN ROADWAY** **Spill Number: 9903496** **Close Date: 08/05/1999**
BATTERY RD & MCBRIDE ST QUEENS, NY TT−Id: 520A−0128−418

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2212 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: MC BRIDE ST / BATTERY RD
Revised zip code: 11691

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	DEP	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:	MR WONG	Notifier Phone:	(917) 769−4005
Caller Name:	DONALD CANNON	Caller Agency:	DEP	Caller Phone:	(718) 595−6777
DEC Investigator:	CAENGELH	Contact for more spill info:		Contact Person Phone:	

Category: Investigation indicates there was no spill.
Class: Any Type of RP Including No RP − No DEC Field Response − Corrective Action by Spill Response Not Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
06/26/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	40.00	GALLONS	40.00	GALLONS	SOIL

Caller Remarks:

abandond drums leaked − were contained in other drums − not requesting dec contact

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT/SANGESLAND Engelhardt was duty officer. Called Donald Cannon of DEP who clarified report saying there was no leak − just abandoned drums.

8/5/99 DRUM RUN PICK UP BY WINSTON PIN # 01036 (ABANDONED DRUM)/SEE SPILL #993008

Map Identification Number 40 **SPILL NUMBER 9903890** **Spill Number: 9903890** **Close Date: 07/08/1999**
13−02 REDFERN AVE QUEENS, NY TT−Id: 520A−0131−880

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING − LARGE SITE
Approximate distance from property: 2377 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: 1302 REDFERN AVE
Revised zip code: 11691

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: LONG ISLAND POWER AUTHORI Spiller Phone:
Notifier Type: Fire Department Notifier Name: Notifier Phone:
Caller Name: FF TIM REGAN Caller Agency: NYFD Caller Phone: (718) 476−6288
DEC Investigator: MCTIBBE Contact for more spill info: MR CLAUS Contact Person Phone: (516) 792−2643

Category: Known release which created a fire/explosion hazards (inside or outdoors), drinking water supply contamination, or significant releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/05/1999		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
TRANSFORMER OIL	PETROLEUM	0	GALLONS	0	GALLONS	SEWER

Caller Remarks:

fdny reporting a transformer fire at above location. a leak resulted from fire and product has gone into sewer, unknown amounts.
long island power authority to clean.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE SEE ALSO 99−03887. CLEANED BY LIPA.

Map Identification Number 41 **REDFERN HOUSING −NYCHA** **Spill Number: 9510331** **Close Date: 12/05/2012**
14−68 BEACH CHANNEL DR QUEENS, NY TT−Id: 520A−0131−879

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING − LARGE SITE
Approximate distance from property: 2377 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: 1468 BEACH CHANNEL DR
Revised zip code: 11691

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Responsible Party
Caller Name: ED MALONE
DEC Investigator: jkkann

Spiller: ED MALONE − NYC HOUSING
Notifier Name: MIKE SUSCA
Caller Agency: NYC HOUSING
Contact for more spill info: CALLER

Spiller Phone: (203) 306−8480
Notifier Phone: (203) 289−8631
Caller Phone: (212) 306−8480
Contact Person Phone:

Category: Known or probable release, where, without action, there is a potential for a fire/explosion hazard (indoors or outdoors), contamination of drinking water supplies, or significant release to surface waters.
Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/16/1995		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#4 FUEL OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

TRC WAS TANK TESTING FOR GROUND WATER MONITORING WELLS AND NOTICED OIL

DEC Investigator Remarks:

12/19/05: This spill transferred from J.Kolleeny to S.Kraszewski.

03/23/06: This spill transferred to K.Tang − SK

09/23/10: J.Kann − spill transferred from K. Tang to J.Kann.

5/29/12: J.kann − assigned priority p0 because little information is available.

07/18/12 − J.Kann − IWP received on 7/16/12.

10/17/12: J.Kann − met with NYCHA on August 16 to discuss possible closure sites. Redfern Houses was presented by NYCHA's consultant, Drew Pardus, for closure. Reviewed files and determined site can be presented for closure to the panel. Visited site on October 17 to observe gauging of existing wells at the site and to inspect the boiler room walls along the tank area. No product was detected in any wells. No indication of petroleum seepage (historic or present) was noted on the boiler room walls. Site will be presented for closure.

12/5/12: J.kann − presented site to spill closure panel today. Spill closure was approved. Edoced summary of presentation and facts related to closure. NFA Closure Letter prepared and sent to NYCHA (also edoced).

Map Identification Number 42 **1130 BEACH 9TH ST** **Spill Number: 9107338** **Close Date: 10/10/1991**

1130 BEACH 9TH ST FAR ROCKAWAY, NY TT−Id: 520A−0125−750

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 2423 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN
Notifier Type: Citizen
Caller Name: JAN SWEIG
DEC Investigator: SIGONA

Spiller:
Notifier Name:
Caller Agency:
Contact for more spill info:

Spiller Phone:
Notifier Phone:
Caller Phone: (718) 471−4015
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/08/1991	10/10/1991	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	0	GALLONS	0	GALLONS	AIR

Caller Remarks:

REFERRED TO DEP ODOR COMPLAINT UNIT & DEC AIR UNIT.

DEC Investigator Remarks: DEC INVESTIGATOR REMARKS NOT AVAILABLE FOR THIS SPILL ACCORDING TO THE LAST UPDATE.

The following DEC Investigator Remarks were available prior to 1/1/2002:

10/10/95: This is additional information about material spilled from the translation of the old spill file: NOXIOUS ODOR.

Map Identification Number 43 **MOTT BASIN** **Spill Number: 9508409** **Close Date: 12/01/1995**
SHERIDAN BLVD INWOOD, NY TT−Id: 520A−0088−516

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (5)
Approximate distance from property: 2493 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: SHERIDAN BLVD / MOTT BASIN
Revised zip code: 11096

Source of Spill:	UNKNOWN	Spiller:	EAGLE OIL	Spiller Phone:	(516) 239−8800
Notifier Type:	Federal Government	Notifier Name:	CITIZEN	Notifier Phone:	
Caller Name:	DOOLEY	Caller Agency:	US COAST GUARD	Caller Phone:	(212) 668−7920
DEC Investigator:	AYLEUNG	Contact for more spill info:	SAME	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/10/1995		UNKNOWN	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	AIR

Caller Remarks:

CITIZEN CALLED THE COAST GUARD TO REPORT A HEAVY SMELL OF GAS

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was LEUNG EAGLE GAS STATION IS DOING TANK WORK ODOR FROM THE GAS STATION, USCG ON SCENE, NO SPILL

ACCORDING TO WORKER ON SITE, TANK WAS CLEANED NOT REPAIRED,NO SPILLAGE NOTED

CLOSED STATUS HAZARDOUS SPILLS − MISC. SPILL CAUSES − EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM AND STORMS − WITHIN 1/2 MILE SEARCH RADIUS.
All spills mapped and profiled within 1/8 mile. Between 1/8 mile and 1/2 mile search radius, spills reported to be greater than 100 units and spills reported in the NYSDEC Fall 1998 MTBE Survey are mapped and profiled. Spills reported to be less than 100 units are listed in a table at the end of this section.

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 44 **OPPOSITE 1044 BEACH 21 ST** **Spill Number: 0408292** **Close Date: 12/14/2004**
(MUNICPLE PARKING LOT) QUEENS, NY TT−Id: 520A−0130−062

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 145 feet to the SE*

ADDRESS CHANGE INFORMATION
Revised street: OPPOSITE 1044 BEACH 21 ST
Revised zip code: 11691

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Local Agency
Caller Name: MAHENDRA RAMNARINE
DEC Investigator: JMKRIMGO

Spiller: UNKNOWN
Notifier Name: MAHENDRA RAMNARINE
Caller Agency: DEP HAZMAT
Contact for more spill info: MAHENDAR RAMNARINE

Spiller Phone:
Notifier Phone: (718) 595−4682
Caller Phone: (718) 595−4682
Contact Person Phone: (718) 595−4784

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/27/2004		ABANDONED DRUM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

TWO DRUMS: 55 GALLON: WILL PLACE TAPE AROUND AREA:

DEC Investigator Remarks:

12/14/04 TJD Drum emptied as part of drum run on 12/10/04. No further action required. Spill closed.

Map Identification Number 45 **DRUM RUN** **Spill Number: 1204054** **Close Date: 08/02/2012**
BEACH 21ST ST AND MOTT AVE AT INTERSECTION − QUEENS, NY TT−Id: 520A−0275−782

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 293 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: BEACH 21ST ST / MOTT AVE
Revised zip code: NO CHANGE

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Other
Caller Name:
DEC Investigator: RMPIPER
Spiller: ABANDONED DRUM
Notifier Name:
Caller Agency:
Contact for more spill info: JEREMY HILLER
Spiller Phone:
Notifier Phone:
Caller Phone:
Contact Person Phone: (917)5768040

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/25/2012		ABANDONED DRUM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTEWATER	OTHER	55.00	UNKNOWN	0.00	UNKNOWN	

Caller Remarks:

in parking lot for Train Station − blue 55 gallon plastic drum − not leaking −

DEC Investigator Remarks:

8/1/12− 55 gal pumped. spill closed.

Map Identification Number 46 **FAR ROCKAWAY SHOPPING MALL** **Spill Number: 0809169** **Close Date: 11/14/2008**
MOTT AVE., BETWEEN B. CHANNEL DRIVE & CENTRAL AVE FAR ROCKAWAY, NY TT−Id: 520A−0224−138

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (4)
Approximate distance from property: 326 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	COMMUTER BUSES	Spiller Phone:	
Notifier Type:	Citizen	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RWAUSTIN	Contact for more spill info:		Contact Person Phone:	

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.

Class: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/12/2008		DELIBERATE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	−1.00	GALLONS	0.00	GALLONS	

Caller Remarks:

Notifier reported that commuter buses were using parking lot in mall to dump cranksae oil and other materials adjacent to lamp post in the lot. Requested investigation of dumping

DEC Investigator Remarks:

11/13/08 −Austin − Spoke with Mr. Bernard − He indicated that problem had ocurred for some time − cummuter buses use parking lot for pickup point, and were now using this site for dumping oil, trash, and other polluting issues. I indicated that we would investigate the spill, and see if a conservation officer could check periodically at the site to see if we could catch who was doing the dumping. − end

11/14/08 − Austin − I investigated the complaint − shopping mall is in general disrepair, with potholes in parking lot − at least four large commuter buses were in the parking lot, including at least two of them idling. Located the pothole adjacent to the lamp post (see photos in eDocs file), and determined that there was a minor amount of oil in this hole − shallow hole was filled with muddy water and trash. Also, noted large private transformer vaults adjacent to where buses were parked, and they had no oil in them. No evidence of any serious oil dumping in hole or parking lot. Case closed − idling bus observation referred to DLE for investigation. − end

Map Identification Number 47 **SPILL NUMBER 0000082** **Spill Number: 0000082** **Close Date: 04/03/2000**
1920 MOTT AVE FAR ROCKAWAY, NY TT−Id: 520A−0124−122

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 623 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	CALLER − FINEST FUEL	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	MARY FINGER	Caller Agency:	FINEST FUEL	Caller Phone:	(718) 782−4523
DEC Investigator:	MXTIPPLE	Contact for more spill info:	CALLER	Contact Person Phone:	

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/03/2000		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	5.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

hose broke during fueling. leak is stopped. cleanup started.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE NYC SANITATION DEPARTMENT DID CLEANUP

Map Identification Number 48 **2230−40 MOTT AVENUE** **Spill Number: 9710254** **Close Date: 02/25/2003**
2230−40 MOTT AVENUE FAR ROCKAWAY, NY TT−Id: 520A−0128−828

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1011 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 2230 MOTT AVENUE
Revised zip code: 11691

Source of Spill: PRIVATE DWELLING | Spiller: | Spiller Phone:
Notifier Type: Other | Notifier Name: MARVIN MONTGOMERY | Notifier Phone: (718) 932−9075
Caller Name: CHARLIE BOETTIGER | Caller Agency: MYSTIC TRANSPORTATION | Caller Phone: (718) 932−9075
DEC Investigator: TOMASELLO | Contact for more spill info: | Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/06/1997		HUMAN ERROR	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#6 FUEL OIL	PETROLEUM	100.00	GALLONS	100.00	GALLONS	SOIL

Caller Remarks:

APARTMENT BUILDING. STICK LINE CAP LEFT OFF OF TOP OF TANK BY SUPERINTENDANT. SPILLED INTO TANK ROOM. NO DRAINS. BEING CLEANED UP.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 49 **NYNEX BUILDING** **Spill Number: 9608080** **Close Date: 10/02/1996**
13−11 BAYPORT PLACE FAR ROCKAWAY, NY TT−Id: 520A−0127−259

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1043 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1311 BAYPORT PLACE
Revised zip code: NO CHANGE

Source of Spill: COMMERCIAL/INDUSTRIAL | Spiller: MIKE COLONE − NYNEX | Spiller Phone: (718) 224−4258
Notifier Type: Other | Notifier Name: MIKE COLONE | Notifier Phone: (718) 224−4258
Caller Name: JOHN OSWALD | Caller Agency: FRED A COOK INC | Caller Phone: (914) 739−3300
DEC Investigator: ADZHITOM | Contact for more spill info: JOHN OSWALD | Contact Person Phone: (914) 739−3300

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/27/1996		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	150.00	GALLONS	150.00	GALLONS	SOIL

Caller Remarks:

pump malfunctioned and shut down spilling 150 gallons into the containment area spill was cleaned up and john oswall will follow up in days to check the seepage into the area

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ZHITOMIRSKY/TIBBE

Map Identification Number 50 **1365 CHANDLER ST (HURRICANE SANDY)** **Spill Number: 1213364** **Close Date: 12/03/2012**
1365 CHANDLER ST BAYSWATER, NY TT−Id: 520A−0282−132

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1476 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: PRIVATE DWELLING Spiller: Spiller Phone:
Notifier Type: DEC Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
10/29/2012		STORM		

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks: NO REMARKS GIVEN FOR THIS SPILL

DEC Investigator Remarks:

DEC Contractor Miller pumped out 200 gallons on 12/03/2012

Map Identification Number 51 **LIRR** **Spill Number: 9201639** **Close Date: 05/28/1992**
LIRR/INWOOD STA/REDFERN FAR ROCKAWAY, NY TT−Id: 520A−0131−887

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1573 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11691

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER Spiller: Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: W KELNER Caller Agency: LIRR Caller Phone: (718) 217−3252
DEC Investigator: SULLIVAN Contact for more spill info: Contact Person Phone:

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/11/1992	05/28/1992	VANDALISM	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
NON PCB OIL	PETROLEUM	100.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

CONTAMINATED SOIL.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 52 **K MNGT BUILDINGS** **Spill Number: 8908672** **Close Date: 12/04/1989**
13−22 CAFFREY AVE FAR ROCKAWAY, NY TT−Id: 520A−0133−474

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (3)
Approximate distance from property: 1893 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: 1322 CAFFREY AVE
Revised zip code: NO CHANGE

Source of Spill: TANK TRUCK
Notifier Type: Fire Department
Caller Name: TOM MITRACKOS
DEC Investigator: TOMASELLO
Spiller: WHALE CO.
Notifier Name:
Caller Agency: WHALE CO.
Contact for more spill info:
Spiller Phone:
Notifier Phone:
Caller Phone: (718) 852−3109
Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
12/01/1989	12/04/1989	HUMAN ERROR	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	150.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

CUST ORDERED 1500G OVERFILLED AT 1100G SPILL TEAM TO CLEAN UP.

DEC Investigator Remarks: NO DEC INVESTIGATOR REMARKS GIVEN FOR THIS SPILL.

Map Identification Number 53 **PS253Q** **Spill Number: 0312969** **Close Date: 12/14/2005**
1307 CENTRAL AVE FAR ROCKAWAY, NY TT−Id: 520A−0124−958

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1922 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN
Notifier Type: Local Agency
Caller Name: BRAD MULLNER
DEC Investigator: AJWHITE
Spiller: BRAD MULLNER − PS253Q
Notifier Name: BRAD MULLNER
Caller Agency: LOUIS BERGER GROUP
Contact for more spill info: BRAD MULLNER
Spiller Phone: (212) 363−4223 ext. 5
Notifier Phone: (212) 363−4223 ext. 5
Caller Phone: (212) 363−4223 ext. 5
Contact Person Phone: (212) 363−4223 ext. 5

Category: Known petroleum or hazardous material release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters.
Class: Willing RP − No DEC Field Response − Corrective Action Initiated or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/18/2004		EQUIPMENT FAILURE	NO	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks:

Was doing a test on tank . pulled the tank. Tested the two walls top and bottom and one of the walls came back hot for Benzo(anthracene) 516ppb. chrysene 441ppb, benzo(b,k) fouoranthene 903 ppb, benzo(a) pyrene 445ppb Everything else was non detect.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD 2/27/2004 Sangesland called Mr. Mullner (consultant). They will put together a report showing the tank pull, end point sampling (minor hits), and requesting closure. The report should be submitted within 2 weeks. ISR from BRAD MULLNER LOUIS BERGER GROUP (212) 612−7900− 7957 6/9/04. lEFT MESSAGE 7/2/04 left message. 8/10/04. Message from Brad that ISR is on the way

11/15/2005: Joe White has the lead for this site as part of the Spill initiative

12/8/2005: James Merlo, the coordinator for NYC Schools contacted Joe White with information. Mr. Merlo is trying to located the closure report for this site. If he is unable to locate the report he may send in a certification that the work has been completed to close out the spill.

12/14/2005: A summary of the closure report was provided (copy on eDocs) to Joe White and the site was closed based on the findings of the report.

Map Identification Number 54 **SANDY FOLLOW UP** **Spill Number: 1208861** **Close Date: 11/18/2013**

431 BEACH 122ND ST ROCKAWAY, NY TT−Id: 520A−0278−111

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (4)
Approximate distance from property: 1998 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: 431 BEACH 22ND ST
Revised zip code: NO CHANGE

Source of Spill:	PRIVATE DWELLING	Spiller:	ROSENBURG − PRIVATE RESD	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RMPIPER	Contact for more spill info:	ROSENBURG	Contact Person Phone:	(718) 474−4571

Category: Possible petroleum release with minimal potential for fire/explosion (indoors or outdoors), drinking water contamination, or releases to surface waters, known releases with no potential for damage, or non−petroleum/non−hazardous spills.
Class: Willing RP − DEC Field Response − Corrective Action Initiated, Taken Over, or Completed by RP or Other Agency

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/03/2012		STORM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	250.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Inside basement tank rollover. Cleanup pending.

DEC Investigator Remarks:

DEC Piper visited site. Address does not exist.

Spoke with slomins oil and confirmed address is 431 B 122nd. This is a duplicate spill. house removed tank and converted to gas.
Spill closed.

Map Identification Number 55 **MEK BUTTERY RD** **Spill Number: 8600474** **Close Date: 04/19/1986**
BATTERY RD FAR ROCKAWAY, NY TT−Id: 520A−0137−525

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2120 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN Spiller: UNKNOWN Spiller Phone:
Notifier Type: Local Agency Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: UNASSIGNED Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/18/1986	04/19/1986	ABANDONED DRUM	UNKNOWN	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks:

WILL REMOVE MONDAY

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was

10/10/95: This is additional information about material spilled from the translation of the old spill file: SLUDG−MEK.

THE FOLLOWING CLOSED SPILLS FOR THIS CATEGORY WERE REPORTED BETWEEN 1/8 MILE AND 1/2 MILE FROM THE SUBJECT ADDRESS. THESE SPILLS WERE REPORTED TO BE LESS THAN 100 UNITS IN QUANTITY AND CAUSED BY: EQUIPMENT FAILURE, HUMAN ERROR, TANK OVERFILL, DELIBERATE SPILL, TRAFFIC ACCIDENT, HOUSEKEEPING, ABANDONED DRUM, VANDALISM OR STORMS. THESE SPILLS ARE NEITHER MAPPED NOR PROFILED IN THIS REPORT.

FACILITY ID	FACILITY NAME	STREET	CITY
0611066	DRY CLEANERS	1159 BEACH CHANNEL DRIVE	ROCKAWAY
8708024	B 22ND ST&CORNEGA AV/QUNS	BCH 22ND ST & CORNEGA AVE	NEW YORK CITY
0105269	POLE 13	MOTT AV AND B18TH ST	FAR ROCKAWAY
1000860	ON EMPTY LOT	17−25 17−27 REDFERN AVENUE	FAR ROCKAWAY
9608090	MYCO GAS STATION	18−11 MOTT AVENUE	FAR ROCKAWAY
9413260	NYCPD 101ST PRECINT	16−12 MOTT AVENUE	FAR ROCKAWAY
9301017	1612 MOTT AVE	1612 MOTT AVE	FAR ROCKAWAY
1213266	1316 MCBRIDE (HURRICANE SANDY)	1316 MCBRIDE	BAYSWATER
1211220	SANDY FOLLOW UP	13−16 MCBRIDE ST	FAR ROCKAWAY
1006366	PRIVATE RESIDENCE	1320 MCBRIDE ST	FAR ROCKAWAY
9610306	22−11 NEW HAVEN AVENUE	22−11 NEW HAVEN AVENUE	FAR ROCKAWAY
0000598	SPILL NUMBER 0000598	22−11 NEW HAVEN AVENUE	FAR ROCKAWAY
1406840	TRANSFORMER POLE 7	604 BEACH 19TH ST	FAR ROCKAWAY
0801281	MULTI FAMILY HOME	22−79 MOTT AVE.	FAR ROCKAWAY
9802746	SPILL NUMBER 9802746	11−41 MCBRIDE ST	FAR ROCKAWAY
9415199	11−41 MCBRIDE ST	11041 MCBRIDE ST	FAR ROCKAWAY
9413371	1141 MCBRIDE ST	1141 MCBRIDE ST	FAR ROCKAWAY
0907678	SOIL	1450 GATEWAY BLVD	FAR ROCKAWAY
0405250	MANHOLE #30199	1450 GATEWAY ST	FAR ROCKAWAY
9507061	1323 MCBRIDE STREET	1323 MCBRIDE STREET	QUEENS
1213350	1360 CHANDLER ST (HURRICANE SANDY)	1360 CHANDLER ST	BAYSWATER
1211678	1360 CHANDLER STREET	1360 CHANDLER STREET	BAYSWATER
1210332	HURBERT SOREL	13−60 CHANDLER ST	FAR ROCKAWAY
9701441	NEW SURFSIDE NURSING HOME	22−41 NEW HAVEN AVE	FAR ROCKAWAY
1211674	1347 CHANDLER STREET	1347 CHANDLER STREET	BAYSWATER
9603802	1401 CENTRAL AVENUE	1401 CENTRAL AVENUE	FAR ROCKAWAY
1208634	HOUSE AND SOIL	1362 CHANDLER STREET	FAR ROCKAWAY

1411592	NAT GRID	1402 AUGUSTINA AVE	FAR ROCKAWAY
1404083	POLE 2	1024 GIPSON STREET	FAR ROCKAWAY
1211681	1372 CHANDLER STREET	1372 CHANDLER STREET	BAYSWATER
1212888	ROMEO PROPERTY	1365 CHANDLER ST	FAR ROCKAWAY
9903887	POLE 15	REDFERN AVE/NANEOK AVE	FAR ROCKAWAY
9304570	1502 MOTT AVENUE	1502 MOTT AVENUE	FAR ROCKAWAY
1211680	1367 CHANDLER STREET	1367 CHANDLER STREET	BAYSWATER
9512756	ETWARU RESIDENCE	2122 NAMEOKE AVE	FAR ROCKAWAY
9806143	MANHOLE 30277	BEACH 21ST ST	FAR ROCKAWAY
1211682	1381 CHANDLER STREET	1381 CHANDLER STREET	BAYSWATER
1208364	TRANSFORMER POLE #2 − LIPA	13−24 CENTRAL AVE	FAR ROCKAWAY
1211683	1382 MCBRIDE STREET	1382 MCBRIDE STREET	BAYSWATER
1104054	POLE TOP TRANSFORMER−POLE #12	2308 MOTT AVE	FAR ROCKAWAY
0907677	SOIL	1409 GATEWAY BLVD	FAR ROCKAWAY
0605532	RADMAR MEAT CORP	CENTRAL AVE/NELSON STREET	FAR ROCKAWAY
1406310	HOME	22−53 NAMEOKE	FAR ROCKAWAY
1404504	PRIVATE RESIDENCE	2253 NAMEOKE AVE	QUEENS
9506679	11−16 NELSON STREET	11−16 NELSON STREET	QUEENS
9712205	DICKENS ST/CORNEGA AVE	DICKENS ST/CORNEGA AVE	FAR ROCKAWAY
9612224	APARTMENT COMPLEX	439 BEACH 22ND STREET	FAR ROCKAWAY
1004677	ON SIDE OF ROAD	1019 DICKENS AVE	FAR ROCKAWAY
9203729	BEACH 19TH ST/ST JOHNS	BEACH 19TH ST/HOSPITAL	FAR ROCKAWAY
0501798	ST. JOHNS HOSPITAL	BEACH 19TH STREET	FAR ROCKAWAY
1010730	WAVECREST APARTMENTS	20−30 ELK DRIVE	FAR ROCKAWAY
1006120	BASEMENT ON A SLAB	13−77 GIPSON STREET	QUEENS
0807842	IJEOMA UWAZURIKE	1377 GIPSON STREET	QUEENS
9705994	2101 ELK DR	2101 ELK DR	FAR ROCKAWAY
0505262	1711 BROOKHAVEN AVE.	1711 BROOKHAVEN AVE	FAR ROCKAWAY
0306895	MANHOLE #30592	1715 BROOKHAVEN AV	QUEENS
9207826	BROCKHAVEN BLVD./B 17 ST	BROCKHAVEN BLVD/B 17 ST	FAR ROCKAWAY
9409758	BATTERY RD & CHANDLER ST	BATTERY RD & CHANDLER ST	ROCKAWAY
9402559	1390 DAVIS ROAD	EMPTY LOT 1390 DAVIS ROAD	QUEENS
1404402	MANHOLE 30170	1261 CENTRAL AVE	FAR ROCKAWAY
0011037	SPILL NUMBER 0011037	1261 CENTRAL AVE	FAR ROCKAWAY
0302872	MANHOLE #14382	12−79 REDFERN AVE	QUEENS
1211700	1440 GIPSON STREET	1440 GIPSON STREET	BAYSWATER
0905503	I/F/O 1341 DICKENS ST	1341 DICKENS ST	FAR ROCKAWAY
1211856	2314 ENRIGHT ROAD	2314 ENRIGHT ROAD	BAYSWATER
1211858	2335 ENRIGHT ROAD	2335 ENRIGHT ROAD	BAYSWATER
9708614	FOOT OF GIPSOM ST	GIPSON ST NEAR RIVER	FAR ROCKAWAY
1211859	2337 ENRIGHT ROAD	2337 ENRIGHT ROAD	BAYSWATER
0503153	POLE MOUNTED TRANSFORMER	1209 BEACH 9TH STREET/IFO	FAR ROCKAWAY
0212660	SPILL NUMBER 0212660	2394 MOTT AVE	QUEENS
1213351	515 BEACH 12TH ST (HURRICANE SANDY)	515 BEACH 12TH ST	FAR ROCKAWAY

1211860	2346 ENRIGHT ROAD	2346 ENRIGHT ROAD	BAYSWATER
0204616	N OF MOTT AV	BAY 24TH ST	QUEENS

NO OIL STORAGE FACILITIES LARGER THAN 400,000 GALLONS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PETROLEUM BULK STORAGE FACILITIES LESS THAN 400,000 GALLONS IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 56 **NOBO CORPORATION** **Facility Id: 2−602577** **Source: NYS DEC**
10−74 BEACH 22ND STREET FAR ROCKAWAY, 11691 TT−Id: 640A−0047−266

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 124 feet to the NW*

ADDRESS CHANGE INFORMATION
Revised street: 1074 BEACH 22ND STREET
Revised zip code: NO CHANGE

Facility Type: Other
Site Status: Active
Expiration Date of the facility's registration certificate: 12/28/2000
Operator Name: ANDREW BONNOT
Operator Phone #: (718) 471−1264
Owner Name: −
Owner Company: NOBO CORPORATION
Owner Type: Corporate or Commercial
Owner Address: 10−74 BEACH 22ND STREET, FAR ROCKAWAY, NY 11691

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	Tank Converted to Non−Regulated Use	#2 Fuel Oil	275	Aboveground − In Contact with Soil	05/01/1995		08/01/1996
002	Temporarily Out of Service	Waste Oil/Used Oil	275	Aboveground − In Contact with Soil	05/01/1995		

TANK NUMBER: 001
TANK EXT. PROTECTION: Painted/Asphalt Coating
PIPING EXT. PROTECTN: Painted/Asphalt Coating
PIPING TYPE: Galvanized Steel
OVERFILL PROTECTION: Float Vent Valve
TANK TYPE: Steel/Carbon Steel/Iron
TANK LEAK DETECTN: None
PIPING LEAK DETECTN:
PIPING LOCATION: Aboveground
SPILL PREVENTION:
TK INT. PROTECTION: None
TK SEC. CONTAINMNT: Other
PIPE SEC. CONTAINMNT:
DISPENSER METHOD: Suction

TANK NUMBER: 002
TANK EXT. PROTECTION: Painted/Asphalt Coating
PIPING EXT. PROTECTN: Painted/Asphalt Coating
PIPING TYPE: Galvanized Steel
OVERFILL PROTECTION: Float Vent Valve
TANK TYPE: Steel/Carbon Steel/Iron
TANK LEAK DETECTN: None
PIPING LEAK DETECTN: Exempt Suction Piping
PIPING LOCATION: Aboveground
SPILL PREVENTION:
TK INT. PROTECTION: None
TK SEC. CONTAINMNT: Other
PIPE SEC. CONTAINMNT:
DISPENSER METHOD: Suction

Map Identification Number 57 **BAYMART (RETAIL STORE)** **Facility Id: 2−607761** **Source: NYS DEC**
1057 BEACH 20TH STREET FAR ROCKAWAY, 11691 TT−Id: 640A−0049−418

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 223 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Other Wholesale/Retail Sales
Site Status: Active
Expiration Date of the facility's registration certificate: 05/14/2007
Operator Name: JOSEPH DWECK
Operator Phone #: (718) 327−1568
Owner Name: −
Owner Company: D−MART INC C/O RAINES
Owner Type: Corporate or Commercial
Owner Address: 2047 HIGH RIDGE RD, BOYNTON BEACN, FL 33426

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
0001	In Service	#2 Fuel Oil	1500	Aboveground on Crib Rack or Cradle			

TANK NUMBER: 0001
TANK EXT. PROTECTION: None
PIPING EXT. PROTECTN: None
PIPING TYPE: No Piping
OVERFILL PROTECTION: Vent Whistle
TANK TYPE: Steel/Carbon Steel/Iron
TANK LEAK DETECTN: None
PIPING LEAK DETECTN: Exempt Suction Piping
PIPING LOCATION: Aboveground
SPILL PREVENTION:
TK INT. PROTECTION: None
TK SEC. CONTAINMNT: None
PIPE SEC. CONTAINMNT:
DISPENSER METHOD: Suction

Map Identification Number 58 **D−MART INC** **Facility Id: NY03001** **Source: NYC FIRE DEPT**
1057 BEACH 20 ST QUEENS, NY 11691 TT−Id: 660A−0009−156

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 223 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: 1057 BEACH 20TH ST
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: FO #2 1500G

Map Identification Number 59 **SY YOUNG BAY** **Facility Id: NY09596** **Source: NYC FIRE DEPT**
20−11 MOTT AVE QUEENS, NY 11691 TT−Id: 660A−0008−814

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 263 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 2011 MOTT AVE
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: FUEL OIL 2000 GLS

Map Identification Number 60 **OWEN AUTO SERVICE** **Facility Id: 2−604688** **Source: NYS DEC**
1017 BEACH 21ST STREET FAR ROCKAWAY, 11691 TT−Id: 640A−0047−401

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 319 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Retail Gasoline Sales
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate:
Operator Name: OWEN BRERETON Operator Phone #: (718) 327−5927
Owner Name: −
Owner Company: OWEN BRERETON Owner Type: Corporate or Commercial
Owner Address: 14−30 GIPSON STREET, FAR ROCKAWAY, NY 11691

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
01	Closed − Removed	Gasoline	550	Underground			08/01/2000
02	Closed − Removed	Gasoline	550	Underground			08/01/2000
03	Closed − Removed	Gasoline	550	Underground			08/01/2000
04	Closed − Removed	Gasoline	550	Underground			08/01/2000
05	Closed − Removed	Gasoline	550	Underground			08/01/2000

Map Identification Number 61 **O & L AUTO REPAIRS** **Facility Id: NY07570** **Source: NYC FIRE DEPT**
1017 BEACH 21 ST QUEENS, NY 11691 TT−Id: 660A−0009−513

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 319 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 1017 BEACH 21ST ST
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: 5−550 GAL TKS/TESTDUE 9/1998
AIR COMP OV 100P
MVRS HANDTOOLS ONLY

Map Identification Number 62 **ROCKAWAY CO** **Facility Id: 2−309060** **Source: NYS DEC**
19−31 MOTT AVENUE FAR ROCKAWAY, 11691 TT−Id: 640A−0049−421

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 396 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: 1931 MOTT AVENUE
Revised zip code: NO CHANGE

Facility Type: Apartment Building/Office Building
Site Status: Active
Expiration Date of the facility's registration certificate: 10/02/2017
Operator Name: ROBERT ROTHENBERG
Operator Phone #: (718) 327−1132
Owner Name: CHARLES E. REID − AGENT
Owner Company: ROCKAWAY CO
Owner Type: Corporate or Commercial
Owner Address: 450 SEVENTH AVE, NEW YORK, NY 10123

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	Closed − In Place	#2 Fuel Oil	2000	Underground			05/01/1992
002	In Service	#2 Fuel Oil	2000	Aboveground on Crib Rack or Cradle	05/01/1992		

Map Identification Number 63 **RCL SERVICE CENTER** **Facility Id: 2−604080** **Source: NYS DEC**
1009 BEACH 21ST STREET FAR ROCKAWAY, 11691 TT−Id: 640A−0044−286

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 514 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

Facility Type: Retail Gasoline Sales
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate:
Operator Name: BASSER−KAUFMAN
Operator Phone #: (516) 569−3700
Owner Name: −
Owner Company: BASSER−KAUFMAN
Owner Type: Corporate or Commercial
Owner Address: 335 CENTRAL AVENUE, LAWRENCE, NY 11559

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	Closed − Removed	Gasoline	4000	Underground			03/01/1999
002	Closed − Removed	Gasoline	500	Underground			03/01/1999
003	Closed − Removed	Gasoline	500	Underground			03/01/1999
004	Closed − Removed	Gasoline	500	Underground			03/01/1999
005	Closed − Removed	Gasoline	500	Underground			03/01/1999
006	Closed − Removed	Gasoline	500	Underground			03/01/1999
007	Closed − Removed	Gasoline	500	Underground			03/01/1999
008	Closed − Removed	Gasoline	500	Underground			03/01/1999
009	Closed − Removed	Gasoline	500	Underground			03/01/1999

Map Identification Number 64 **D.J.S.SERVICE CORP.** **Facility Id: NY03011** **Source: NYC FIRE DEPT**
1009 BEACH 21 ST QUEENS, NY 11691 TT−Id: 660A−0008−899

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 514 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 1009 BEACH 21ST ST
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: ASS 1 −4000GALBTLT 6/88 NRP
MVRS COMB MIX C OF F'S X 3/31/92
AIR COMPRESSOR ACLT 5/90

Map Identification Number 65 **ENGINE 328 AND ENGINE 264** **Facility Id: 2−358037** **Source: NYS DEC**
16−15 CENTRAL AVENUE FAR ROCKAWAY, 11691 TT−Id: 640A−0049−425

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 560 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 1615 CENTRAL AVENUE
Revised zip code: NO CHANGE

Facility Type: Other
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate:
Operator Name: COMPANY OFFICER
Operator Phone #: (718) 476−6264
Owner Name: −
Owner Company: FIRE DEPARTMENT
Owner Type: Local Government
Owner Address: 9 METROTECH, BROOKLYN, NY 11201−3857

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	In Service	Diesel	550	Aboveground on Crib Rack or Cradle	01/01/1976		
002	Closed − Removed	#2 Fuel Oil	2550	Aboveground − In Contact with Soil	01/01/1980		09/20/2007

Map Identification Number 66 **2206 REALTY CORP** **Facility Id: 2−117773** **Source: NYS DEC**
22−06 CORNAGA AVENUE QUEENS, 11691 TT−Id: 640A−0045−458

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 593 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 2206 CORNAGA AVENUE
Revised zip code: NO CHANGE

Facility Type: Apartment Building/Office Building
Site Status: Active
Expiration Date of the facility's registration certificate: 07/19/2017
Operator Name: JOSE MELENDEZ
Operator Phone #: (917) 376−9141
Owner Name: EGOR EDELMAN − OWNER
Owner Company: 2206 REALTY CORP
Owner Type: Corporate or Commercial
Owner Address: 895 MAMARONECK AVE, MAMARONECK, NY 10543

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	In Service	#2 Fuel Oil	10000	Underground	09/13/1983	05/15/2012	

Map Identification Number 67 **INT.PENTECOSTAL MISSION** **Facility Id: NY04986** **Source: NYC FIRE DEPT**
16−18 CENTRAL AVE QUEENS, NY 11691 TT−Id: 660A−0008−544

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 613 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1618 CENTRAL AVE
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: FO #2 1500GAL

Map Identification Number 68 **ACTION CENTER FOR DEUCATION & COMMUNITY DEV.** **Facility Id: 2−610219** **Source: NYS DEC**
16−12 CENTRAL AVENUE QUEENS, 11691 TT−Id: 640A−0049−417

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 651 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 1612 CENTRAL AVENUE
Revised zip code: NO CHANGE

Facility Type: Other
Site Status: Unregulated/Closed
Expiration Date of the facility's registration certificate:
Operator Name: OREA DOL
Operator Phone #: (718) 337−5040
Owner Name: MITCHELL KURK − V. PRES
Owner Company: JUDD LLC
Owner Type: Corporate or Commercial
Owner Address: 497 BEACH 20TH STREET, QUEENS, NY 11691

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
03	Closed − Removed	#2 Fuel Oil	275	Aboveground − In Contact with Soil	04/01/2000		04/01/2000
02	Closed − Removed	#2 Fuel Oil	275	Aboveground − In Contact with Soil	04/01/2000		04/01/2000
01	Closed − Removed	#2 Fuel Oil	2000	Aboveground − In Contact with Soil	05/01/2006		05/01/2006

Map Identification Number 69 **SEAGRIT BAR & GRILL INC.** **Facility Id: NY08938** **Source: NYC FIRE DEPT**
1612 CENTRAL AVE QUEENS, NY 11691 TT−Id: 660A−0008−785

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 651 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

NOTE: This is an archived database

Comments: FILE NO F9655 FUEL OIL 2000GALS

Map Identification Number 70 **ROCKAWAY COMPANY** **Facility Id: 2−159263** **Source: NYS DEC**
19−20 MOTT AVENUE FAR ROCKAWAY, 11691 TT−Id: 640A−0049−420

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 655 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 1920 MOTT AVENUE
Revised zip code: NO CHANGE

Facility Type: Apartment Building/Office Building
Site Status: Active
Expiration Date of the facility's registration certificate: 08/26/2017
Operator Name: KAUFMAN REALTY
Operator Phone #: (718) 327−1132
Owner Name: −
Owner Company: ROCKAWAY COMPANY
Owner Type: Corporate or Commercial
Owner Address: 450 SEVENTH AVE, NEW YORK, NY 10123

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	In Service	#2 Fuel Oil	2000	Aboveground on Crib Rack or Cradle	08/07/1958		

Map Identification Number 71 **JP MORGAN CHASE** **Facility Id: 2−612280** **Source: NYS DEC**
19−12 MOTT AVENUE FAR ROCKAWAY, 11691 TT−Id: 640A−0090−911

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 655 feet to the ENE

ADDRESS CHANGE INFORMATION
Revised street: 1912 MOTT AVENUE
Revised zip code: NO CHANGE

Facility Type: Apartment Building/Office Building
Site Status: Active
Expiration Date of the facility's registration certificate: 08/20/2019
Operator Name: MAURIZIO BERTOLOTTI
Operator Phone #: (646) 772−9339
Owner Name: MAURIZIO BERTOLOTTI − FACILITY MANAGER
Owner Company: ROCKAWAY KB COMPANY LLC
Owner Type:
Owner Address: 450 SEVENTH AVE., PENTHOUSE N, NEW YORK, NY 10123

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
001	In Service	#4 Fuel Oil	1100	Underground	01/01/1955	11/05/2013	

Map Identification Number 72 **ROCKAWAY CO** **Facility Id: NY08576** **Source: NYC FIRE DEPT**
19−14 MOTT AVE QUEENS, NY 11358 TT−Id: 660A−0009−876

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 655 feet to the ENE

NOTE: This is an archived database

Comments: FUEL OIL 2000G

ADDRESS CHANGE INFORMATION
Revised street: 1914 MOTT AVE
Revised zip code: 11691

HAZARDOUS WASTE GENERATORS/TRANSPORTERS IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

PLEASE NOTE: * Compass directions can vary substantially for sites located very close to the subject property address.

Map Identification Number 73 **NYSDEC Name:** **MTA NYCT − MOTT AVENUE STATION − A** **Facility Id: NYR000150961**

NYSDEC Address: MOTT AVE & BEACH 22ND ST FAR ROCKAWAY, NY 11691 TT−Id: 740A−0060−751
EPA (RCRA) Name: MTA NYCT − MOTT AVENUE STATION − A
EPA (RCRA) Address: MOTT AVE & BEACH 22ND ST FAR ROCKAWAY, NY 11691

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 326 feet to the N

ADDRESS CHANGE INFORMATION
Revised street: MOTT AVE / BEACH 22ND ST
Revised zip code: NO CHANGE

US EPA RCRA Type: SMALL QUANTITY GENERATOR
Notification date: 08/17/2007
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: LUMINITA MARINESCU Source Type: Implementer Contact Phone: 646−252−3506 Contact Info Date: 08/16/2007
Contact Name: LUMINITA MARINESCU Source Type: Notification Contact Phone: 646−252−3506 Contact Info Date: 08/17/2007

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	100	POUNDS	GENERATED	2012	2500	2010
D006	Cadmium	100	POUNDS	GENERATED	2011		

Map Identification Number 74 **NYSDEC Name:** **SNOW WHITE CLEANERS** **Facility Id: NYD982180663**

NYSDEC Address: 2088 MOTT AVENUE FAR ROCKAWAY, NY 11691 TT−Id: 740A−0041−636
EPA (RCRA) Name: SNOW WHITE CLEANERS
EPA (RCRA) Address: 20−88 MOTT AVE FAR ROCKAWAY, NY 11691

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (5)
Approximate distance from property: 330 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN Notification date: 04/27/1987
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: BUN KUN MOON Source Type: Notification Contact Phone: 718−471−3770 Contact Info Date: 04/27/1987

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR
CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
F002	Spent halogenated solvents	943	POUNDS	GENERATED	2003	2445	1988

Map Identification Number 75 **NYSDEC Name:** **GEORGE L CHRIS CLEANERS** **Facility Id: NYD077444206**
NYSDEC Address: 2140 MOTT AVENUE FAR ROCKAWAY, NY 11691 TT−Id: 740A−0041−637
EPA (RCRA) Name: GEORGE & CHRIS CLEANERS INC
EPA (RCRA) Address: 2140 MOTT AVE FAR ROCKAWAY, NY 11691

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 531 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: NO CHANGE

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR Notification date: 11/30/1987
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: GEORGE MARKIDES Source Type: Implementer Contact Phone: 718−327−4813 Contact Info Date: 01/01/2007
Contact Name: GEORGE MARKIDES Source Type: Notification Contact Phone: 718−327−4813 Contact Info Date: 11/30/1987

Historically listed as the following USEPA RCRA Generator Size(s) as well:
SMALL QUANTITY GENERATOR

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
F002	Spent halogenated solvents	340	POUNDS	GENERATED	2006	1635	1996

Map Identification Number 76 **NYSDEC Name:** **NYNEX** **Facility Id: NYP000932921**
NYSDEC Address: CORNAGA AVE & BEAD 21ST QUEENS, NY TT−Id: 740A−0038−618

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 600 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: CORNAGA AV / BEACH 21ST ST
Revised zip code: 11691

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	1200	POUNDS	GENERATED	1997		

Map Identification Number 77 **NYSDEC Name:** **BELL ATLANTIC−NY** **Facility Id: NYP000940486**
NYSDEC Address: MOTT AVE & BEACH CHANNEL DR MH QUEENS, NY TT−Id: 740A−0061−052

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 617 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: MOTT AVE / BEACH CHANNEL DR
Revised zip code: 00000

US EPA RCRA (Resource Conservation and Recovery Act) information not reported; Site information reported by NYS DEC.

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	No hazardous waste activity reported by NYS up to 4/22/2016.						

Map Identification Number 78 **NYSDEC Name:** **MYLES CLEANER** **Facility Id: NYD981141468**

NYSDEC Address: 11−59 BEACH CHANNEL DRIVE FAR ROCKAWAY, NY 11691 TT−Id: 740A−0037−886
EPA (RCRA) Name: MYLES FRENCH CLEANERS
EPA (RCRA) Address: 11−59 BEACH CHANNEL DR FAR ROCKAWAY, NY 11691

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 650 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 1159 BEACH CHANNEL DRIVE
Revised zip code: NO CHANGE

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR Notification date: 09/04/1997
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter: No current info −− Previously reported
Contact Name: SUN PARK Source Type: Implementer Contact Phone: 718−327−8053 Contact Info Date: 01/01/2007
Contact Name: SUN PARK Source Type: Notification Contact Phone: 718−327−8053 Contact Info Date: 10/05/2001

NYS DEC Manifested Waste Summary:
Waste Codes, Waste Units, and Transaction Types are only shown for the most recently reported year.

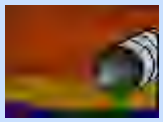
WASTE CODE	WASTE DESCRIPTION	WASTE AMOUNT	WASTE UNITS	TRANSACTION TYPE	YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
F002	Spent halogenated solvents	555	POUNDS	GENERATED	2005	2050	1988

NO CHEMICAL STORAGE FACILITIES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO HISTORIC UTILITY SITES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO HAZARDOUS SUBSTANCE WASTE DISPOSAL SITES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

NO TOXIC AIR, LAND AND WATER RELEASES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS



NO WASTEWATER DISCHARGES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO AIR DISCHARGE FACILITIES IDENTIFIED WITHIN 1/8 MILE SEARCH RADIUS

NO CIVIL & ADMINISTRATIVE ENFORCEMENT DOCKET FACILITIES IDENTIFIED WITHIN THE 1/8 MILE SEARCH RADIUS

NO NYC ENVIRONMENTAL QUALITY REVIEW REQUIREMENTS − "E" DESIGNATION SITES IDENTIFIED WITHIN 250 FT SEARCH RADIUS

U.S. EPA EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) SPILLS
AT THE LOCATION OR POTENTIALLY AT THE LOCATION OF
1037-1059 Beach 21st Street
Queens, NY 11691

* Any ERNS Spills listed below are NOT mapped in this report *

ONSITE ERNS (A count of these spills can be found in the distance interval table):
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

POTENTIALLY ONSITE ERNS:
THIS SITE IS NOT FOUND IN THE ERNS DATABASE

 May 17, 2016 '1037-1059 Beach 21st Street'

Unmappable facilities for 'Queens' County

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
30S19	BEECHWOOD			UNKNOWN
41D01	NY NEWS GRAVURE PLANT			UNKNOWN
41D03	CAPITAL PROJECT SE-43A			UNKNOWN
41D04	MTA DEMO SITE			UNKNOWN
41D17	ELARDO GEN CONSTRUCION CO			UNKNOWN
41T43	SALVATORE RUSSO INC.			UNKNOWN
41T58	BERLIN WRECKING			11412
41T63	LIZZA, LIZZA, HOCHREITER			UNKNOWN
41W94	ST JOHN ENTERPRISES INC			UNKNOWN
41W96	FAR ROCKAWAY EQUIPMENT CO			UNKNOWN
		TOLEDO ST.	QUEENS	UNKNOWN
		STANLEY AVE. & 131 ST.	QUEENS	UNKNOWN
NY00000000004	D&R CARTING	UNKNOWN	HEMPSTEAD	UNKNOWN
NY00000002581	NY NEWS GRAVURE PLANT	UNKNOWN	UNKNOWN	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
1510829	IN THE ROADWAY	BOLTON ROAD	FAR ROCKAWAY	11691
0807597	BUCKEYE PIPELINE	STAKE 145+00	JAMAICA BAY	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9210559	SPILL NUMBER 9210559			UNKNOWN
8606300	SPILL NUMBER 8606300			UNKNOWN
8504598	HOWARD BEACH QUEENS	HOWARD BEACH QUEENS		UNKNOWN
1410484	QUEENS COUNTY EM. RES.	ONE HUNTERS POINT PLAZA		UNKNOWN
0811777	VARIOUS SITES	VARIOUS SITES		UNKNOWN
0209904	VARIOUS DEP -BWSO SITES	MISC.	BRONX/QUEENS/MANHATTAN	UNKNOWN
9712210	SILKEBORG VESSEL	BERTH 5	BROOKLYN	UNKNOWN
9313968	SHELL BANK CHANNEL	SHELL BANK CHANNEL	BROOKLYN	UNKNOWN
9302379	EUGENE THOMAS	GURITZON BASIN	BROOKLYN	UNKNOWN
8503081	BROOKLYN	BROOKLYN	BROOKLYN	UNKNOWN
0503008	TRUCK LEAK	N SIDE MERIDIAN RD/60' E	BROOKLYN	UNKNOWN
9406300	BEACH 9TH STREET	BEACH 9TH STREET	FAR ROCKAWAY	11691
8200682	SMITH RESIDENCE	SMITH RESIDENCE	FAR ROCKAWAY	UNKNOWN
0804000	EAST ROCKAWAY INLET	BEACH 15TH ST	FAR ROCKAWAY	11691
9405847	SHELL BANK BASIN CANAL	SHELL BANK BASIN CANAL	HOWARD BEACH	UNKNOWN
9805404	MARKETSPAN	SHERIDAN BLVD	INWOOD	11696
9514529	MOTT BASIN	MOTT BASIN	INWOOD	UNKNOWN
9406271	LILCO	SHERIDAN BLVD/NASSAU AVE	INWOOD	UNKNOWN
9307234	LILCO	WEST SIDE SHERIDAN BLVD	INWOOD	UNKNOWN
9201001	LILCO	SHERIDAN BLVD	INWOOD	UNKNOWN
8301607			INWOOD	UNKNOWN
0125124	SPILL NUMBER 0125124	MARINA AT END BURNSIDE AV	INWOOD	11696
0025193	UNKNOWN	MOTT AVENUE	INWOOD	UNKNOWN
8901624	UNKNOWN	MOTT BASIN (NEAR LILCO)	INWOOD/FAR ROCKAWAY	UNKNOWN
9103713	JAMAICA BAY/ROCKAWAY BLVD	JAMAICA BAY/ROCKAWAY BLVD	JAMAICA	UNKNOWN
0613564	JAMAICA 3 REGULATOR	120 3RD PLACE/150	JAMAICA	UNKNOWN
9516749	GRASSHASSOCK CHANNEL	GRASSHASSOCK CHANNEL	NEW YORK	UNKNOWN
9102463	JAMAICA BAY/BCH CHNNEL DR	JAMAICA BAY/BCH CHNNEL DR	NEW YORK CITY	UNKNOWN
9100508	ARVERNON BASIN/QUEENS	ARVERNON BASIN	NEW YORK CITY	UNKNOWN
8909963	RULERS BAR HASSOCK/QUEENS	RULERS BAR HASSOCK	NEW YORK CITY	UNKNOWN
8903791	MOTT BASIN/BETW 3&5 BUOYS	MOTT BASIN/BETW 3&5 BUOYS	NEW YORK CITY	UNKNOWN

8803758	BREEZY POINT BEACH/QUEENS	BREEZY POINT BEACH	NEW YORK CITY	11697
8800235	FLATBUSH AVE/DEAD HORSE	DEAD HORSE BAY/FLATBUSH	NEW YORK CITY	UNKNOWN
8707497	NAMEOKE PUMP STATION/B'KL	NAMEOKE PUMP STATION	NEW YORK CITY	UNKNOWN
0310131	LOWER LAYEL BLVD	LOWER LAYEL BLVD	NEW YORK CITY	UNKNOWN
0209218	COLEMAN ISLAND REG #30	COLEMAN ISLAND	NEW YORK CITY	UNKNOWN
9705198	JAMAICA BAY	BOUY 23 MILE MAN PARK	QUEENS	UNKNOWN
9502637	UNK	7 MIDLAND GARDEN	QUEENS	UNKNOWN
9411488	# 5 ROCKAWAY INLET	# 5 ROCKAWAY INLET	QUEENS	UNKNOWN
9402440	GRASSY BAY	GRASSY BAY	QUEENS	UNKNOWN
9312485	BACELLENA PT. LIGHT #7.	BACELLENA PT. LIGHT #7.	QUEENS	UNKNOWN
9305134	ON JAMAICA BAY	ON JAMAICA BAY	QUEENS	UNKNOWN
9305130	VERNON BASIN	VERNON BASIN	QUEENS	UNKNOWN
9206327	DOCK FOR COMMUTER III	DOCK FOR COMMUTER III	QUEENS	UNKNOWN
8504706	FAR ROCKAWAY, QUEENS	FAR ROCKAWAY QUEENS	QUEENS	UNKNOWN
8503726	QUEENS	QUEENS	QUEENS	UNKNOWN
8000260	SPILL NUMBER 8000260		QUEENS	UNKNOWN
7801404	MIDLAND TAXI,SBWY-MIDLND.	MIDLAND TAXI,SBWY-MIDLND.	QUEENS	UNKNOWN
7800519	DREDGE PENNSYLVANIA	DREDGE PENNSYLVANIA	QUEENS	UNKNOWN
1401574	SHEEN IN JAMAICA BAY	LATITUDE 40N34.430 LONGITUDE 73W52.033	QUEENS	UNKNOWN
1306184	FEEDER LINE	JAMAICA TO CORONA SUB STATIONS	QUEENS	UNKNOWN
1104351	TRENCH	FRONT OF 59-21 TALLAWAY	QUEENS	UNKNOWN
0910003	STREET	911 CHAD CREEK ROAD-OFF OF POLE 67248	QUEENS	UNKNOWN
0908879	ROCKAWAY WATER POLLUTION CONTROL PLANT	UNK	QUEENS	UNKNOWN
0803582	RAIN CAUSED DRIP PAN TO OVERFLOW	CORONA SUBSTATIONS 1&2.	QUEENS	UNKNOWN
0609105	CITGO STATION	WALDEN /SOUTH VANDORN	QUEENS	UNKNOWN
0500534	MAN HOLE 14954	CARWELL AVE	QUEENS	UNKNOWN
0330035	FRESH MEADOWS RESIDENTIAL	COMMUNITY & COMMERCIAL	QUEENS	UNKNOWN
0112087	MANHOLE 8309	EAST SIDE SERVICE ROAD	QUEENS	UNKNOWN
0010608	BUILDING	4051 TENMAN ST	QUEENS	UNKNOWN
0004925	NYC DEPT OF DESIGN/CONST.	360 BEECH ST	QUEENS	UNKNOWN
9705649	ROCKAWAY BEACH	BEWTEEN BEACH 3RD ST/149T	ROCKAWAY	UNKNOWN
9515851	241 BEACH CHANNEL DR /119	241 BEACH CHANNEL DR/119	ROCKAWAY	UNKNOWN
1103087	TEST	TEST	TEST	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8709858	NAMEOKE PUMPING STATION	NAMEOKE PUMPING STATION		UNKNOWN
1208365	ALL OF QUEENS	ALL STREETS		UNKNOWN
1211923	3132 WATERLOO STREET	3132 WATERLOO STREET	BAYSWATER	11691
1211679	1366 ENRIGHT ROAD	1366 ENRIGHT ROAD	BAYSWATER	11691
1211669	1318 ENRIGHT ROAD	1318 ENRIGHT ROAD	BAYSWATER	11691
9613013	NEW YORK HARBOR	NY HARBOR 1 MI.W ROCKAWAY	BROOKLYN	UNKNOWN
9001315	JAMAICA BAY/FLATBUSH/BKLY	JAMAICA BAY/FLATBUSH	BROOKLYN	UNKNOWN
1110867	DRILL DRILL DRILL	DRILL DRILL DRILL	DRILL DRILL DRILL	UNKNOWN
9411398	JAMAICA BAY MANOR	BEACH CHANNEL RR-JAMAICA	EAST ROCKAWAY	UNKNOWN
9605752	MAN HOLE	REDFERN AVE	FAR ROCKAWAY	11691
9516350	BAYSWATER PUMP STATION	BAYSWATER AVENUE	FAR ROCKAWAY	11691
9401819	18TH STREET	18TH STREET	FAR ROCKAWAY	11691
8600444	LILCO	BAY 24TH ST. OFF MOTT AVE	FAR ROCKAWAY	11691
1406807	MAN HOLE 30384	BEACH 20 ST	FAR ROCKAWAY	UNKNOWN
1002570	POLE # 8	222 143RD ST	FAR ROCKAWAY	UNKNOWN
0010103	423 PINSON ST	423 PINSON ST	FAR ROCKAWAY	11691
1401936	PARKING SPOT ZA	CENTRAL TERMINAL	FLUSHING	UNKNOWN
9605946	BAILEY RESIDENCE	157A ELMWOOD ROAD	INWOOD	11696
9313146	LILCO	SHERIDAN BLVD	INWOOD	11696
8909389	LILCO	SHERIDAN BLVD	INWOOD	11696
8803939	LILCO	SHERIDAN BLVD	INWOOD	UNKNOWN
8710904	RGR TRANSPORTATION	91 DIXON AVENUE	INWOOD	11696
1111240	ROADWAY	MEADOW LANE	INWOOD	11696
0108417	SPILL NUMBER 0108417	SHERIDAN BLVD	INWOOD	11696

9416626	LIRR	DUNTON SHOPS	JAMAICA	UNKNOWN
9305966	JAMAICA BAY #30	JAMAICA BAY #30	JAMAICA	UNKNOWN
9208885	BEACH CHANNEL DRIVE	BEACH CHANNEL DRIVE	JAMAICA	UNKNOWN
8606664	MOTT BASIN JAMACIA BAY /K	MOTT BASIN	JAMAICA BAY	UNKNOWN
1407456	TRACK	LOOP 2	LONG ISLAND CITY	UNKNOWN
1301782	ON TRACKS NEAR	QUEEN ST	LONG ISLAND CITY	UNKNOWN
1215892	PRIVATE DWELLING	53-09 663 ST	MASPETH	UNKNOWN
9707611	LIRR	5505 E OF 37 SIGNAL BRIDG	NEW YORK CITY	UNKNOWN
9703543	JAMICA BAY	NO CHANNEL BRIDGE/TRESSEL	NEW YORK CITY	UNKNOWN
9100148	LIRR	QNS VILLGE/HILLSIDE/LN#1	NEW YORK CITY	UNKNOWN
9000243	VAN GRUNT PUMP STATION	VAN GRUNT PUMP STATION	NEW YORK CITY	UNKNOWN
8911180	GARITSON CANAL/BKLYN	GARITSON CNAL	NEW YORK CITY	UNKNOWN
8807017	422 SOUTHERN BLVD/QUEENS	422 SOUTHERN BLVD	NEW YORK CITY	UNKNOWN
8803149	POLE TOP TRNSFRMER	CROSS ST & BEACH CHNNL DR	NEW YORK CITY	UNKNOWN
8709860	BYPASS/BKLYN	BKYLN	NEW YORK CITY	UNKNOWN
8706687	REG #D-23/B`KLYN/BCH CHAN	REG #D-23/BCH CHANNEL DR	NEW YORK CITY	UNKNOWN
9312483	RUNWAY CHANNEL	RUNWAY CHANNEL	QUEENS	UNKNOWN
9311790	1/4 NORTH SUBWAY BR IN	1/4 NORTH SUBWAY BR IN	QUEENS	UNKNOWN
9301896	NORWEGIAN "ARILE"	2 MILES N.E.OFF AMBROS LH	QUEENS	UNKNOWN
9211109	PAEDEGATE PS	PAEDEGATE PS	QUEENS	UNKNOWN
9210540	99 CEDARLAWN AVE	99 CEDARLAWN AVE	QUEENS	11691
1508054	ROADWAY- EXIT RAMP FROM ILE	CHRISTINA BLVD	QUEENS	UNKNOWN
1506774	18002 FEEDER ROUTE	FROM JAMACIA SUBSTATION TO CORONA SUBSTA	QUEENS	UNKNOWN
1405972	TO ROADWAY	262 COUNDRY RD	QUEENS	UNKNOWN
1206208	TO ROADWAY - SEWAGE	41ST EAST OF LAUREN ST	QUEENS	UNKNOWN
1009223	JAMAICA WATER PLANT	JAMAICA WATER PLANT	QUEENS	UNKNOWN
1007778	CON ED	261-09 EAST WILKSON AVE	QUEENS	UNKNOWN
1003227	OVERHEAD TRANS. POLE 34022	98-10 FARRAGUT	QUEENS	UNKNOWN
0913760	LIE	BP GAS STATION	QUEENS	UNKNOWN
0514525	3RD WARD FUELING STATION	PECK AVE	QUEENS	UNKNOWN
0008411	POTHEAD TRANSFORMER	ROCKAWAY SUB STATION	QUEENS	UNKNOWN
0006934	RIVLAB TRANSPORTATION	6202 ALVINA AVE	QUEENS	UNKNOWN
1011791	TANK TEST FAILURE	223-45 102ND AVE	QUEENS VILLAGE	UNKNOWN
0908116	SIMPSON RESIDENCE	103-0218 PLACE	QUEENS VILLAGE	UNKNOWN
1402798	AMTRAK LINE #3 TUNNEL HYDRAULIC OIL SPILL	MILE POST 1.89	QUEENS?	UNKNOWN
1500183	LB SUPER CHIEF	ROCK AWAY BAY	ROCK AWAY	UNKNOWN
9613950	USCG STATION ROCKAWAY	UNKNOWN	ROCKAWAY	UNKNOWN
9303067	49 BEACH CHANNEL DR.	49 BEACH CHANNEL DR.	ROCKAWAY	11691
9206809	1 NORTILLE	1 NORTILLE	ROCKAWAY	UNKNOWN
0600665	US COAST GUARD	BEACH CHANNEL DRIVE	ROCKAWAY	UNKNOWN
0508516	BAYS WATER	BAYS WATER	ROCKAWAY	UNKNOWN
9213738	BEACH CHANNEL DRIVE	BEACH CHANNEL DRIVE	ROCKAWAY BEACH	UNKNOWN
1113245	DALDEO RESIDENCE	149-17-120 PLACE	SOUTH OZONE PARK	UNKNOWN
0503782	NEAR ATLANTIC BEACH	BEACH 22ND ST/BEACH 7TH S	THE ROCKAWAYS	UNKNOWN

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP004001798	CONSOLIDATED EDISON CO	BOWY V5925		UNKNOWN
NYP004018982	CONSOLIDATED EDISON CO	MH9627 HARRISON STA		UNKNOWN
NYP004019275	CONSOLIDATED EDISON CO	MH51217		UNKNOWN
NYP004019899	CONSOLIDATED EDISON CO	V909 VARL & JACKSON		UNKNOWN
NYP004020129	CONSOLIDATED EDISON CO	MAIN BODY - OAKWOOD S/S		UNKNOWN
NY0000097337	NYSDOT	MEADOW LANE	FLUSHING	UNKNOWN
NYD000953018	LONG ISLAND RAILROAD CONT #25-0-008	DB BRIDGE	LONG ISLAND CITY	UNKNOWN
NY0000010363	NYCDOT	N/S	N/S	UNKNOWN
NY0000243261	NYSDOT	BOATBASIN /WSE	QUEENS	UNKNOWN
NYP000930321	CONSOLIDATED EDISON	N/S	QUEENS	UNKNOWN
NYP000930529	CONSOLIDATED EDISON CO	V1099-1685 FRANHOLM AVE	QUEENS	UNKNOWN
NYP004000121	CONSOLIDATED EDISON	V10829-2255 MENAUTO BLVD	QUEENS	UNKNOWN
NYP004000634	CONSOLIDATED EDISON	V7176-WEST HILL APARTMENTS	QUEENS	UNKNOWN

NYP004004677	CONSOLIDATED EDISON		N/S	QUEENS	UNKNOWN
NYP004004925	CONSOLIDATED EDISON		VAULT #0442 - 1548	QUEENS	UNKNOWN
NYP004006003	CONSOLIDATED EDISON		#5289 - 275 KENSTO DR	QUEENS	UNKNOWN
NYP004006318	CONSOLIDATED EDISON		V5014 - W.F. ADMIN BLDG	QUEENS	UNKNOWN
NYP004006847	CONSOLIDATED EDISON		V5034 - MASTERS	QUEENS	UNKNOWN
NYP004006904	CONSOLIDATED EDISON		V1903 - ALLINGTON	QUEENS	UNKNOWN
NYP004007290	CONSOLIDATED EDISON		46251 -	QUEENS	UNKNOWN
NYP004008248	CONSOLIDATED EDISON		N/S	QUEENS	UNKNOWN
NYP004008785	CONSOLIDATED EDISON		MH 2631	QUEENS	UNKNOWN
NYP004009320	CONSOLIDATED EDISON		TRANSP F/O 17 & 34ST	QUEENS	UNKNOWN
NYP004012514	CONSOLIDATED EDISON		16 - SHERWOOD PARK	QUEENS	UNKNOWN
NYP004023016	CONSOLIDATED EDISON		MH184490-	QUEENS	UNKNOWN
NYP004002709	CONSOLIDATED EDISON			T/A450	UNKNOWN
NYP004665485	CON EDISON		40-07 75 ST OPP	WOODSIDE	UNKNOWN

Chemical Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
2-000438	ALBERT HOWELL RELIAB LE AUTO PARTS	20-14 BEACH 21 ST	FAR ROCKAWAY	11691

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYG995193				UNKNOWN
NYU000079	BEST CONCRETE MIX CORP.			UNKNOWN
NYU900062	FEDERAL EXPRESS			UNKNOWN
NYU900079	BEST CONCRETE MIX CORP			UNKNOWN

Air Releases

FACILITY ID	FACILITY NAME		STREET	CITY	ZIP
3608100612	ALERT METAL FINISH		991 PECONIC AVE	GLENDALE	UNKNOWN
3608102022	ALERT METAL FINISHING		991 PECONIA AVENUE	GLENDALE	UNKNOWN
3688800011	USCG-LIGHT STATION		AMBROSE	NEW YORK	UNKNOWN
NY081X1L5	CRYDER ASSOCIATES LTD	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
NY081X4KU	COSMOPOLITAN ASSOC	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
NY081X72J	A & K REALTY	QUEENS	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
3608100139	NY JOB CORPS CENTER		NO STREET ADDRESS	QUEENS	UNKNOWN
3608100140	NAVY RESRVE TRAINING		NO STREET ADDRESS	QUEENS	UNKNOWN
3608100692	PARIS KNITTING		NO STREET ADDRESS	QUEENS	UNKNOWN
3608100693	ASTORIA AL & BR		NO STREET ADDRESS	QUEENS	UNKNOWN
NY0813893	NEWTOWN REFINING CO INC		1	QUEENS	UNKNOWN

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

D006 Cadmium

D008 Lead

F002 The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1−trichloroethane, chlorobenzene, 1,1,2−trichloro−1,2,2−trifluoroethane, ortho−dichlorobenzene, trichlorofluoromethane, and 1,1,2−trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)

Source: U. S. Environmental Protection Agency

How Toxic Site Locations Are Mapped

Toxics Targeting maps toxic site locations on a digital version of the U. S. Census map or those used by local authorities using addresses and map coordinates provided by site owners/operators or government agencies. In order to allow site locations to be verified independently, the information used to map each site is presented in the first section of each Toxic Site Profile, along with a description of the mapping technique used and any address corrections that were made in order to locate toxic sites with incomplete or inadequate site location information. The mapping process is explained below.

Map Identification Number: 12 Site Name: Acme World Manufacturing, Inc.

Site Address: 55 Main Street Anytown, NY 11797

MAP LOCATION INFORMATION

Site location mapped by:

Address Matching

1) Most toxic sites are mapped by matching addresses provided by site owners/operators or government agencies with locations on a digital version of the street or parcel map. These site locations are identified with the method used to map them.

Note: Some sites have an address match location and a map coordinate location. Both locations are mapped because they can be equally correct.

or Map Coordinate

2) Some toxic sites are located using map coordinates provided by site owners/ operators or government agencies. These site locations are identified "map coordinate." Map coordinates for Toxic Wastewater Discharges, Toxic Release Inventory sites and Major Oil Storage Facilities should be considered suspect.

or Manual Mapping

or Site Visit

3) Incomplete addresses or map coordinates require some site locations to be determined by commercial street maps (manual mapping), site visits, map coordinates from other databases and address location services. Application of any of these methods is identified accordingly.

ADDRESS CHANGE INFORMATION

Revised Street: NO CHANGE

Revised zip code: NO CHANGE

4) Site addresses are sometimes corrected to eliminate obvious errors that prevent sites from being mapped. All address corrections are noted here.

Information Source Guide

Toxics Targeting's Environmental Reports contain government and other information compiled on 21 categories of reported known or potential toxic sites. Each toxic site database is described below with information detailing a) the source of the information, b) the date when each database is covered to and c) when *Toxics Targeting* obtained the information..

1) **National Priority List for Federal Superfund Cleanup:** Toxic sites nominated for cleanup under the Federal Superfund program. Annual compilation of special two-page detailed profiles of NPL sites. Also includes delisted NPL sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated from: 9/9/2015. Data obtained by Toxics Targeting: 9/9/2015.
New Facilities updated through: 9/9/2015. Data obtained by Toxics Targeting: 9/9/2015.

2) **Inactive Hazardous Waste Disposal Site Registry:** New York State database that maintains information and aids decision making regarding the investigation and cleanup of toxic sites. The Registry's data includes two-page profiles noting site name, ID number, description, classification, cleanup status, types of cleanup, owner information, types and quantities of contaminants, and assessment of health and environmental problems. Also included are sites that qualify for possible inclusion on the Registry. These Registry Qualifying sites may or may not be on the Site Registry.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.
New Facilities updated to: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.

3) **Federal & State Corrective Action Activity (CORRACTS):** New York State and Federal databases of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.**

Federal Data Source: U. S. Environmental Protection Agency[1]
Data attributes updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.
New facilities updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.

State Data Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.
New facilities updated through: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.

4) **CERCLIS:** Toxic sites listed in the Federal Comprehensive Environmental Response, Compensation and Liability Information System. Includes Active and No Further Remedial Action Planned (NFRAP) sites.
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency.[1]
Data attributes updated through: 10/25/2013. Data obtained by Toxics Targeting: 1/07/2014.
New Facilities updated through: 1/11/2016. Data obtained by Toxics Targeting: 1/23/2016.

5) **Brownfield Programs:** NYS & NYC programs for sites that are abandoned, idled or under-used industrial and/or commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination.
ASTM required.*

(a) **NYS DEC Brownfield Programs**: Source: New York State Department of Environmental Conservation.[2]
includes: **Brownfield Cleanup Program (BCP), Voluntary Cleanup Program (VCP), and Environmental Restoration Program (ERP)**
Data attributes updated through: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.
New Facilities updated to: 3/09/2016. Data obtained by Toxics Targeting: 3/09/2016.

(b) **NYC Voluntary Cleanup Program:** Source: NYC Office of Environmental Remediation
Data attributes updated through: 11/30/15. Data obtained by Toxics Targeting: 12/10/2015.
New Facilities updated to: 11/30/15. Data obtained by Toxics Targeting: 12/10/2015.

6) **Solid Waste Facilities:** a compilation of the following 2 databases:

(a) **NYS Solid Waste Registry:** which includes, but is not limited to, landfills, incinerators, transfer stations, recycling centers.
ASTM required.* Fannie Mae required.** Source: New York State Dept. of Environmental Conservation.[2]
Data updated to: 4/1/2013. Data obtained by Toxics Targeting: 4/1/2013.

(b) **1934 Solid Waste Disposal Site in New York City:** which includes sites operated by municipal authorities circa 1934. Source: City of New York Department of Sanitation (1984). The Waste Disposal Problem in New York City: A Proposal For Action.

7) **RCRA Hazardous Waste Treatment, Storage or Disposal Facility Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the DEC's Division of Environmental Remediation pursuant to NYS Law and the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/22/2016. New facilities obtained by Toxics Targeting: 4/22/2016.
Manifest transactions data updated to: 4/22/2016. Manifest transactions data obtained by Toxics Targeting: 4/22/2016.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]
New facilities updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.
Data attributes updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.

8) **Spills Information Database:** Spills reported to the DEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from Petroleum Bulk Storage Regulations) or 6 NYCRR Section 595.2 (from Chemical Bulk Storage Regulations). This database includes both *active* and *closed* spills.
ASTM required.* Fannie Mae.** Source: NYS Department of Environmental Conservation.[2]

New spills through: 2/13/2016 New spills data obtained by Toxics Targeting: 2/13/2016
Spill attribute data through: 2/13/2016 Spill attribute data obtained by Toxics Targeting: 2/13/2016

Active spills: paperwork not completed. Closed spills: paperwork completed.
Both active and closed spills may or may not have been cleaned up (see Date Cleanup Ceased in spill profiles).

9) **Major Oil Storage Facilities:** NYS database of facilities licensed pursuant to Article 12 of the Navigation Law, 6NYCRR Parts 610 and 17NYCRR Part 30, such as onshore facilities or vessels, with petroleum storage capacities equal to or greater than four hundred thousand gallons. **Tank & other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

Data updated through: 3/5/2016. Data obtained by Toxics Targeting: 3/5/2016.

10) **Petroleum Bulk Storage Facilities:** a compilation of local and state databases of aboveground and underground petroleum storage tank facilities.

(a) **NYS Petroleum Bulk Storage Database:** This includes all New York State counties except Cortland, Nassau, Rockland, Suffolk, and Westchester. ASTM required.* Fannie Mae required.**
Source: NYS Department of Environmental Conservation.[2]
New facilities updated through: 3/5/2016. Data obtained by Toxics Targeting: 3/5/2016.
Tank data updated through: 3/5/2016. Data obtained by Toxics Targeting: 3/5/2016.

(b) **New York City Fire Department Tank Data:** **Data has been withheld by the NYC Fire Dept.**
Source: New York City Fire Department. Data obtained by Toxics Targeting: 2/18/1997

11) **RCRA Hazardous Waste Generators and/or Transporters Databases:**

(a) **Manifest Information:** New York State database of hazardous waste facilities and shipments regulated by the NYS Department of Environmental Conservation's Division of Environmental Remediation pursuant to New York State Law. ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]

New facilities updated through: 4/22/2016. New facilities obtained by Toxics Targeting: 4/22/2016.
Manifest transactions data updated to: 4/22/2016. Manifest transactions data obtained by Toxics Targeting: 4/22/2016.

(b) **RCRA Notifier & Violations Information:** U. S. Environmental Protection Agency database of hazardous facilities regulated pursuant to the Resource Conservation and Recovery Act (RCRA).
ASTM required.* Fannie Mae required.** Source: U. S. Environmental Protection Agency[1]

New facilities updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.
Data attributes updated through: 4/11/2016. Data obtained by Toxics Targeting: 4/19/2016.

12) **Chemical Bulk Storage Facilities:** New York State database of facilities compiled pursuant to 6NYCRR Part 596 that store regulated substances listed in 6NYCRR Part 597 in aboveground tanks with capacities greater than 185 gallons and /or in underground tanks of any size. **Tank & other data withheld by NYSDEC as of 4/1/2002**.
ASTM required.* Fannie Mae required.** Source: New York State Department of Environmental Conservation.[2]
Data updated through: 3/5/2016. Data obtained by Toxics Targeting: 3/5/2016.

13) **Historic New York City Utility Facilities (1898 to 1950):** An inventory of selected power generating stations, manufactured gas plants, gas storage facilities, maintenance yards and other gas and electric utility sites identified in various historic documents, maps and annual reports of New York utility companies, including: Sanborn Fire Insurance Maps of NYC (1898-1950); Consolidated Edison Co. Annual Reports (1922-1939); Consolidated Edison Co. Map: "Boroughs of Manhattan and the Bronx Showing Distribution Mains of the New York Edison Co.," (1922); and Consolidated Edison document: "Generating and Annex Stations," (1911).

14) **Hazardous Substance Waste Disposal Site Study:** NYS database of waste disposal sites that may pose threats to public health or the environment, but could not be remediated using monies from the Hazardous Waste Remedial Fund.
Source: New York State Department of Environmental Conservation.[2]
Data updated to: 5/16/2000. Data obtained by Toxics Targeting: 5/16/2000.

15) **Toxic Release Inventory (TRI):** Federal database of manufacturing facilities required under Section 313 of the Federal Emergency Planning and Community Right-to-Know Act to report releases to the air, water and land of any specifically listed toxic chemical. See Fannie Mae requirement** below.
Source: U. S. Environmental Protection Agency.[1] / NYS Department of Environmental Conservation[2]
Data updated through: 3/8/2004. Data obtained by Toxics Targeting: 3/25/2004

16) **Toxic Wastewater Discharges (Permit Compliance System):** Federal database of discharges of wastewater to surface waters and groundwaters. See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 6/17/2004. Data obtained by Toxics Targeting: 7/19/2004.

17) **Air Discharge Facilities:** EPA AIRS database containing address information on each air emission facility and the type of air pollutant emission it is. Compliance information is also provided on each pollutant as well as the facility itself.
See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency[1]
Data updated through: 11/24/1999. Data obtained by Toxics Targeting: 1/6/2000

18) **Civil Enforcement & Administrative Docket:** This database is the U. S. EPA's system for tracking administrative and civil judiciary cases filed on behalf of the agency by the Department of Justice. Fannie Mae required.**
Source: U. S. Environmental Protection Agency.[1]
New Sites through: 10/14/1999.
Data updated through: 10/14/1999. Data obtained by Toxics Targeting: 11/18/1999.

19) **New York City Environmental Quality Review (CEQR) – E Designation Sites:** These sites are parcels assigned a special environmental ("E") designation under the CEQR process. E designation requires specific protocols that must be followed. Source: New York City Department of Planning[3]
Data updated through: 4/28/2015. Data obtained by Toxics Targeting: 5/24/2015.

20) **Emergency Response Notification System (ERNS):** Federal database of spills compiled by the Emergency Response Notification System. On-site searches only.
ASTM required.* See Fannie Mae requirement** below. Source: U. S. Environmental Protection Agency.[1]
Data updated through: 1/31/2000. Data obtained by Toxics Targeting: 2/15/2000

21) **Remediation Site Borders:** Remediation site borders reported by NYSDEC.
Source: New York State Department of Environmental Conservation.[2]
Updated through: 4/8/2009. Data obtained by Toxics Targeting: 7/21/2009.

* American Society of Testing Materials: Standard Practice on Environmental Site Assessments: Phase I Environmental Site Assessment Process (E1527-05).

** Fannie Mae's Part X Environmental Hazards Management Procedures specify 1.0 mile searches for "any state or Federal list of hazardous waste sites (e.g. CERCLIS, HWDMS etc.)." Searches for the property and adjacent properties are specified for "chemical manufacturing plants," "obvious high risk neighbors engaging in storing or transporting hazardous waste, chemicals or substances" and "...any documented or visible evidence of dangerous waste handling... (e.g. stressed vegetation, stained soil, open or leaking containers, foul fumes or smells, oily ponds, etc." Searches for property and adjacent properties can include sites up to a quarter mile away (W. Hayward, Director, Multi-Family Business Planning and Control, Fannie Mae, personal communication, 5/94).

[1]U. S. Environmental Protection Agency, 290 Broadway, NY, NY 10007-1866.

[2]NYS Department of Environmental Conservation, 625 Broadway, Albany, NY 12233.

[3]New York City Department of City Planning, 22 Reade St, New York, NY 10007-1216

APPENDIX D
LOCAL RECORDS

B Form 54C (Rev. 11/71) 10-M 702720(71)

THE CITY OF NEW YORK

HOUSING AND DEVELOPMENT ADMINISTRATION

DEPARTMENT OF BUILDINGS

CERTIFICATE OF OCCUPANCY

BOROUGH QUEENS **DATE:** 1/29/79 **NO.** Q 193375

This certificate supersedes C.O. No. ZONING DISTRICT C8-1 R5

THIS CERTIFIES that the ~~new~~ altered ~~existing~~ building—premises located at Block 15705 Lot 59

1039 B. 21st St.

CONFORMS SUBSTANTIALLY TO THE APPROVED PLANS AND SPECIFICATIONS AND TO THE REQUIREMENTS OF ALL APPLICABLE LAWS, RULES AND REGULATIONS FOR THE USES AND OCCUPANCIES SPECIFIED HEREIN.

PERMISSIBLE USE AND OCCUPANCY

Alt. 1226/76

STORY	LIVE LOAD LBS. PER SQ. FT.	MAXIMUM NO. OF PERSONS PERMITTED	ZONING DWELLING OR ROOMING UNITS	BUILDING CODE HABITABLE ROOMS	ZONING USE GROUP	BUILDING CODE OCCUPANCY GROUP	DESCRIPTION OF USE
1st	O.G.				8		Public parking lot for 34 cars. *Dept. of traffic jurisdiction and transit authority bus stop.

OPEN SPACE USES ______________________
(SPECIFY—PARKING SPACES, LOADING BERTHS, OTHER USES, NONE)

NO CHANGES OF USE OR OCCUPANCY SHALL BE MADE UNLESS A NEW AMENDED CERTIFICATE OF OCCUPANCY IS OBTAINED

THIS CERTIFICATE OF OCCUPANCY IS ISSUED SUBJECT TO FURTHER LIMITATIONS, CONDITIONS AND SPECIFICATIONS NOTED ON THE REVERSE SIDE.

______________________ BOROUGH SUPERINTENDENT

______________________ COMMISSIONER

OFFICE COPY—DEPARTMENT OF BUILDINGS

APPENDIX E

CITY DIRECTORIES

1049 Beach 21st St
1037-1059 Beach 21st St
Far Rockaway, NY 11691

Inquiry Number: 4621844.1
May 18, 2016

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1922 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 100 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2013	Cole Information Services	-	X	X	-
2008	Cole Information Services	-	X	X	-
2005	Hill-Donnelly Information Services	-	X	X	-
2000	Cole Information Services	-	X	X	-
1996	NYNEX	-	-	-	-
1991	NYNEX Information Resource Company	-	-	-	-
1983	New York Telephone	-	-	-	-
1976	New York Telephone	-	-	-	-
1970	New York Telephone	-	-	-	-
1967	New York Telephone	-	-	-	-
1962	New York Telephone Directory	-	X	X	-
	New York Telephone Directory	X	X	X	-
1950	New York Telephone	-	X	X	-
	New York Telephone	X	X	X	-
1945	New York Telephone	-	-	-	-
1939	New York Telephone Company	-	X	X	-
1934	R. L. Polk & Co.	-	X	X	-
	R. L. Polk & Co.	X	X	X	-
1922	H.C. Morris	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

Address	*Type*	*Findings*
1037 Beach 21st St	Client Entered	X
1039 Beach 21st St	Client Entered	
1041 Beach 21st St	Client Entered	
1043 Beach 21st St	Client Entered	
1045 Beach 21st St	Client Entered	
1053 Beach 21st St	Client Entered	
1055 Beach 21st St	Client Entered	
1057 Beach 21st St	Client Entered	X
1059 Beach 21st St	Client Entered	X
1049 Beach 21st St	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

1037-1059 Beach 21st St
Far Rockaway, NY 11691

FINDINGS DETAIL

Target Property research detail.

BEACH 21 ST

1037 BEACH 21 ST

Year	Uses	Source
1962	Walker & Son Luisbr Corp	New York Telephone Directory

BEACH 21ST ST

1037 BEACH 21ST ST

Year	Uses	Source
1934	Beegle Publishing Co RTN Mary P Urban pres A E Beegle Publshr & genl mgr newspaper publrs	R. L. Polk & Co.
	Courtney John slsmn Bugle Pub Co	R. L. Polk & Co.
	De Persia Arth slsmn Bugle Pub Co	R. L. Polk & Co.
	Far Rockaway Journal TN A E Beegle publr and genl mgr	R. L. Polk & Co.
	Jorgensen Arth W cotnr	R. L. Polk & Co.
	Maza Anthony prsmn Beegle Pub Co	R. L. Polk & Co.
	Maza Thos prsmn Beegle Pub Co	R. L. Polk & Co.
	Mazza Michl mach opr Beegle Pub Co	R. L. Polk & Co.
	Urban May P pres Boegle Publishing Co	R. L. Polk & Co.
	Zito John prsmn Beegle Pub Co	R. L. Polk & Co.

Beach 21st St

1037 Beach 21st St

Year	Uses	Source
1934	Beegle Publishing Co RTN Mary P Urban pres A E Beegle Publshr & genl mgr newspaper publrs	R. L. Polk & Co.
	Courtney John slsmn Bugle Pub Co	R. L. Polk & Co.
	De Persia Arth slsmn Bugle Pub Co	R. L. Polk & Co.

FINDINGS

Year	Uses	Source
1934	Far Rockaway Journal TN A E Beegle publr and genl mgr	R. L. Polk & Co.
	Jorgensen Arth W cotnr	R. L. Polk & Co.
	Maza Anthony prsmn Beegle Pub Co	R. L. Polk & Co.
	Maza Thos prsmn Beegle Pub Co	R. L. Polk & Co.
	Mazza Michl mach opr Beegle Pub Co	R. L. Polk & Co.
	Urban May P pres Boegle Publishing Co	R. L. Polk & Co.
	Zito John prsmn Beegle Pub Co	R. L. Polk & Co.

1039 Beach 21st St

Year	Uses	Source

1041 Beach 21st St

Year	Uses	Source

1043 Beach 21st St

Year	Uses	Source

1045 Beach 21st St

Year	Uses	Source

BEACH 21ST ST

1047 BEACH 21ST ST

Year	Uses	Source
1934	Mullen & Buckley Screen Co Inc Chas M Kearns pres Vestry Sterns v pres Albert A Richey sec treas screen mfrs	R. L. Polk & Co.
	Roebuck S Co A Richey sec screen mfrs	R. L. Polk & Co.

Beach 21st St

1049 Beach 21st St

Year	Uses	Source

FINDINGS

1053 Beach 21st St

Year	*Uses*	*Source*

1055 Beach 21st St

Year	*Uses*	*Source*

1057 Beach 21st St

Year	*Uses*	*Source*
1934	Hickey Chas lab	R. L. Polk & Co.
	Klein Miklos Dora uphol	R. L. Polk & Co.
	Lang Saml furn rms	R. L. Polk & Co.
	Lang Saml truck driver	R. L. Polk & Co.
	Queens Roffing Works RTN A Donner	R. L. Polk & Co.

1059 Beach 21st St

Year	*Uses*	*Source*
1934	Elsen Lena wid Leo furn rms	R. L. Polk & Co.
	Van Clief Geo lab	R. L. Polk & Co.

BEACH 21ST ST

10-57 BEACH 21ST ST

Year	*Uses*	*Source*
1950	BROWN W J	New York Telephone
	GENL ROOFING & SHEET METAL COTRACTOR	New York Telephone
	LEHRER HAROLD ROOFNG & SHEET METL	New York Telephone

10-59 BEACH 21ST ST

Year	*Uses*	*Source*
1950	FEW ODESSA	New York Telephone

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

BEACH 21

1063 BEACH 21

Year	Uses	Source
1939	Zucker H leathr findgs	New York Telephone Company

1067 BEACH 21

Year	Uses	Source
1939	Peoples Market meats	New York Telephone Company
	Koestner Anthony meats	New York Telephone Company

1069 BEACH 21

Year	Uses	Source
1939	Kampner Wm weldng svce	New York Telephone Company
	Far Rockaway Welding Svce	New York Telephone Company

1075 BEACH 21

Year	Uses	Source
1939	Cohn Henry reprs	New York Telephone Company
	Henrys Repr Svce	New York Telephone Company
	Lande Isadore plmbng supls	New York Telephone Company

BEACH 21 ST

1011 BEACH 21 ST

Year	Uses	Source
1962	Gladys Beauty Salon	New York Telephone Directory

1015 BEACH 21 ST

Year	Uses	Source
1962	Clark Lunchnet	New York Telephone Directory

1017 BEACH 21 ST

Year	Uses	Source
1962	Wavecrest Svce Sta Inc	New York Telephone Directory

FINDINGS

1031 BEACH 21 ST

Year	Uses	Source
1962	Branch	New York Telephone Directory
	Verby H Co Inc bldg matl	New York Telephone Directory

1034 BEACH 21 ST

Year	Uses	Source
1962	May Jay Mfg Co Inc	New York Telephone Directory

1040 BEACH 21 ST

Year	Uses	Source
1962	Gothic Creations Inc ofc	New York Telephone Directory
	Gothic Creations Inc fcty	New York Telephone Directory
	Dawson Minnie	New York Telephone Directory
	Crawford Mary Mrs	New York Telephone Directory
	Hymes Sallie	New York Telephone Directory

1046 BEACH 21 ST

Year	Uses	Source
1962	Sapperstein Murray Inc elctrons	New York Telephone Directory

1050 BEACH 21 ST

Year	Uses	Source
1962	Malvito Armett	New York Telephone Directory
	Kleins Uphlstrg & Interior Decoratg	New York Telephone Directory

1061 BEACH 21 ST

Year	Uses	Source
1962	Kurtz Antiqs	New York Telephone Directory

BEACH 21ST

1050 BEACH 21ST

Year	Uses	Source
1934	Schoen Max kate clo prsr	R. L. Polk & Co.

BEACH 21ST ST

1011 BEACH 21ST ST

Year	Uses	Source
1934	Dole Steph T Eva doormn	R. L. Polk & Co.
	Dole Steph T jr truck driver	R. L. Polk & Co.

FINDINGS

Year	Uses	Source
1934	Waag Electric Co N H B Waag battery service	R. L. Polk & Co.
	Dole Evelyn	R. L. Polk & Co.

1012 BEACH 21ST ST

Year	Uses	Source
1934	Henshaw Harry E gen mdse	R. L. Polk & Co.

1016 BEACH 21ST ST

Year	Uses	Source
1934	Albore Gust Avo v pres Arcade Beauty Shop Inc	R. L. Polk & Co.
	Paladino Salvatore sec treas Arcade Beauty Shop Inc	R. L. Polk & Co.
	Arcade Beauty Shop Inc NY Michl Miles pres Gust Avo Albore v pres Salvatore Paladino sec treas	R. L. Polk & Co.
	Miles Michl pres Arcade Beauty Shop Inc	R. L. Polk & Co.

1017 BEACH 21ST ST

Year	Uses	Source
2005	Gordons Auto Svc & Repair Inc	Hill-Donnelly Information Services
	Dynamic Performance Is	Hill-Donnelly Information Services
2000	Rodriguez Auto Bdy	Cole Information Services
	Owen Auto Svce	Cole Information Services

1029 BEACH 21ST ST

Year	Uses	Source
1934	Erb Robt Caroline restr	R. L. Polk & Co.

1031 BEACH 21ST ST

Year	Uses	Source
1934	Verby H Co Inc NY Harry Verby pres Sophie Verby v pres treas Helen Verby sec bldg material	R. L. Polk & Co.

1032 BEACH 21ST ST

Year	Uses	Source
2008	OWEN AUTO SERVICE	Cole Information Services
2005	Owen Auto Svc	Hill-Donnelly Information Services

FINDINGS

1040 BEACH 21ST ST

Year	Uses	Source
2005	Anderson Sharon V	Hill-Donnelly Information Services
	h Simmonds Sherdon v 718 868 0583 oi	Hill-Donnelly Information Services

1046 BEACH 21ST ST

Year	Uses	Source
2013	CARIB MARKET NET	Cole Information Services
2008	CARIB MARKET NET	Cole Information Services
2005	Carib Market Net	Hill-Donnelly Information Services
1934	Kadlec The Tailor TN Henry Gold	R. L. Polk & Co.

1048 BEACH 21ST ST

Year	Uses	Source
2013	MIKES BEAUTY COMPLEX	Cole Information Services
2008	MIKES BEAUTY COMPLEX	Cole Information Services
2005	Mikes Beauty Complex Is	Hill-Donnelly Information Services
2000	Mikes Bty Complex	Cole Information Services
1934	Eitelberg Bertha	R. L. Polk & Co.
	Miskovsky Louis Amelia tailor	R. L. Polk & Co.
	Brinkman Jas A Brinkmans Quality Shoe Shop	R. L. Polk & Co.
	Eitelberg Andrew Alice	R. L. Polk & Co.

1050 BEACH 21ST ST

Year	Uses	Source
2008	ALIVE MINISTRY	Cole Information Services
2005	No Current Listing	Hill-Donnelly Information Services
2000	Try Me	Cole Information Services
1934	Shur Anna M Mrs	R. L. Polk & Co.
	Shur Building	R. L. Polk & Co.
	World Sign Service RTN: Danl S Shur	R. L. Polk & Co.
	Shur Danl S World Sign Service	R. L. Polk & Co.

1052 BEACH 21ST ST

Year	Uses	Source
1934	Taylor Georgia	R. L. Polk & Co.
	Smith Wm lab	R. L. Polk & Co.
	Smith Henry T Mattie chauf	R. L. Polk & Co.
	Scott Irene Mrs dom	R. L. Polk & Co.
	Robertson Virginia	R. L. Polk & Co.

FINDINGS

Year	Uses	Source
1934	Holmes Alex Filmore lab	R. L. Polk & Co.
	Harris Leonia fctywkr	R. L. Polk & Co.
	Fields Harry restr	R. L. Polk & Co.
	Bunney Jas lab	R. L. Polk & Co.
	Robertson Sylvester lab	R. L. Polk & Co.

10-61 BEACH 21ST ST

Year	Uses	Source
1950	GRANT FLOOR WAXING	New York Telephone
	ART METAL LAMP MOUNTING CO	New York Telephone

10-63 BEACH 21ST ST

Year	Uses	Source
1950	BRINSON GEO	New York Telephone
	HARRIS HENRY K	New York Telephone
	ARROW EMPLOY AGCY	New York Telephone
	ORTNER SAML	New York Telephone
	SHAPIRO MAYBELLA C EMPLOY AGCY	New York Telephone
	LEWIS HENRY K	New York Telephone

10-65 BEACH 21ST ST

Year	Uses	Source
1950	LANDE ISADORE PLMBNG SUPLS	New York Telephone

10-67 BEACH 21ST ST

Year	Uses	Source
1950	VICTORY WINE LIQUOR STORE	New York Telephone
	SHAPIRO JOHN J WINES & LIQRS	New York Telephone
	HEIMS HOWARD WINES & LIQRS	New York Telephone

10-69 BEACH 21ST ST

Year	Uses	Source
1950	KAMPNER WM WELDNG SVCE	New York Telephone

10-77 BEACH 21ST ST

Year	Uses	Source
1950	EDWARDS SHOE STORE SUPL CO	New York Telephone
	ZUCKER H LEATHR FLNDNGS	New York Telephone

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
1037-1059 Beach 21st St	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1945, 1939, 1922

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
10-61 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
10-63 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
10-65 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
10-67 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
10-69 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
10-77 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1945, 1939, 1934, 1922
1011 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1011 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1012 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1015 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1016 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1017 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1017 BEACH 21ST ST	2013, 2008, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1029 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1031 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1031 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1032 BEACH 21ST ST	2013, 2008, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
1032 BEACH 21ST ST	2013, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1034 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1040 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1040 BEACH 21ST ST	2013, 2008, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1046 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1046 BEACH 21ST ST	2013, 2008, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1046 BEACH 21ST ST	2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1048 BEACH 21ST ST	2013, 2008, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1048 BEACH 21ST ST	2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1050 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1050 BEACH 21ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1050 BEACH 21ST ST	2013, 2008, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1050 BEACH 21ST ST	2013, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1934, 1922
1052 BEACH 21ST ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1939, 1922
1061 BEACH 21 ST	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1950, 1945, 1939, 1934, 1922
1063 BEACH 21	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1934, 1922
1067 BEACH 21	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1934, 1922
1069 BEACH 21	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1934, 1922
1075 BEACH 21	2013, 2008, 2005, 2000, 1996, 1991, 1983, 1976, 1970, 1967, 1962, 1950, 1945, 1934, 1922

PHASE I ENVIRONMENTAL SITE ASSESSMENT

for

Beach 21st Street Development
Queens, New York

Prepared For:

Beach 21st Limited Partnership
c/o The Community Builders, Inc.
8 West 38th Street, Suite 1102
New York, NY 10018

Prepared By:

Langan Engineering, Environmental, Surveying,
Landscape Architecture, and Geology, D.P.C.
21 Penn Plaza
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New York, New York 10001

Michael Burke, PG, CHMM
Principal/Vice President

September 19, 2018
Langan Project No. 170540601

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EXECUTIVE SUMMARY

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) was retained by Beach 21st Limited Partnership (the User) to prepare this Phase I Environmental Site Assessment (ESA) for the property on Beach 21st Street in the Far Rockaway neighborhood of Queens, New York (the Subject Property). The 42,500-square-foot (±0.98 acre) Subject Property is identified as Queens Borough Tax Block 15705, Lot 69 and a portion of Lot 59. Configuration of the property is rectangular with a frontage of about 300 feet along Beach 21st Street. No permanent structures are located at the Subject Property, which is used as a parking lot and bus stop. The Subject Property is located mid-block, on the city block bound by Beach 21st Street to the east, Cornaga Avenue to the south, Beach 22nd Street to the west, and Mott Avenue to the north.

According to the United States Geological Survey (USGS) Far Rockaway, N.Y.-N.J. 7.5-minute Series Topographic Quadrangle Map, the Subject Property is at an elevation of approximately9 20 feet above mean sea level (relative to North American Vertical Datum of 1988 [NAVD88]). The Subject Property was observed to gently slope down to the northwest.

This Phase I ESA was conducted in accordance with ASTM International (ASTM) E1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) and the United States Environmental Protection Agency (USEPA) All Appropriate Inquiry (AAI) Rule for the purpose of identifying recognized environmental conditions (RECs), historical RECs (HRECs), controlled RECs (CRECs) and business environmental risks (BERs). The Subject Property had no HRECs or CRECs and the others are summarized below.

Recognized Environmental Conditions

A REC is defined by ASTM E1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property due to any release to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. The Phase I ESA identified the following RECs:

<u>REC 1 – Historical Use of the Subject Property</u>

Historical uses of the Subject Property include:

- Long Island Rail Road (LIRR) railroad tracks (1886 to 1996)
- Coal/lumber yard (1890 to 1933)

- Manufacturing facilities (1912 to 1951)
- Woodworking (1912 to 1962)
- Carpet cleaning (1912)
- A tin shop (1951)
- Painting facilities (1912 to 1951)

Inadvertent releases of petroleum products, solvents, or other hazardous substances related to these former site uses may have impacted soil, groundwater, and soil vapor.

REC 2 – Historical UST at the Subject Property

The 1912 Sanborn Map shows an underground storage tank (UST) on the Subject Property. Additional records related to the tank were not available; therefore, it is possible that the tank is still in place. Potential undocumented petroleum releases may have adversely impacted soil, groundwater, and/or soil vapor.

REC 3 – Current and Historical Use of Adjoining and Surrounding Properties

Current and historical use of adjoining and surrounding up- and cross-gradient properties included:

- gasoline filling stations, including one on southern adjoining property with registered petroleum bulk storage tanks (1933 and 2006)
- dry cleaners (1951 to 1981)
- auto repair facilities (1933-present)
- a manufacturing company (1950 to 1970)
- battery service (1934)

Inadvertent releases of petroleum products, solvents, and/or or other hazardous substances related to these uses may have migrated and impacted groundwater and/or soil vapor at the Subject Property. Langan observed monitoring wells south of the Subject Property that are indicative of previous environmental investigation. Contaminants investigated on these neighboring sites may have migrated and impacted groundwater and/or soil vapor at the Subject Property.

Business Environmental Risk

A BER is defined by ASTM 1527-13 as a risk that can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

The following BERs were identified:

- Geotechnical evaluations completed nearby indicate that the Subject Property is likely underlain by a layer of historic fill material. Historic fill material can include brick, concrete, cinders, coal, slag, and ash and may contain several types of contamination at concentrations above applicable regulatory levels, including semivolatile organic compounds (SVOCs), pesticides, and metals. The presence of historic fill would not trigger a regulatory reporting obligation, but may result in premium costs for handling and disposal during redevelopment.
- Three on-site storm drains were not observed to have obvious effluent pipes, suggesting they may be dry wells that allow surficial contaminants to percolate into the subsurface. These drains do not trigger a regulatory reporting requirement, but soil the vicinity of these tanks may contain contaminants at higher concentrations than typical historic fill material or soil, and may be associated with a cost premium for disposal.
- The Subject Property was assigned an E-designation (E-415) for Air Quality – HVAC (fuel limited to natural gas) and Window Wall Attenuation and Alternate Ventilation. The E-designation requires the owner to satisfy New York City (NYC) Office of Environmental Remediation (OER) protocols prior to and during redevelopment and new building occupancy which may add additional costs for investigation and remediation compared to other properties.

De Minimis Condition

Langan observed localized black staining on concrete pavement throughout Subject Property during the site reconnaissance. Concrete in these areas appeared to be in fair condition.

1.0 INTRODUCTION

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology D.P.C. (Langan) was retained by Beach 21st Limited Partnership (the "User") to prepare a Phase I Environmental Site Assessment (ESA) for the Beach 21st Street Development in the Far Rockaway neighborhood of Queens, New York ("Subject Property"). The 42,500-square-foot (±0.98 acre) Subject Property is identified as Queens Borough Tax Block 15705, Lot 69 and a portion of Lot 59.

This Phase I ESA was performed in general accordance with ASTM International (ASTM) Standard E1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) and the guidelines set forth in the United States Environmental Protection Agency's (USEPA) All Appropriate Inquiries (AAI) Rule, 40 Code of Federal Regulations (CFR) Part 312.

1.1. Purpose

The purpose of this Phase I ESA is to accomplish the following:

> (1) Identify Recognized Environmental Conditions (RECs) in connection with the Subject Property, as defined in ASTM E1527-13, which states: The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (a) due to any release to the environment; (b) under conditions indicative of a release to the environment; or (c) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.
>
> (2) Satisfy the criteria of USEPA AAI Rule.

1.2. Scope of the ESA

This Phase I ESA was conducted using a standard of good commercial and customary practice that is consistent with the ASTM E1527-13. Any significant scope-of-work additions, deletions, or deviations to ASTM E1527-13 are noted in Section 8.0 of this report. In general, the scope of this assessment consisted of obtaining information from the User, reviewing reasonably ascertainable information and environmental data relating to the Subject Property, reviewing maps and records maintained by federal, state, and local regulatory agencies, interviewing

persons knowledgeable about the Subject Property, and conducting a site inspection. The specific scope of this assessment included the following:

1. A site reconnaissance to characterize conditions and assess the Subject Property's location with respect to adjoining and surrounding property uses and natural surface features. The reconnaissance included the surrounding roads and observations of surrounding properties from public rights-of-way to identify obvious potential environmental conditions on neighboring properties. The site reconnaissance was conducted in a systematic manner focusing on the spatial extent of the Subject Property and then progressing to adjoining and surrounding properties. Photographs taken as part of the site reconnaissance are provided in Appendix A.
2. A review of the responses to the User/Client Questionnaire. The completed questionnaire is provided in Appendix B.
3. A review of available previous environmental reports completed for the Subject Property. Copies of the reports are included in Appendix C.
4. A review of environmental databases maintained by the USEPA, state, and local agencies within the approximate minimum search distance. The environmental database report was provided by Environmental Data Resources, Inc. (EDR), and is included in Appendix D.
5. Filing of Freedom of Information Act (FOIA) requests with federal, state, and local agencies. Copies of the FOIA requests and responses are included in Appendix E.
6. A review of NYC Department of Buildings (DOB) records and a Planning Commission Zoning Map. Available DOB records and the Zoning Map are included in Appendices F and G, respectively.
7. A review of physical characteristics of the Subject Property through a review of referenced sources for topographic, geologic, soils and hydrologic data.
8. A review and interpretation of aerial photographs, Sanborn Fire Insurance Maps (Sanborn Maps), historical topographic maps, and city directories to identify previous activities on and in the vicinity of the Subject Property. Copies are included in Appendices H, I, J, and K respectively.
9. A review of environmental lien searches for the lots at the Subject Property. A copy of the environmental lien search report is included as Appendix L.
10. A review of published radon occurrence maps to evaluate whether the Subject Property is located in an area with a propensity for elevated radon levels.

1.3. Assumptions, Limitations, and Exceptions

This Phase I ESA was prepared for Beach 21st Limited Partnership for the Subject Property on Beach 21st Street (as defined in Section 1.0) in the Far Rockaway neighborhood of Queens, New York. The report is intended to be used in its entirety. Excerpts taken from this report are not necessarily representative of the assessment findings. Langan cannot assume responsibility for use of this report for any property other than the Subject Property addressed herein, or by any other third party without a written authorization from Langan.

Langan's scope of services, which is described in Section 1.2, was limited to that agreed to with the User and no other services beyond those explicitly stated are implied. The services performed and agreed upon for this effort comports to those prescribed in the ASTM E1527-13. Intrusive sampling (e.g. soil borings and groundwater sampling) was not performed as part of this Phase I ESA.

This Phase I ESA was not intended to be a definitive investigation of possible environmental impacts at the Subject Property. The purpose of this investigation was limited to determining if there is reason to suspect the possibility of RECs. It should be understood that even the most comprehensive Phase I ESA may fail to detect environmental liabilities at a particular Subject Property. Therefore, Langan cannot "insure" or "certify" that the Subject Property is free of environmental impacts. No expressed or implied representation or warranty is included or intended in this report, except that our services were performed, within the limits prescribed by our client, with the customary standard of care exercised by professionals performing similar services under similar circumstances within the same jurisdiction.

The conclusions, opinions, and recommendations provided in this report are based solely on the specific activities as required for the performance of ASTM E1527-13 and are intended exclusively for the purpose stated herein, at the specified Subject Property, as it existed at the time of our site visit.

2.0 SITE DESCRIPTION

2.1 Location and Description

The rectangular-shaped, 42,500-square-foot (±0.96 acre) Subject Property is located on Beach 21st Street in Far Rockaway, Queens, New York, and is identified on the Queens Borough Tax Map as Block 15705, Lot 69 and portion of Lot 59. The Subject Property is located mid-block, on the city block bound by Beach 21st Street to the east, Cornaga Avenue to the south, Beach 22nd Street to the west, and Mott Avenue to the north. Current use of the Subject Property includes a bus station and parking lot with no permanent structures. A site location map is included as Figure 1.

The Subject Property is located in an urban area characterized by commercial, industrial, and residential uses. According to the United States Geological Survey (USGS) Far Rockaway 7.5-minute Series Topographic Quadrangle Map, the Subject Property is at an elevation of about 20 feet above mean sea level (NAVD88). Site reconnaissance photographs are provided in Appendix A. Surrounding property usage is summarized in the following table:

Direction	Adjoining Properties			Surrounding Properties
	Block No.	Lot No.	Description	
North	15705	59	Portion of Lot 59 not included in Subject Property that includes the remainder of the bus station and parking facility	Auto service facility followed by Mott Avenue
East	15704	26, 30, 36, 53, 57, 60, 66	Mixed use commercial and residential lots	Beach 21st Street followed by commercial businesses
South	15705	81	Land under development	Parking and auto repair shop followed by Cornaga Avenue
West	15705	30 through 37, 140	1 & 2 family residential buildings and multi-family residential building	Mixed use residential and commercial lots, vacant land, Beach 22nd Street and MTA Mott Avenue – Far Rockaway Subway station

2.2 Description of Subject Property Improvements

Improvements at the Subject Property are summarized in the following table:

SUBJECT PROPERTY DESCRIPTION	
Size of the Subject Property	42,500 square feet (about 0.98 acres)
Buildings/Spaces/Structures	No structures except temporary bus shelter. Most of the property is paved with concrete and asphalt.
Surface Water	None
Potable Water Source	N/A
Sanitary and Storm Sewer Utilities	City of New York
Electrical Utilities	Consolidated Edison Company of New York, Inc. (for street lights)
Construction Completion Date	N/A
General Construction Type	N/A
Heating/Cooling System Type	N/A
Emergency Power	N/A

2.3 Title Records

Langan researched ownership records through the New York City Department of Finance (NYCDOF), Office of the City Register Automated City Register Information System (ACRIS) website at http://a836-acris.nyc.gov/CP/; however, deed information was not available. A lien search provided by EDR stated that the Subject Property is owned by the New York City Department of Transportation. Langan's review of ownership records did not identify RECs.

3.0 USER PROVIDED INFORMATION

3.1 User Questionnaire

Per ASTM E1527-13, a questionnaire was provided to the User/Owner to inquire about specialized information related to the Subject Property. The user questionnaire was completed by Jesse Batus, of Beach 21st Limited Partnership, and returned to Langan on September 26, 2018. Mr. Batus indicated that he was aware of obvious indications of documented or potential releases at the Subject Property, as documented in a previous Phase I ESA. A copy of the completed questionnaire is included in Appendix B.

3.2 Previous Environmental Reports

June 2016 Phase I Environmental Site Assessment (ESA) for Far Rockaway Municipal Parking Field - Queens, New York, prepared by AKRF, Inc.

AKRF completed a Phase I ESA of the Subject Property and adjacent portions of Lot 59 in 2016. The Phase I ESA identified the following RECs:

- Two underground storage tanks (UST), including one in the western part of the Subject Property on 1912 map. The second UST was shown in the portion of Lot 59 north of the Subject Property from 1933 to 1951. The status of the tanks is unknown and additional tanks may have been associated with other historical structures.
- Historical Property uses included a coal and wood yard; a furniture factory; auto repair; paint storage; a tin shop; an upholsterer; a lumber yard; a screen manufacturer; a publishing company; a roofing works; and a sheet metal works.
- A Rail spur was historically located along the west part of the Subject Property and may have been associated with spills and the use of creosote and/or other oils.
- Historical and current uses of surrounding properties included nearby rail tracks; auto repair shops; filling stations; factories; paint and oil shops; printers; a sign painter; dry cleaners; registered Petroleum Bulk Storage (PBS) facilities; and a vacant, and an unpaved lot with an abandoned 55-gallon drum.
- Potential dry wells as a survey provided by NYC Department of Transportation indicated some on-site storm drains may not be connected to the municipal sewer system and may discharge into the subsurface.

The Phase I ESA also identified Spill No. 0408292 (October 2004), regarding two 55-gallon drums that were abandoned on the property, as a de minimis condition. It is not clear if this incident happened within the limits of the Subject Property or the larger city-owned area. The spill was closed in December 2004.

A subsurface investigation was recommended prior to redevelopment as well as proper closure of any encountered USTs in accordance with applicable regulations. AKRF also stated that without testing of the on-site fluorescent lighting fixtures, they should be disposed of in accordance with applicable regulations assuming they contain PCBs and/or mercury. Suspect demolition debris, possibly containing ACM, LBP or PCB containing material, should be handled and disposed of in accordance with applicable regulations.

The prior Phase I ESA is included in Appendix C.

4.0 RECORDS REVIEW

4.1 Environmental Records

Regulatory database information was provided by EDR and is included in Appendix D. The EDR report is a listing of sites identified on select federal and state standard source environmental databases within the approximate search radius specified by ASTM E1527-13. Langan reviewed each environmental database on a record-by-record basis to determine if certain sites identified in the report are suspected to represent a potential impact to the Subject Property. Langan also reviewed "Orphan Sites" listed within the report. Orphan Sites are those sites that could not be mapped due to inadequate address information. Five Orphan Sites were identified, and three were determined to be located outside of the ASTM search radii. One Orphan Site, listed as "Far Rockaway MGP," was determined to be within the ASTM search radii and is discussed below in the appropriate sub-sections. All distances are measured from the perimeter of the Subject Property unless noted otherwise.

The following table lists the number of sites by database within the prescribed search radius appearing in the EDR Report.

DATABASE RECORD SUMMARY			
Database Reviewed (Date of government version)	**Minimum Search Area**	**Subject Property listed**	**Number of Sites Within Minimum Search Area**
USEPA DATABASES			
National Priorities List (NPL) (05/13/2018)	1 Mile Radius	No	0
Delisted NPL (05/13/2018)	1 Mile Radius	No	0
Superfund Enterprise Management System (SEMS, formerly CERCLIS) and SEMS-Archive (formerly known as CERCLIS-NFRAP) (05/18/2018)	1/2 Mile Radius	No	0
Resource Conservation and Recovery Act (RCRA) Corrective Reports (CORRACTS) (03/01/2018)	1 Mile Radius	No	0
RCRA Treatment, Storage, and Disposal Facilities (TSDF) (03/01/2018)	1/2 Mile Radius	No	0

DATABASE RECORD SUMMARY			
Database Reviewed (Date of government version)	**Minimum Search Area**	**Subject Property listed**	**Number of Sites Within Minimum Search Area**
USEPA DATABASES (Continued)			
RCRA Generators (Large Quantity Generator [LQG], Small Quantity Generator [SQG], Conditionally Exempt Small Quantity Generator [CESQG], Non-Generators [NonGen]) (03/01/2018)	Subject Property and Adjoining	No	0
Facility Index System (FINDS) (02/21/2018)	Subject Property	Yes	N/A
Environmental Response Notification System (ERNS) (03/19/2018)	Subject Property	No	N/A
Federal Engineering Controls (US ENG CONTROLS) Sites Lists (02/13/2018)	Subject Property	No	N/A
Federal Institutional Controls (US INST CONTROLS) Sites Lists (02/13/2018)	Subject Property	No	N/A
US Brownfields (03/19/2018)	1/2 Mile Radius	No	0
NYSDEC DATABASES			
Inactive Hazardous Waste Disposal Site (NY SHWS) (08/09/2018)	1 Mile Radius	No	1
Hazardous Substance Waste Disposal Site Inventory (NY HSWDS) (01/01/2003)	1/2 Mile Radius	No	0
Solid Waste or Landfill Facilities (NY SWF/LF) (12/08/2017)	1/2 Mile Radius	No	4
Registered Recycling Facility (NY SWRCY) (12/08/2018)	1/2 Mile Radius	No	1
New York Leaking Storage Tank Incident Reports (NY LTANKS) (05/14/2018)	1/2 Mile Radius	No	21
SPILLS Information Database (NY SPILLS) (05/14/2018)	1/8 Mile Radius	Yes	5
Voluntary Cleanup Program (NY VCP) (03/26/2018)	1/2 Mile Radius	No	1
NY Brownfields (08/09/2018)	1/2 Mile Radius	No	1
New York Engineering Controls Sites List (NY ENG CONTROLS) (05/14/2018)	Subject Property	No	0

DATABASE RECORD SUMMARY			
Database Reviewed (Date of government version)	**Minimum Search Area**	**Subject Property listed**	**Number of Sites Within Minimum Search Area**
NYSDEC DATABASES (Continued)			
New York Institutional Controls Sites List (NY INST CONTROLS) (05/14/2018)	Subject Property	No	0
Chemical Bulk Storage (CBS) Underground Storage Tank (UST) and Aboveground Storage Tank (AST) (06/25/2018)	Subject Property and Adjoining	No	0
Major Oil Storage Facilities (NY MOSF) UST and AST Databases (06/25/2018)	Subject Property and Adjoining	No	0
Registered Drycleaners (NY DRYCLEANERS) (03/07/2018)	1/4 Mile Radius	No	5
Petroleum Bulk Storage Facilities (PBS) UST and AST Databases (06/25/2018)	Subject Property and Adjoining	No	2
EDR (PROPRIETARY) DATABASES			
EDR Former Manufactured Gas Plant (MGP) Sites (N/A)	1 Mile Radius	No	2
EDR US Historical Auto Stations (N/A)	¼ Mile Radius	No	1
EDR US Historical Cleaners (N/A)	¼ Mile Radius	No	6

N/A: Not Applicable; databases with a "N/A" Minimum Search Radius are databases reviewed as part of the Phase I ESA but not required as per ASTM E1527-13.

A summary of the Subject Property database listing and listings for other sites identified in one or more of the reviewed databases within the prescribed search area is presented below.

4.1.1 Federal Agency Database Findings

The Subject Property and/or sites within their respective minimum search distances as specified by ASTM E1527-13 were not listed in the following federal agency databases: Proposed NPL, NPL, Delisted NPL, SEMS, SEMS Archive, RCRA CORRACTS, RCRA-TSDF, FINDS, ERNS, RCRA Generators, US ENG CONTROLS, US INST CONTROLS, and US BROWNFIELDS.

4.1.2 State Agency Database Findings

The Subject Property and/or sites within their respective minimum search distances as specified by ASTM E1527-13 were not listed in the following state agency databases: NY ENG CONTROL, NY INST CONTROL, NY HSWDS, NY CBS, and NY MOSF.

SHWS Database

The SHWS database is a comprehensive listing of sites that are the state's equivalent to SEMS. These consist of priority sites planned for cleanup using state funds (state equivalent of Superfund) and or potentially responsible parties. The Subject Property was not listed in the SHWS database. One SHWS site was listed, but is located more than 3,800 feet from the Subject Property in a hydraulically cross-gradient direction, and is not considered a REC.

SWF/LF

The SWF/LF database is a comprehensive listing of State permitted/recorded solid waste facilities. The EDR report did not identify the Subject Property in the SWF/LF database. Four surrounding sites were identified within the minimum search radius; however, they are located more than 600 feet from the Subject Property at a cross-gradient direction or more than 1,000 feet from the Subject Property at cross- to down gradient locations. Based on distance from the site and presumed hydraulic gradient, the listed SWF/LF sites do not represent RECs.

LTANKS Database

The LTANKS database contains an inventory of reported leaking storage tank incidents, including leaking USTs and ASTs. The minimum search radius for the LTANKS database includes the Subject Property and any sites within a 1/2-mile radius. The Subject Property was not listed in the LTANKS database; however, 21 sites were listed within the search radius. The listed incidents were primarily caused by tank test failures, tank failures, and tank overfills. Spill numbers associated with 20 of the 21 sites have been granted closed status by the NYSDEC and are not considered RECs. The one open listing is located about 750 feet south of the Subject Property and was reported after a tank test failure in 2017. The tank was ordered to be drained and retested and no impacts were reported. Due to the nature of this LTANK listing and distance, it is not expected to have impacted the Subject Property.

Spills Database

The NY Spills database is an inventory of sites where spills have been identified and reported to the NYSDEC. The search radius for the Spills database includes the Subject Property and any sites within a 1/8-mile radius. Five incidents listed in the Spills database were identified at sites within the minimum search radius. Although the EDR report did not indicate a SPILL listing on-site, one spill (No. 0408292) describes two abandoned 55-gallon drums in the municipal lot across from 1044 Beach 21st Street, and is reasonably assumed to be associated with the Subject Property or the portion of Lot 59 to the north. The drums were emptied and removed, and had no report of damage or leaking; therefore, this spill case does not represent a REC. The remaining four spill sites listed have been granted closed status by the NYSDEC and are not considered RECs.

NY PBS TANKS, UST and AST Database

The PBS TANKS UST and AST database contains records of registered USTs and/or ASTs. A registered tank, UST and/or AST does not constitute a REC, in and of itself. However, properties listed on the TANKS, UST and/or AST lists with a reported leak, spill, or release could constitute a REC with respect to the Subject Property. As per ASTM E1527-13, the minimum search distance required for USTs and ASTs is the Subject Property and adjoining properties. The Subject Property was not listed in the PBS database. Two adjoining properties were listed in the PBS UST database and are described below:

Site Name: NOBO Corporation
Site Address: 10-74 Beach 22nd Street
Site Location: Northwest-adjoining property (hydraulically down-gradient)
Description: PBS ID No. 2-602577 corresponds to an active (non-regulated use) 275-gallon steel No. 2 fuel oil AST and a temporarily out of service 275-gallon steel waste oil AST. These tanks are above ground, were installed in 1995, are not associated with LTANKs or spills, and are not considered a REC.

Site Name: Owen Auto Service
Site Address: 1017 Beach 21st Street
Site Location: Southern adjoining property (hydraulically up-gradient)
Description: PBS ID No. 2-604688 corresponds to 5 closed and removed 550-gallon steel gasoline USTs. The tanks were removed in 2000, but an install date was not reported. No LTANK or SPILLS listings are recorded in association with this facility, but based on the age of the tanks, proximity to the Subject Property, and up-gradient location, potential groundwater and soil vapor impacts related to unreported leaks from these tanks are considered a REC.

VCP Databases

The Voluntary Cleanup Program (VCP) uses private funds to remediate contaminated sites to levels allowing for the sites' productive use. The program covers virtually any kind of site and contamination. The Subject Property is not listed in the VCP database; however, one VCP site was identified within a ½-mile radius of the Subject Property. The site is listed in the EDR as an orphan site and is named "Far Rockaway MGP." Further details could not be located about this site on any public sources. The site is located more than 2,500 feet from the Subject Property to the north, northeast (down-gradient) and not considered a REC.

Brownfield Sites

Brownfield sites are properties at which redevelopment or re-use may be complicated by the presence or potential presence of hazardous substances, pollutants, or contamination. The Subject Property was not listed as a NY Brownfield site; however, one NY Brownfield site was identified within a ½-mile radius of the Subject Property. The site is listed in the EDR as an orphan site and is named "Far Rockaway MGP." As discussed above, this site is not considered a REC.

Registered and Historical Drycleaners (DRYCLEANERS)

The DRYCLEANERS database is a listing of registered dry cleaning facilities. Dry cleaning facilities are associated with the use of tetrachloroethene (PCE), a solvent that has the potential to infiltrate groundwater and can readily migrate to surrounding properties. The Subject Property was not listed in the DRYCLEANERS database; however, five DRYCLEANERS were identified within 1/4 mile of the Subject Property. Six historical DRYCLEANERS sites were identified within 1/8 mile of the Subject Property

The following cleaner/historic cleaners are considered RECs as inadvertent releases of solvents could have impacted groundwater and or soil vapor at the Subject Property:

- Nassau Beach Cleaners at 2105 Cornaga Ave (about 430 feet south/up- to cross-gradient)
- Budget Dry Cleaners at 2122 Cornaga Avenue (about 350 feet south/up- to cross-gradient)

Other listed cleaners are either listed as drop shops (do not dry clean on site), are located 500 or more feet at down-gradient locations, or appear to be misclassified as a historical cleaner; therefore, are not considered RECs.

4.1.3 Other Database Findings

Manufactured Gas Plant Sites

The MGP sites database is a proprietary database that includes records of historical manufactured coal gas plants compiled by EDR. The Subject Property was not listed in the MGP database. Two sites were identified within the search criteria. The sites, Far Rockaway MGP and Inwood Holder, are located over 2,500 feet north/northeast (cross-gradient) from the Subject Property. No further information was available for either listing. Based on distance and relative gradient, these sites are not considered RECs.

Historical Auto

The Historical Auto database is a proprietary database that lists potential gas station/filling station/service station sites based on review of national collections of business directories that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The Subject Property was not listed in the EDR Historical Auto database. One site within the minimum search distance is discussed below:

Site Name: Three Vic Corporation
Date: 1971-2011
Site Address: 1009 Beach 21st Street; about 200 feet south of the Subject Property; hydraulically up-gradient
Description: This former gasoline/service station is associated with RCL Service Center PBS UST ID # 2-604080. As discussed under PBS records, this facility and related petroleum storage represents a REC.

4.1.4 Local Regulatory Agency Findings

FOIA Requests

FOIA requests were submitted on September 6, 2018 to the following federal, state, and local agencies via written correspondence:

- NYC Department of Environmental Protection (DEP)
- NYC Department of Health (DOH)
- FDNY
- New York State Department of Health (NYSDOH)
- NYSDEC

- USEPA, Region 2

Responses have not yet been received. Should pending responses alter the conclusions provided within this report, we will issue the modified conclusions as an addendum. Copies of the FOIA requests are included in Appendix E.

New York City Department of Buildings (DOB)

Langan conducted a records search through the DOB online query system on September 5, 2018. No records were available for Block 15705, Lot 69. The following table summarizes DOB records for Block 15705, Lot 59:

Building Identification Number (BIN)	NYCDOF Classification	Actions	Total Jobs	DOB Violations		Environmental Control Board (ECB) Violations	
				Total	Open	Total	Open
4817352	V8-Vacant Land	4	0	0	0	0	0

No certificates of occupancy were available for either lot at the Subject Property. A copy of the DOB findings is included in Appendix F.

Zoning Department

According to the NYC Planning Commission Zoning Map 31a, the Subject Property is zoned as R6 (Residential) within a Special Purpose District known as the Special Downtown Far Rockaway District and described in the NYC City Planning Commission Zoning Resolution Article 13 Chapter 6 (https://www1.nyc.gov/assets/planning/download/pdf/zoning/zoning-text/art13c06.pdf). This district was created to strengthen the commercial area on vacant and underutilized sites near mass transit and primary corridors. A copy of the zoning map is included in Appendix G.

'E'-Designation Status

The NYC Department of City Planning (DCP) coordinated a program identifying properties for special environmental concerns based on documented historical use, neighborhood noise concerns, and neighborhood air quality issues. These properties are identified as E-Designated sites on zoning maps and in the DOB Building Information System (BIS) database. The DOB is restricted from issuing building permits for the property until the NYC Mayor's Office of Environmental Remediation (OER) has reviewed information prepared by an environmental professional and made a determination to issue a "Notice-of-No-Objection" or a "Notice-to-

Proceed" to the DOB. Prior to OER's creation in 2008, the DEP conducted these reviews. Langan reviewed information available on the planning commission's website and found the Subject Property was listed as an E-Designated for Air Quality – HVAC (fuel limited to natural gas) and Window Wall Attenuation and Alternate Ventilation. The E-designation is a Business Environmental Risk (BER) as it will result in extra costs to prepare and implement a Remedial Action Plan under OER oversight.

4.2 Physical Setting Sources

4.2.1 Topography

According to the USGS Far Rockaway, N.Y.-N.J. 7.5-minute Series Topographic Quadrangle Map, the Subject Property is at an elevation of approximately 20 feet above mean sea level (NAVD88). The topography at the Subject Property was observed to gently slope down to the northwest. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) effective November 16, 1983 and revised September 5, 2007, (Map Number 3604970382F) and the Preliminary FIRM dated January 30, 2015 (Map Number 3604970382G), the Subject Property is located within the area of minimal flood hazard.

4.2.2 Geology

Geological surface features (e.g., rock outcroppings) were not observed at the Subject Property. Based on a review of the Geologic Map of New York Lower Hudson Sheet, by Donald W. Fisher, Yngvar W. Isachsen, and Lawrence V. Rickard, dated 1970 and reprinted in 1995, the Subject Property is underlain by coastal plain deposits of the Monmouth Group, Matawan Group, and Magothy Formation. This formation is generally comprised of silty clay, glauconitic sandy clay, sand, gravel. Based on the USGS Map of Western Part of Long Island, N.Y (showing probable depth of bedrock), bedrock at the Subject Property is estimated to be greater than 300 feet below grade.

4.2.3 Hydrology

Groundwater flow is typically hydraulically influenced, as shallow groundwater tends to originate in areas of topographic highs and flow toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetative cover, and extent of impervious cover. Other factors influencing groundwater include depth to bedrock, the presence of artificial fill, and variability in local geology and groundwater sources or sinks.

Based on the regional topography, groundwater in the area is expected to flow to the west/northwest toward the Motts Basin and Jamaica Bay. Groundwater in Far Rockaway is not used as a potable source. Drinking water throughout New York City is derived from surface reservoirs in the Catskills.

4.3 Historical Use Information

Langan reviewed available historic resources (including aerial photographs, Sanborn and topographic maps, and city directories) dated between 1896 and 2017. Findings from the review are presented below.

4.3.1 Aerial Photographs

Langan reviewed aerial photographs of the Subject Property and surrounding areas for the years 1951, 1954, 1961, 1966, 1975, 1980, 1985, 1994, 2006, 2009, and 2017. Copies of aerial photographs are included in Appendix H.

In the 1951 aerial photograph, the Subject Property and surrounding properties are within a densely developed urban area. The 1951 photo shows multiple multi-story buildings on the Subject Property while the western perimeter remains vacant and apparently used for storage. Between 1954 and 1961, all but one of the buildings were removed from the Subject Property and it was mostly covered by asphalt; the remaining building is located on Lot 69. From 1966 to 1975, the Subject Property is primarily used for parking. Between 1975 and 1980, the on-site building is no longer present, and a bus terminal is built that has no structures but covers the northeastern portion of the property with asphalt.

Surrounding properties were improved with various commercial and industrial buildings since as early as 1951. The neighboring MTA subway station is built between 1954 and 1961. In 2017, the southern adjoining property and northwestern adjoining property appear to be under construction.

4.3.2 Sanborn Fire Insurance Maps

Langan reviewed Sanborn Fire Insurance Maps (Sanborn Maps) for the years 1886, 1890, 1895, 1901, 1912, 1933, 1951, 1981, 1983, 1985 to 1988, 1990 to 1993, 1995, 1996, 1999, and 2001 through 2006. Sanborn Maps constitute a database of prior site uses for real properties located in many cities and towns across the United States. Copies of the maps are included in Appendix I.

Langan's Sanborn Map review revealed that a Long Island Railroad (LIRR) right of way traversed the western portion of the Subject Property from 1886 to 1996. Other Subject Property uses include a coal/lumber yard (1890 to 1933), paint shop/storage (1912 to 1951), manufacturing facilities (1912 to 1951), woodworking (1912 to 1962), carpet cleaning (1912), and a tin shop (1951). The 1912 map reveals a 100-gallon underground gasoline tank on the Subject Property that is not called out on subsequent maps. The aforementioned prior uses of the Subject Property are considered RECs, based on the potential for inadvertent releases of petroleum, solvents, creosote, and/or other hazardous substances that may have impacted soil, groundwater, and/or soil vapor. No documentation of tank removal was obtained, so a historical/potentially abandoned in place UST is a REC based on the potential for undocumented leaks.

Adjoining and surrounding properties generally contained low-rise industrial and residential structures between 1886 and 2007. Potential impacts from the following properties were identified as RECs:

- 1017-1031 Beach 21st Street adjoins the Subject Property to the south (up-gradient) and was occupied by an auto repair facility with gasoline tank/filling station (1951 to 2006);
- 1009 Beach 21st Street is located approximately 180 feet to the south (up- to cross-gradient) of the Subject Property and was occupied by an auto repair facility (1933 to present), with two gasoline tanks shown from 1933 to 1951, and a filling station (1981 to 1988);
- 1063, 1065, and 1067 Beach 21st Street adjoin the Subject Property to the north/down-gradient (portion of Lot 59 not included in Subject Property) and were occupied by an auto repair facility with a gasoline tank (1933 to 1951);
- 46 White Street (currently known as 1060 Beach 21st Street) adjoins the Subject Property to the east (cross- to up-gradient) and was occupied by an auto facility in 1912;
- 2014-2016 Cornaga Avenue/1002-1010 Beach 21st Street is located approximately 210 feet southeast (up- to cross-gradient) of the Subject Property and was occupied by an auto repair facility (1933 to 2006) and filling station with four gasoline tanks (1933 to 1951);
- 1068 Beach 22nd Street adjoins the Subject Property to the northwest (down-gradient) and was occupied by an auto repair facility (1999 to 2006); and
- 2103 Cornaga Avenue is located approximately 390 feet south (up- to cross-gradient) of the Subject Property and was occupied by a dry cleaner (1951 to 1981).

The above uses may have resulted in inadvertent releases of petroleum products, solvents, and/or other hazardous substances that could have migrated and impacted groundwater and/or

soil vapor at the Subject Property. Copies of Sanborn Fire Insurance Maps are included in Appendix I.

4.3.3 Historical USGS Topographic Quadrangles

Langan reviewed historical USGS Topographic Quadrangles obtained from EDR for information regarding past uses of the Subject Property. Quadrangle maps were available for the Subject Property for the years 1897, 1898, 1899, 1900, 1947, 1954, 1966, 1969, 1979 (partial coverage), and 2013. In the 1897, 1898, and 1900 maps, the Subject Property is within a developed urban area and is traversed by a railway along the western perimeter. Historical on-site railroad tracks are considered a REC, based on the potential for impacts from petroleum products, creosote, and hydraulic oil releases. Copies of the topographic maps are provided in Appendix J.

4.3.4 City Directories

The City Directory Abstract obtained from EDR is a review of available business directories, including city, cross-reference, and telephone directories, at approximately five-year intervals for the years spanning 1922 through 2014. A copy of the City Directory Abstract is included in Appendix K.

The Subject Property, identified as 10-37 Beach 21st Street, was listed in the City Directory Abstract with various uses including a lumber corporation (1939 to 1962) and various auto service stations (2000 to 2005). 10-57 Beach 21st Street is listed in the EDR as an adjoining property, although the Sanborn maps reveal that this address corresponds to the Subject Property. A roofing and sheet metal contractor (1950) previously occupied this address. Historical use of the Subject Property for auto repair, sheet metal works, and woodworking is a REC as inadvertent releases of petroleum products or other hazardous substances may have impacted soil, groundwater, and/or soil vapor.

Adjoining and surrounding properties were listed in the City Directory Abstract under multiple residential and commercial listings. The following RECs were identified:

- 10-09 Beach 21st Street is located approximately 180 feet to the south (up- to cross-gradient) of the Subject Property and was listed as a gas station (1934), service station (1962 to 1991) and auto works (2005 to 2010);
- 10-11 Beach 21st Street is located approximately 120 feet to the south (up- to cross-gradient) of the Subject Property and was listed as a service station (1939) and battery service (1934);

- 10-17 Beach 21st Street is located approximately 90 feet to the south (up- to cross-gradient) of the Subject Property and was listed as a service station (1962 to 2005) and auto repair (2000 to 2005); and
- 10-32 and 10-34 Beach 21st Street are located approximately 45 feet to the southeast (up-gradient) of the Subject Property and was listed as a manufacturing company (1950 to 1970) and auto service (2005).

The above listed historical uses of adjoining and/or surrounding properties are considered a REC due to the potential for undocumented releases of petroleum, solvents, and/or other hazardous materials that may have impacted groundwater and/or soil vapor at the Subject Property.

4.3.5 Title Records, Environmental Liens, and Use Limitations

Reasonably ascertainable recorded land title records and lien records that are filed under federal, tribal, state, or local law should be reviewed to identify environmental liens or AULs, if any, that are currently recorded against the property. Any environmental liens or AULs must be reported to the Environmental Professional conducting the ESA per ASTM E1527-13.

An environmental lien and AUL search was provided by EDR to confirm whether environmental liens or AULs (engineering or institutional controls) existed for the property. Environmental liens and AULs were not identified for the Subject Property. Deed records identified during the search list the current owner of the Subject Property as NYC Transit. A copy of the report is included in Appendix L.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The site reconnaissance was conducted in a systematic manner focusing on the spatial extent of the Subject Property and progressing to the adjacent and surrounding properties. The assessment of the adjacent and surrounding properties was limited to identifying, if possible, any indications of past or current use that may involve the use, storage, disposal, or generation of hazardous substances or petroleum products, noting the general type of current use, the general topography of the surrounding area, and providing a general description of adjoining or adjacent structures.

5.1.1 Date and Time of Inspections

The site reconnaissance was performed on September 5, 2018 by Elizabeth Burgess of Langan. The weather at the time of inspection was clear and about 80 degrees Fahrenheit.

5.1.2 General Site Setting and Reconnaissance Observations

The Subject Property is rectangular, includes Lot 69 and part of Lot 59, and has about 304 feet of frontage on Beach 21st Street. An asphalt-paved parking lot (about 50 spaces) was observed on the western and southern portions of the Subject Property, and a concrete paved (outdoor) bus stop is in the northeast quadrant. Parked vehicles limited ground visibility at the time of the site reconnaissance.

All surfaces except for an approximately 2,000 square foot vegetated area in the southwest corner are covered with pavement. Concrete and asphalt surfaces were in fair condition with some localized cracking.

There are no buildings present, but a temporary bus shelter is located in the northeast quadrant. Seven light poles and six storm drains were observed throughout the paved areas. Fencing is located along the southern and western perimeters, otherwise the site has open access.

Pits, Ponds, Lagoons

No pits, ponds or lagoons were observed.

Pools of Liquid

No pools of liquid were observed.

Drains, Wells, and Cisterns

Six storm drains were observed. Three of the drains are located in the asphalt parking lot along the western end of the property and had visible effluent pipes in them that appeared to connect to the adjacent sewer line. The remaining three drains are within in the concrete paved bus driveway did not have visible effluent pipes and may be dry wells that would allow surficial contaminants to travel into the subsurface after storm events.

Polychlorinated Biphenyl (PCB) Transformers and/or Hydraulic Equipment

Transformers and hydraulic equipment were not observed.

Storage Containers and Drums

No storage containers or drums were observed.

Waste Generation, Storage, and Disposal

One public trash container is located next to the bus shelter and is maintained by the city.

Air Emissions or Wastewater Discharges

Air emissions or wastewater discharges were not observed.

Sumps

Sumps were not observed.

USTs or ASTs

ASTs or evidence of USTs were not observed.

Monitoring Wells or Remedial Activities

Monitoring wells or other evidence of remedial activities (e.g., patched borings) were not observed at the Subject Property.

Stained or Discolored Surfaces (Soil, Asphalt, Concrete, etc.)

Localized black staining was observed on concrete pavement throughout Subject Property; however, impacts appeared minimum, concrete in these areas appeared to be in fair condition, so impacts to the sub-surface are unlikely. The observed staining is considered de minimis.

Leachate or Seeps

Leachate and seeps were not observed.

Adjoining and Surrounding Property Uses

The bus station and parking lot extend for approximately 80 feet north beyond the Subject Property boundary. The Subject Property is adjoined to the east by Beach 21st Street followed by commercial buildings, to the south by residential construction in progress, and to the west by multiple single and multi-family residential units followed by Beach 22nd Street. Beyond adjoining properties, the surrounding area is comprised of a mix of commercial and residential properties and a subway station with aboveground tracks.

A fuel oil fill port was observed in the sidewalk of Beach 21st Street, outside the delivery entrance for 10-57 Beach 20th Street (an eastern adjoining property). Two monitoring wells were observed south of the Subject Property in the sidewalk outside of DMV Autoworks on Beach 21st Street.

Site Reconnaissance Conclusions

- Black staining on concrete is considered a de minimis condition.
- Three on-site storm drains may be dry wells that allow surficial contaminants to percolate into the subsurface. These drains do not trigger a regulatory reporting requirement, but soil the vicinity of these drains may contain contaminants at higher concentrations than typical historic fill material or soil, and may be associated with a cost premium for disposal. They are considered a BER.
- The observed monitoring wells north and south of the Subject Property are indicative of environmental investigation. Contaminants investigated on these neighboring sites, especially to the south, may have migrated and impacted groundwater and/or soil vapor at the Subject Property; therefore, they represent a REC.

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6.0 INTERVIEWS

6.1 Subject Property Owner

The Subject Property Owner was not available for interview as part of this Phase I ESA.

6.2 Owners/Tenants of Adjacent Properties

Owners/tenants of adjacent properties were not available for interview as part of this Phase I ESA.

7.0 ADDITIONAL SERVICES

7.1 Radon

Radon is a colorless, odorless radioactive gas that results from the natural breakdown of uranium minerals in soil, rock, and water and subsequently, enters the atmosphere. It can concentrate in buildings by entering through cracks and/or other penetrations of a building foundation. Some areas are more likely to have elevated concentrations of radon than others, which is reflective of subsurface lithological conditions.

The USEPA's "Map of Radon Zones for New York State" indicates that the Subject Property is located in a Zone 3 radon risk area, which is associated with a low radon risk potential. Zone 3 risk areas are those where the predicted average indoor screening level is less than 2.0 picocuries per liter (pCi/L). The NYSDOH maintains a database of radon test results on a local and county level. According to the database (updated October 30, 2017), 545 and 113 radon tests were conducted in the cellar and first floors of homes, respectively, in Queens County. The average radon levels in cellars and first floors were 1.24 pCi/L and 0.61 pCi/L, respectively. Based on available data, elevated radon concentrations at the Subject Property are not expected.

7.2 Asbestos-Containing Material, Lead-Based Paint, and PCBs

Buildings are not present at the Subject Property.

8.0 DEVIATIONS AND DATA GAPS

8.1 Deviations

Langan has performed a Phase I ESA of the Subject Property using a standard of good commercial and customary practice that is consistent with the ASTM E1527-13 and the USEPA AAI Rule. Significant deviations were not made to the above referenced standards.

8.2 Data Gaps

According to ASTM E1527-13, Section 8.3.2.3, "historical research is complete when either: (1) the objectives in 8.3.1 through 8.3.2.2 are achieved; or (2) data failure is encountered. Data failure occurs when all standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met. If data failure is encountered, the report shall document the failure and, if any of the standard historical sources were excluded, give the reasons for the exclusion." In order to address data gaps, additional sources of information may be consulted.

This Phase I ESA conforms to ASTM E1527-13 with the following deviations noted:

- All contacted government agencies have not yet responded to record review inquiries.
- Parked vehicles at the time of the site reconnaissance limited ground visibility.

It is the opinion of the reviewing Environmental Professional that the above deficiencies will not detrimentally affect the identification of potential RECs. Sufficient information has been provided from other data sources to render conclusions regarding the presence of RECs at the Subject Property. As such, this data gaps are not expected to impact the overall conclusions of the Phase I ESA. Should additional information provided at a later date alter the conclusions of this Phase I ESA, an addendum will be issued to this report.

9.0 CONCLUSIONS, FINDINGS, AND OPINIONS

This Phase I ESA was conducted in accordance with ASTM E1527-13 and the USEPA AAI Rule. for the purpose of identifying RECs, historical RECs (HRECs), controlled RECs (CRECs), and BERs. The Subject Property had no HRECs or CRECs and the others are summarized below.

Recognized Environmental Conditions

The Phase I ESA identified the following RECs:

REC 1 – Historical Use of the Subject Property

Historical uses of the Subject Property include:

- LIRR railroad tracks (1886 to 1996)
- Coal/lumber yard (1890 to 1933)
- Manufacturing facilities (1912 to 1951)
- Woodworking (1912 to 1962)
- Carpet cleaning (1912)
- A tin shop (1951)
- Painting facilities (1912 to 1951)

Inadvertent releases of petroleum products, solvents, or other hazardous substances related to these former site uses may have impacted soil, groundwater, and soil vapor.

REC 2 – Historical UST at the Subject Property

The 1912 Sanborn Map shows an UST on the Subject Property. Additional records related to the tank were not available; therefore, it is possible that the tank is still in place. Potential undocumented petroleum releases may have adversely impacted soil, groundwater, and/or soil vapor.

REC 3 – Current and Historical Use of Adjoining and Surrounding Properties

Current and historical use of adjoining and surrounding up- and cross-gradient properties included:

- gasoline filling stations, including one on southern adjoining property with registered petroleum bulk storage tanks (1933 and 2006)
- dry cleaners (1951 to 1981)
- auto repair facilities (1933-present)
- a manufacturing company (1950 to 1970)

Inadvertent releases of petroleum products, solvents, and/or or other hazardous substances related to these uses may have migrated and impacted groundwater and/or soil vapor at the Subject Property. Langan observed monitoring wells south of the Subject Property that are indicative of previous environmental investigation. Contaminants investigated on these neighboring sites may have migrated and impacted groundwater and/or soil vapor at the Subject Property.

Business Environmental Risk

A BER is defined by ASTM 1527-13 as a risk that can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. The following BERs were identified:

- Geotechnical evaluations completed nearby indicate that the Subject Property is likely underlain by a layer of historic fill material. Historic fill material can include brick, concrete, cinders, coal, slag, and ash and may contain several types of contamination at concentrations above applicable regulatory levels, including SVOCs, pesticides, and metals. The presence of historic fill would not trigger a regulatory reporting obligation, but may result in premium costs for handling and disposal during redevelopment.
- Three on-site storm drains were not observed to have obvious effluent pipes, suggesting they may be dry wells that allow surficial contaminants to percolate into the subsurface. These drains do not trigger a regulatory reporting requirement, but soil the vicinity of these tanks may contain contaminants at higher concentrations than typical historic fill material or soil, and may be associated with a cost premium for disposal.
- The Subject Property was assigned an E-designation (E-415) for Air Quality – HVAC (fuel limited to natural gas) and Window Wall Attenuation and Alternate Ventilation. The E-designation requires the owner to satisfy NYC OER protocols prior to and during redevelopment and new building occupancy which may add additional costs for investigation and remediation compared to other properties.

De Minimis Condition

Langan observed localized black staining on concrete pavement throughout Subject Property during the site reconnaissance. Concrete in these areas appeared to be in fair condition.

10.0 REFERENCES

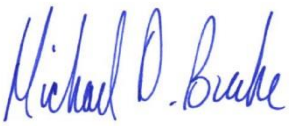
The following references were reviewed as part of this Phase I ESA:

1. Environmental Data Resources, Inc., Inquiry Number: 5411284.8, August 31, 2018. Aerial Photo Decade Package.
2. Environmental Data Resources, Inc., Inquiry Number: 5411284.5, August 31, 2018. City Directory Abstract.
3. Environmental Data Resources, Inc., Inquiry Number: 5411284.4, August 31, 2018. Historical Topographic Map Report.
4. Environmental Data Resources, Inc., Inquiry Number: 5411284.2s, August 31, 2018. Radius Map with GeoCheck.
5. Environmental Data Resources, Inc., Inquiry Number: 5411284.3, August 31, 2018. Sanborn Map Report.
6. Environmental Data Resources, Inc. Inquiry Number 5145309.7, September 5, 2018. EDR Environmental Lien and Activity and Use Limitations Search.
7. Federal Emergency Management Agency Flood Insurance Rate Map, (Map Number 360497, Panel 382, Suffix F), effective November 16, 1983 and revised September 5, 2007, and Preliminary Flood Insurance Rate Map, (Map Number 360497, Panel 382, Suffix G), dated January 30, 2015.
8. New York City Department of Buildings, Building Information System, http://www.nyc.gov/html/dob/html/bis/bis.shtml, reviewed December 28, 2017.
9. New York City Planning Commission. September 5, 2018. Zoning Map 31a.
10. New York City Department of Finance, Office of the City Register, Automated City Register Information System (ACRIS) website, http://a836-acris.nyc.gov/CP/, reviewed September 5, 2018.
11. NYC Oasis Maps: http://www.oasisnyc.com/map.aspx, reviewed September 5, 2018.
12. US Fish and Wildlife Service National Wetlands Inventory (https://www.fws.gov/wetlands/index.html), reviewed September 6, 2018.
13. Phase I ESA (for Lots 59 and 69), prepared by AKRF, dated June 2016

11.0 STATEMENT OF QUALIFICATIONS AND SIGNATURES

Langan declares that, to the best of its professional knowledge and belief, the personnel who performed this Phase I ESA meet the definition of Environmental Professional as defined in Subsection 312 10 of 40 CFR 312 and that they have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. They have developed and performed the AAIs in conformance with the standards and practices set forth in 40 CFR Part 312. Resumes outlining the qualifications of the Environmental Professionals who performed this Phase I ESA are included in Appendix M.

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



Michael Burke, CHMM, LEED^{AP}
Principal/Vice President

APPENDIX B

GEOPHYSICAL ENGINEERING SURVEY REPORT

10-73 Beach 21st Street,
Far Rockaway, New York 11691

NOVA PROJECT NUMBER:

18-1079

DATED:

December 21, 2018

PREPARED FOR:

Langan

21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

PREPARED BY:

NOVA
GEOPHYSICAL
ENGINEERING
Subsurface Mapping Solutions

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

NOVA GEOPHYSICAL SERVICES

SUBSURFACE MAPPING SOLUTIONS
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Ph. 347-556-7787 Fax. 718-261-1527
www.nova-gsi.com

December 21, 2018

Jennifer Armstrong
Senior Project Manager
Langan
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001
P: 212.479.5537 | E: jarmstrong@langan.com

Re: Geophysical Engineering Survey (GES) Report
10-73 Beach 21st Street,
Far Rockaway, New York 11691

Dear Ms. Armstrong,

Nova Geophysical Services (NOVA) is pleased to provide the findings of the geophysical engineering survey (GES) at the above referenced project site: 10-73 Beach 21st Street, Far Rockaway, New York 11691 (the "Site").

INTRODUCTION TO GEOPHYSICAL ENGINEERING SURVEY (GES)

NOVA performed a geophysical engineering survey (GES) consisting of a Ground Penetrating Radar (GPR) and Electromagnetic (EM) survey at the site. The purpose of this survey is to locate and identify utilities, underground storage tanks and other substructures as well as to clear abd mark proposed boring locations on December 12th, 2018.

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

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

steel, soil type, etc.). Signal reflections travel back to the control unit and are represented as color graphic images for interpolation.

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

GEOPHYSICAL METHODS

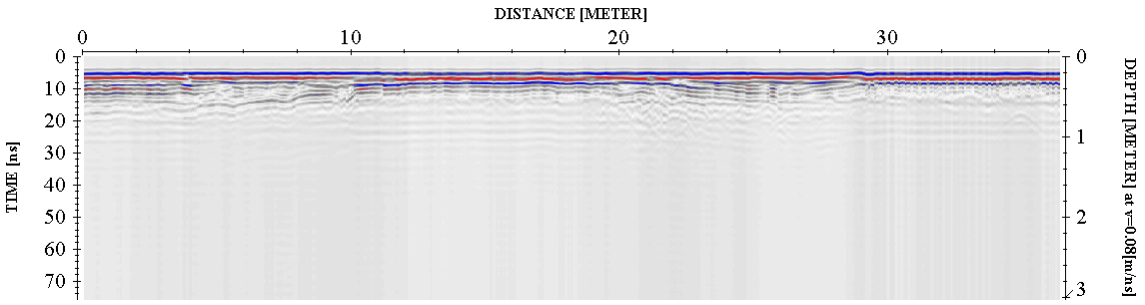
The project site was screened using GPR to search the specified area and inspected for reflections, which could be indicative of substructures and utilities within the subsurface. An EM utility locator was used to help determine the locations of utilities within the survey area.

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

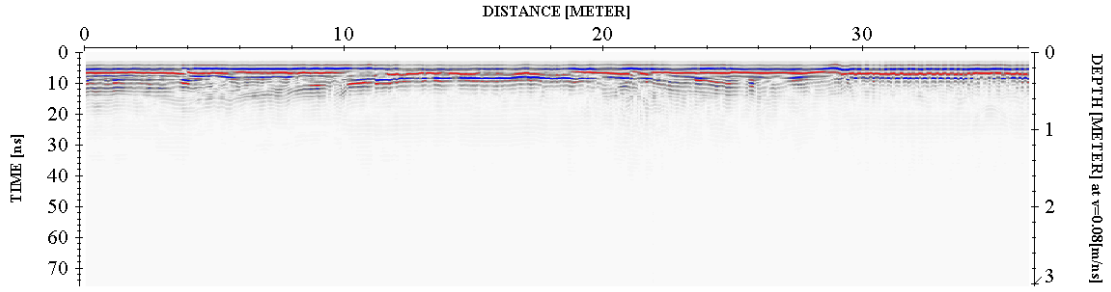
DATA PROCESSING

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

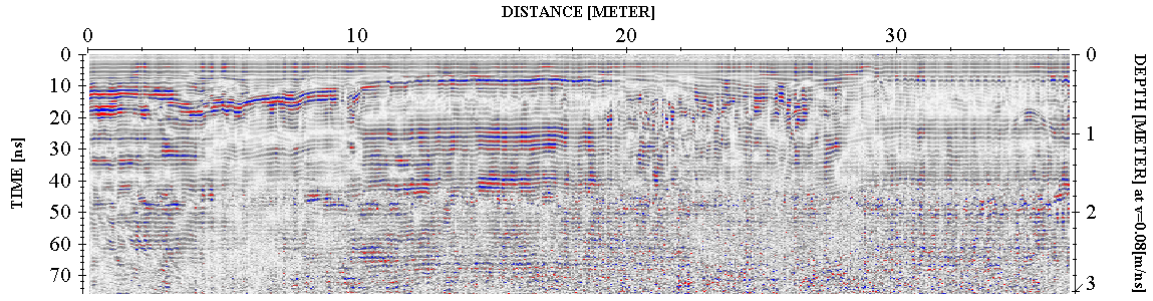
Step 1. Import Raw RAMAC data to standard processing format



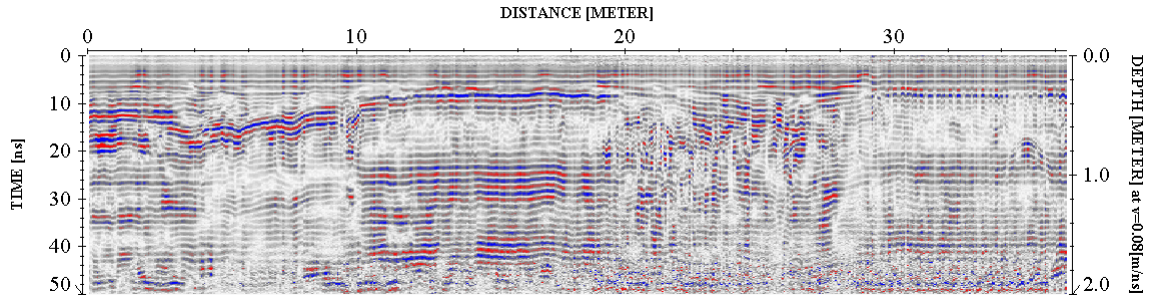
Step 2. Remove instrument noise *(dewow)*



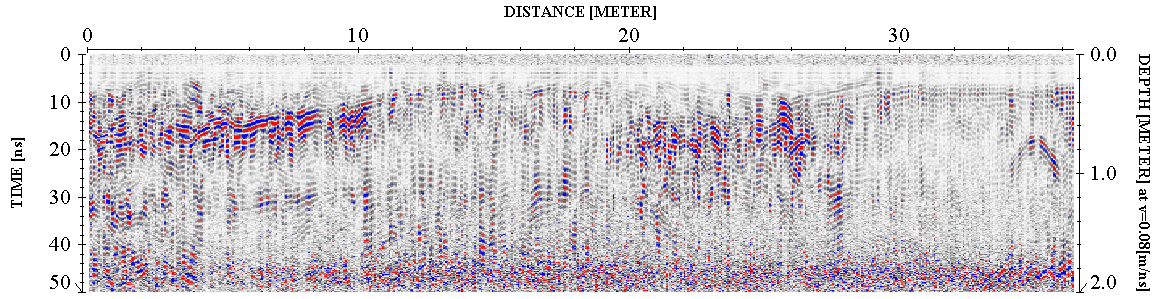
Step 3. Correct for attenuation losses *(energy decay function)*



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



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



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

PHYSICAL SETTINGS

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

Weather: Sunny

Temperature: 35° F

Surface: Asphalt, Concrete, Gravel, Vegetation

Geophysical Noise Level: The geophysical noise at the site was high due to being located in an urban environment. Portions of the site were also covered by cars at the time of the survey.

RESULTS

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

- Anomalies resembling potential subsurface utilities (such as electric, telecommunications, and drainage) were identified during the GES. The approximate locations are shown in the survey plan.
- No large geophysical anomalies resembling underground storage tanks (USTs) were identified in the GES.
- All detected subsurface anomalies were marked in the onsite mark out.
- All cleared boring locations were marked in the onsite mark out.

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

Sincerely,

NOVA Geophysical Services

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

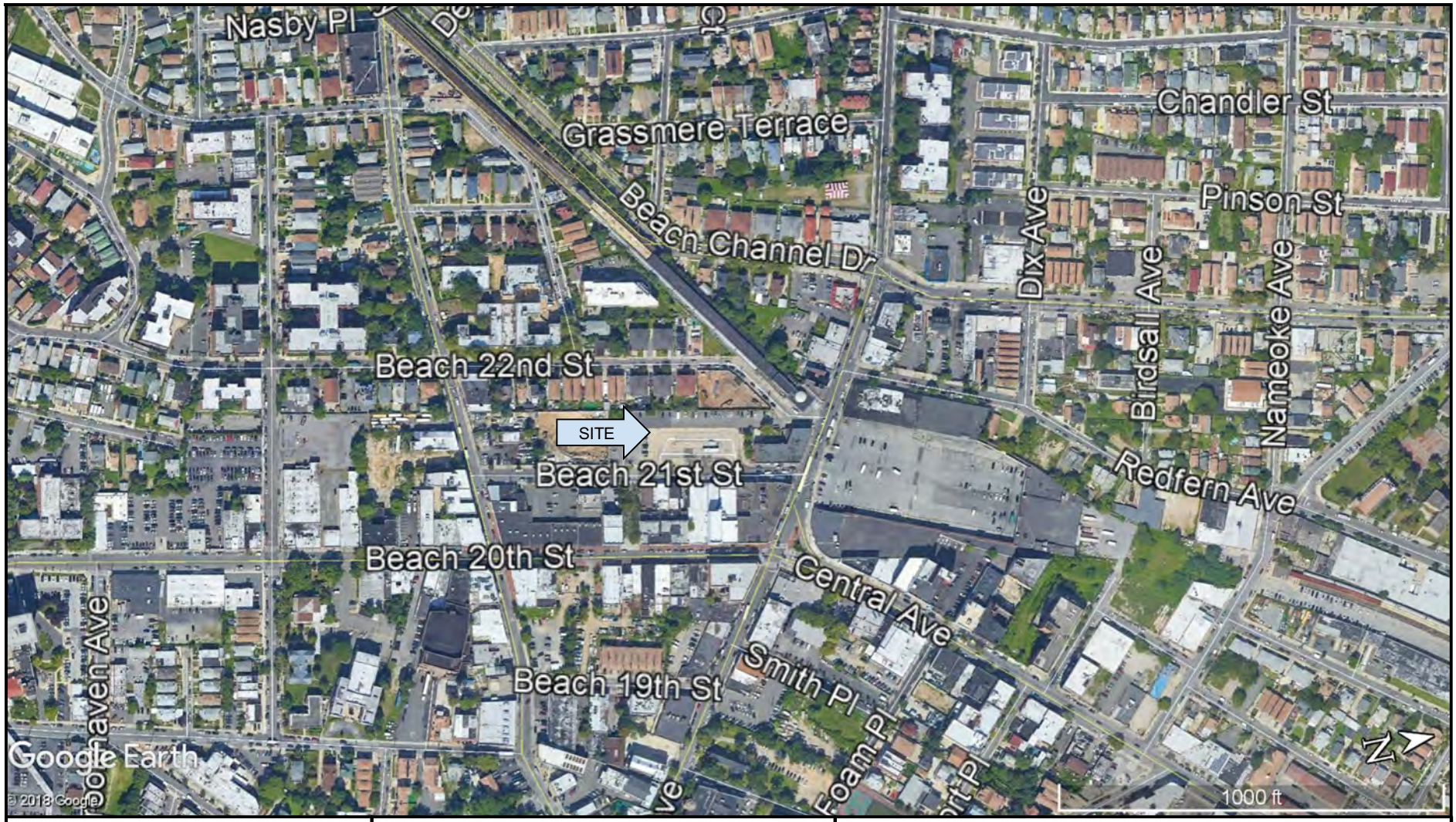
Project Engineer

Attachments:

Location Map

Survey Plan

Geophysical Images



NOVA Geophysical Services

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56-01 Marathon Parkway, # 765
Douglaston, New York 11362
Phone (347) 556-7787 * Fax (718) 261-1527
www.nova-gsi.com

Location Map

SITE:	**OER Jump Start Site** 10-73 Beach 21st Street, Far Rockaway, New York 11691
CLIENT:	Langan
DATE:	December 12th, 2018
AUTH:	Chris Steinley

LEGEND

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SURVEY PLAN

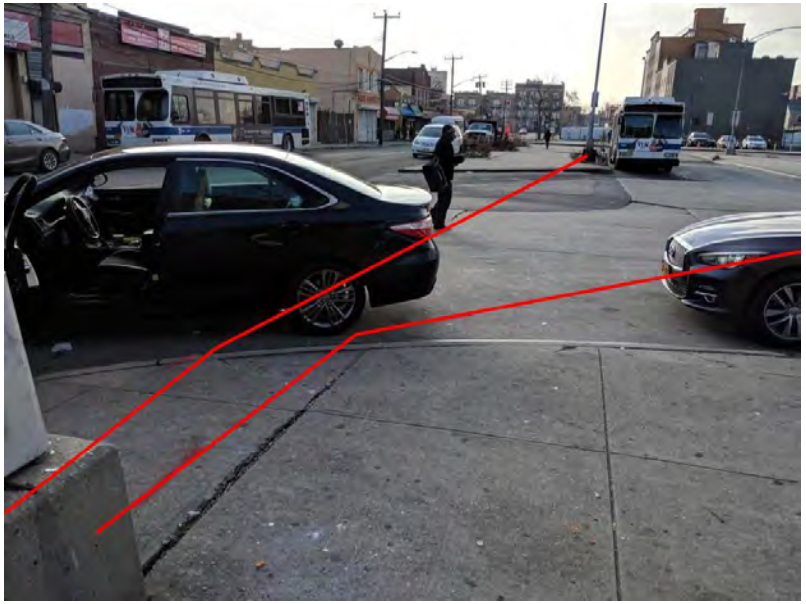
SITE:	**OER Jump Start Site** 10-73 Beach 21st Street, Far Rockaway, New York 11691
CLIENT:	Langan
DATE:	December 12th, 2018
AUTH:	Chris Steinley

LEGEND

- Survey Area
- Drainage
- Electric
- Communications
- Overhead Light
- Parking Meter

GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

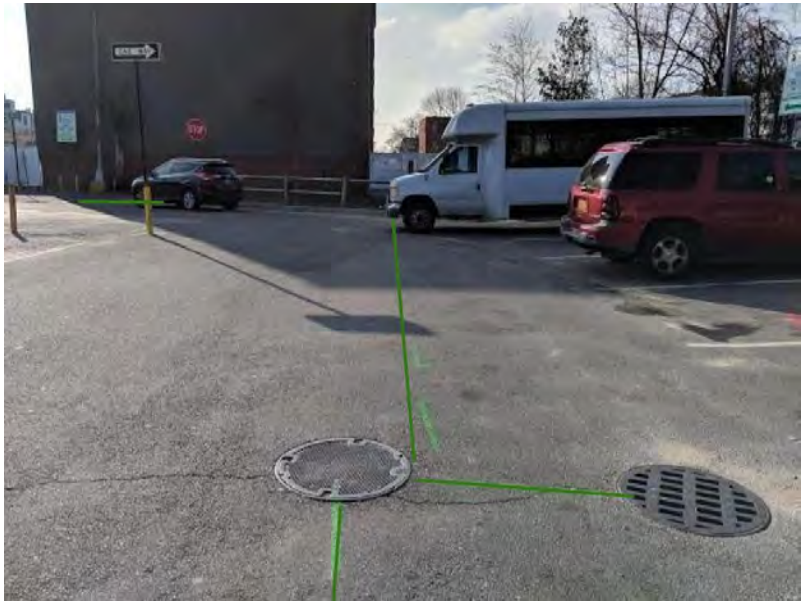


GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

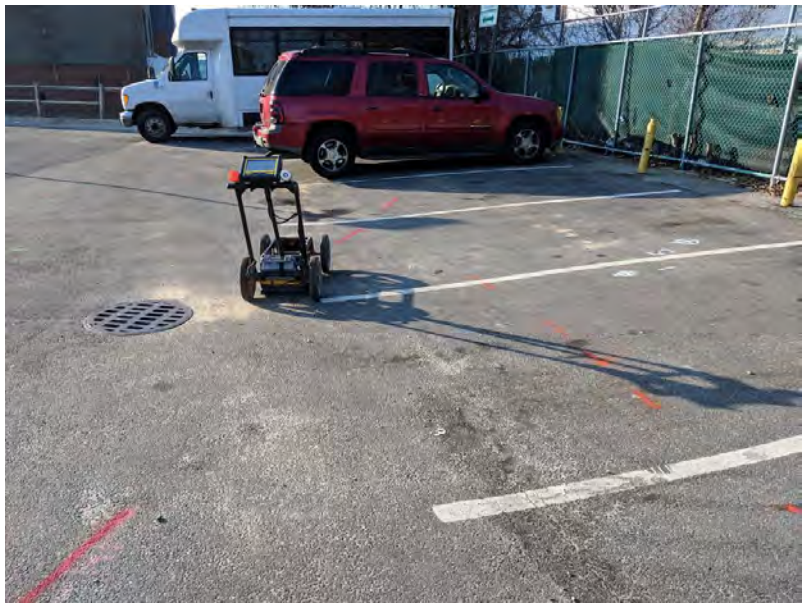
GEOPHYSICAL IMAGES

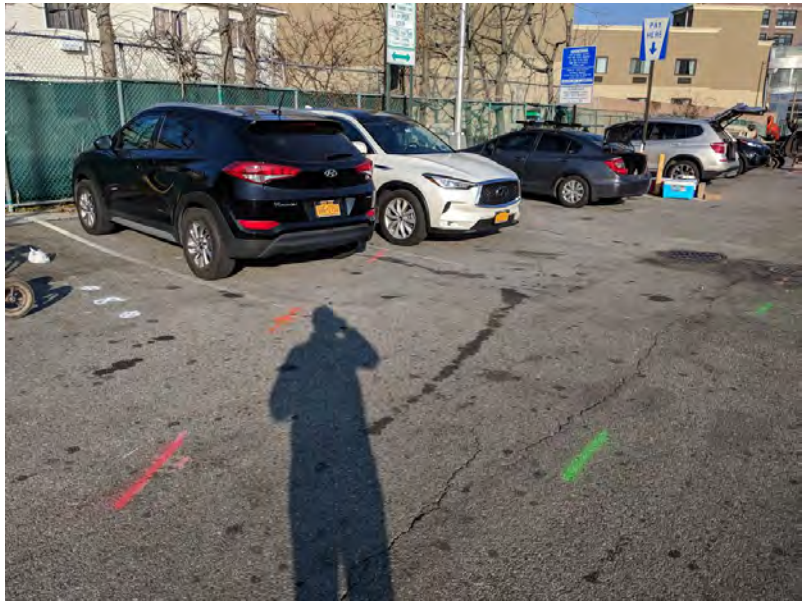
OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

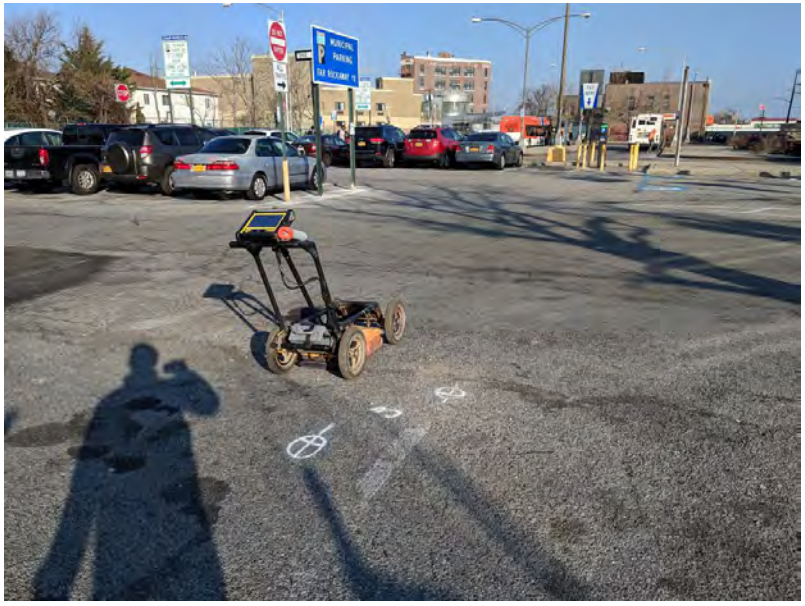


GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

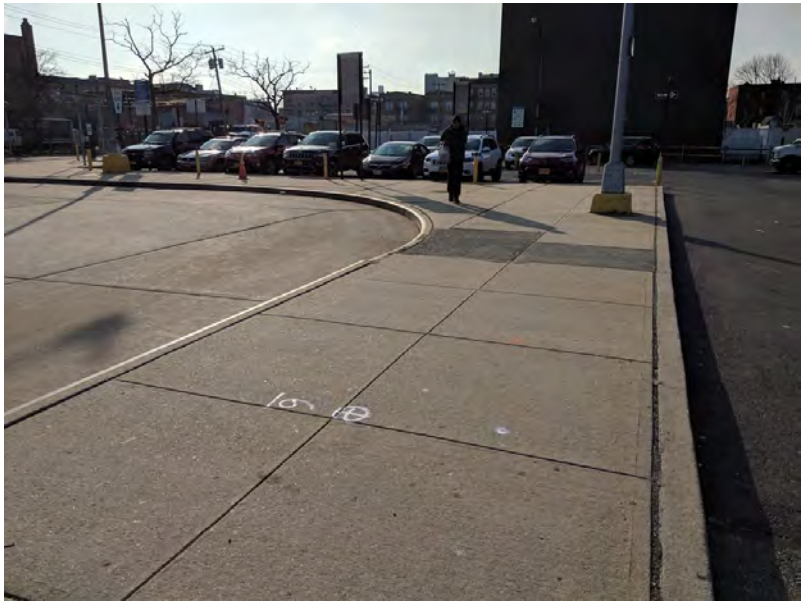






GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018



GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

GEOPHYSICAL IMAGES

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OER Jump Start Site
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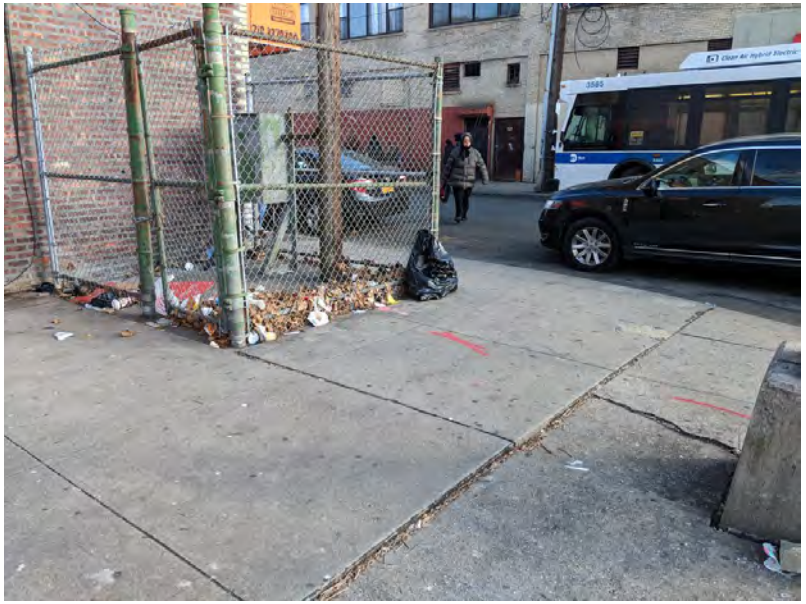
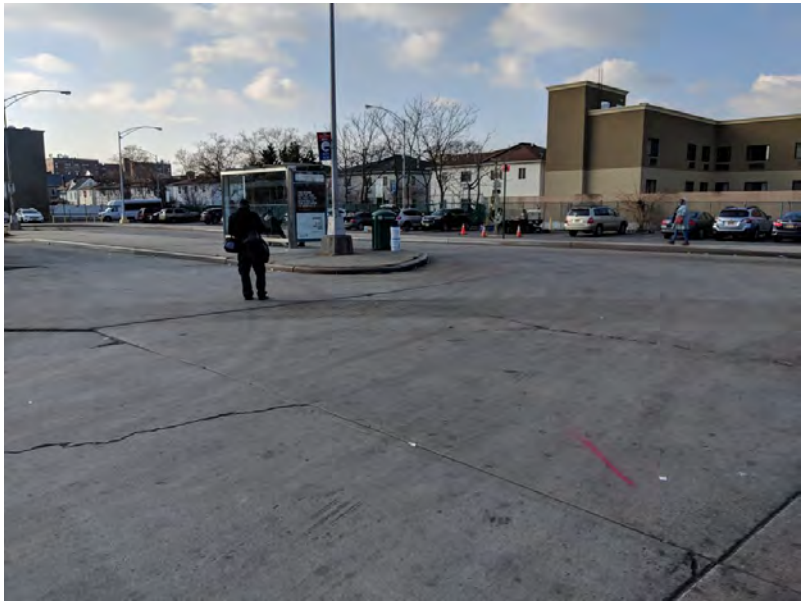
Far Rockaway, New York 11691
December 12th, 2018





GEOPHYSICAL IMAGES

OER Jump Start Site
10-73 Beach 21st Street
Far Rockaway, New York 11691
December 12th, 2018

APPENDIX C

LANGAN

Log of Boring **EB01** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/17/18 / Date Finished: 12/17/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R1a (0-4"): Brown fine SAND, wood vegetation (moist) [FILL] R1b (4-25"): Brown fine SAND, trace fine gravel, trace coarse sand, wood vegetation, fabric (dry) [FILL]	0					0.0	
			1					0.0	Collect sample EB01_0-2 at 16:05
								0.0	
		R1c (25-30"): Grey fine GRAVEL (dry) [FILL]	2	R1	MACROCORE	34/60		0.0	
		R1d (30-34"): Brown fine SAND, trace coarse sand (moist)						0.0	
			3					0.0	
			4						
			5						
			6						
		R2a (0-17"): Tan, coarsening upward fine SAND to coarse SAND with some fine gravel (moist)	7	R2	MACROCORE	37/60		0.0	
			8					0.0	
		R2b (17-37"): Tan, coarsening upward fine SAND with trace coarse sand to coarse SAND with some fine gravel (moist)						0.0	
			9					0.0	
								0.0	
			10					0.0	
		R3a (0-9"): Grey fine GRAVEL, some fine sand, trace coarse sand (moist)						0.0	
		R3b (9-27"): Brown fine SAND, some fine gravel, some coarse sand, trace grey fine gravel (moist)	11					0.0	
								0.0	
			12	R3	MACROCORE	57/60		0.0	Collect sample EB01_12-14 at 16:30
		R3c (27-33"): Tan fine SAND (moist)						0.0	
		R3d (33-43"): Tan coarse SAND, some fine gravel, some fine sand (moist)	13					0.0	
								0.0	
			14						

LANGAN

Log of Boring **EB01** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R3e (43-57"): Brown fine SAND, trace clay, trace fine gravel (moist)	14	R3		57/60		0.0 0.0	Borehole backfilled with clean cuttings and capped with concrete
		End of Boring (EOB) @ 15 feet below grade surface (bgs)	15					0.0	EOB @ 15 feet bgs
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

LANGAN

Log of Boring **EB02** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/14/18 / Date Finished: 12/14/18
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 15 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-10"): Dark grey coarse SAND, some fine gravel, trace clay, trace black fine gravel (moist) [FILL]	1					0.0	
		R1b (10--13"): Dark brown CLAY, trace fine gravel, trace red fine gravel (moist) [FILL] R1c (13-31"): Brown fine SAND, some fine gravel, some coarse sand (moist) [FILL]	2	R1	MACROCORE	31/60		0.0	Collect sample EB02_1.5-3.5 at 15:46
			3					0.0	
			4					0.0	
			5					0.0	
		R2a (0-8"): Brown to black fine SAND, some coarse sand, trace clay (moist) [FILL]	6					0.0	Collect sample EB02_6-8 at 16:10
		R2b (8-30"): Yellow, coarsening upward fine SAND to coarse SAND with some fine gravel (moist)	7	R2	MACROCORE	50/60		0.0	
			8					0.0	
		R2c (30-50"): Yellow, coarsening upward fine SAND to coarse SAND with some fine gravel (moist)	9					0.0	
			10					0.0	
		R3a (0-14"): Brown fine SAND, some fine gravel, some coarse sand (moist)	11					0.0	
		R3b (14-27"): Light yellow fine SAND (moist)	12	R3	MACROCORE	55/60		0.0	Collect sample EB02_12-14 at 16:25
		R3c (27-35"): Light yellow medium SAND, some fine gravel, trace coarse sand (moist)	13					0.0	
		R3d (35-55"): Light yellow fine SAND (moist)	14					0.0	

LANGAN

Log of Boring **EB02** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		55/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

LANGAN

Log of Boring **EB03** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/17/18 — Date Finished: 12/17/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0					0.0	
		R1a (0-3"): Grey fine GRAVEL, some coarse sand (dry) [FILL] R1b (3-10"): Dark brown fine SAND, some fine gravel (moist) [FILL]	1					0.0	
		R1c (10-12"): Grey fine GRAVEL (dry) [FILL] R1d (12-26"): Brown fine SAND, trace fine gravel (moist)	2	R1	MACROCORE	37/60		0.0	Collect sample EB03_1.5-3.5 at 15:00
		R1e (26-37"): Brown coarse SAND, some fine gravel (moist)	3					0.0	
			4					0.0	
			5					0.0	
		R2a (0-8"): Brown to grey fine SAND, some fine gravel, some coarse sand (dry)	6					0.0	
		R2b (8-28"): Light brown fine GRAVEL, some coarse sand, trace fine sand (moist)	7	R2	MACROCORE	49/60		0.0	
		R2c (28-49"): Light yellow coarse SAND, some fine sand, some fine gravel, trace medium sand (moist)	8					0.0	
			9					0.0	
			10					0.0	
		R3a (0-8"): Light brown fine SAND, some coarse sand, some fine gravel (dry)	11					0.0	
		R3b (8-11"): Grey fine SAND, some fine gravel, some fine gravel, some coarse sand (dry)	12	R3	MACROCORE	56/60		0.0	Collect sample EB03_12-14 at 15:30
		R3c (11-32"): Tan coarse SAND, some fine gravel, some fine sand, trace medium sand (moist) R3d (32-56"): Tan fine SAND, trace coarse sand, trace fine gravel (moist)	13					0.0	
			14						

LANGAN

Log of Boring **EB03** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		56/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

LANGAN

Log of Boring **EB04** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/11/18 — Date Finished: 12/11/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 20 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 4 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE	0						Hand cleared to 5 feet. Hammer through concrete apron.
		R1 (0-18"): Brown fine SAND, some fine gravel, trace coarse sand, trace medium sand, trace red fine gravel, concrete aggregate (dry) [FILL]	1	R1	HAND AUGER	N/A		0.0	Collect sample EB04_0-2 at 16:35
		R2 (0-12"): Brown fine SAND, some fine gravel, trace coarse sand, trace medium sand, trace red fine gravel, concrete aggregate (dry) [FILL]	2	R2	HAND AUGER	N/A		0.0	
		R3 (0-12"): Brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	3	R3	HAND AUGER	N/A		0.0	
		R4 (0-12") Brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	4	R4	HAND AUGER	N/A		0.0	
		R5 (0-27"): Brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	5	R5	MACROCORE	27/48		0.0	
			6					0.0	
			7					0.0	
			8					0.0	
		R6a (0-11"): Brownish grey fine SAND, trace coarse sand, trace clay, concrete aggregate, trace red fine gravel (dry) [FILL]	9	R6	MACROCORE	45/48		0.0	
		R6b (11-45"): Light yellow, coarsening upward fine SAND to coarse SAND with trace fine gravel (dry)	10					0.0	
			11					0.0	
		R7a (0-12"): Yellow grey fine SAND, trace fine gravel, trace coarse sand, trace medium sand, trace grey fine gravel (cobble?) (dry)	12	R7	MACROCORE	45/48		0.0	
		R7b (12-45"): Light yellow, coarsening upward fine SAND to coarse SAND with some fine gravel, some grey to brown fine sand (dry)	13					0.0	
			14						

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Log of Boring **EB04** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14					0.0	Collect sample EB04_14-16 at 16:55
			15	R7	MACROCORE	45/48		0.0	
								0.0	
								0.0	
			16					0.0	
		R8a (0-15"): Brownish grey fine SAND, some fine gravel, trace coarse sand, trace medium sand (dry)						0.0	
			17					0.0	
		R8b (15-45"): Light yellow, coarsening upward fine SAND to medium SAND with some fine gravel (dry)						0.0	
			18	R8	MACROCORE	45/48		0.0	
								0.0	
			19					0.0	
								0.0	Borehole backfilled with clean cuttings and capped with concrete
			20					0.0	
		End of Boring (EOB) at 20 feet below grade surface (bgs)							EOB @ 20 feet bgs
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB05** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/14/18 / Date Finished: 12/14/18
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 15 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0					0.0	
		R1a (0-18"): Grey fine GRAVEL, some coarse sand, trace fine sand (dry) [FILL]	1					0.0	
			2	R1	MACROCORE	38/60		0.0	Collect sample EB05_1.5-3.5 at 13:05
			3					0.0	
		R1b (18-23"): Grey to brown fine SAND, trace fine gravel, trace coarse sand (dry) [FILL]						0.0	
		R1c (23-27"): Tan fine SAND, trace medium sand (moist)	4						
		R1d (27-33"): Tan coarse SAND, some fine gravel, trace medium sand (dry)							
		R1e (33-38"): Light brown medium SAND, some coarse sand, trace fine gravel (dry)	5						
		R2a (0-5"): Brown fine SAND, trace coarse sand, trace fine gravel, trace red coarse sand (moist)						0.0	
		R2b (5-13"): Grey coarse SAND, some fine gravel, some fine sand (dry)	6					0.0	
		R2c (13-15"): Tan fine SAND, some fine gravel (dry)						0.0	
		R2d (15-32"): Light brown fine SAND, some fine gravel, some coarse sand (dry)	7					0.0	
				R2	MACROCORE	57/60		0.0	
		R2e (32-37"): Light brown fine SAND (moist)	8					0.0	
		R2f (37-57"): Tan fine SAND, trace fine gravel (moist)						0.0	
			9					0.0	
								0.0	
		R3a (0-24"): Dark grey fine GRAVEL, some fine sand, some coarse sand, trace medium sand, trace red medium sand (dry)	10					0.0	
								0.0	
			11					0.0	
								0.0	
			12	R3	MACROCORE	57/60		0.0	Collect sample EB05_12-14 at 15:10
		R3b (24-57"): Light yellow fine SAND, trace fine gravel, trace coarse sand (moist)						0.0	
			13					0.0	
								0.0	
			14						

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Log of Boring **EB05** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		57/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB06** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/14/18 / Date Finished: 12/14/18
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 15 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Allyson Kritzer, Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE	0						
		R1a (0-6"): Grey fine GRAVEL (dry) [FILL] R1b (6-9"): Black coarse SAND, some fine sand, some fine gravel (dry) [FILL] R1c (9-13"): Dark brown fine SAND, some coarse sand, trace fine gravel (dry) [FILL] R1d (13-15"): Grey fine GRAVEL, some coarse sand, trace medium sand (dry) [FILL] R1e (15-17"): White fine GRAVEL, some fine sand (dry) [FILL]	1 2 3	R1	MACROCORE	41/60		0.0 0.0 0.0 0.0 0.0 0.0 0.0	Collect sample EB06_1-3 at 10:27
		R1f (17-23"): Brown fine SAND, trace fine gravel, trace coarse sand (dry) R1g (23-25"): Black medium SAND, some coarse sand, trace fine gravel (dry) R1h (25-41"): Brown fine SAND, some coarse sand, trace fine gravel (dry)	4						
		R2a (0-8"): Grey fine GRAVEL, some fine sand, some medium sand, trace coarse sand (dry)	5						
		R2b (8-16"): Brown fine SAND, some coarse sand, some fine gravel (dry) R2c (16-24"): White fine SAND, some coarse sand, some fine gravel (dry) R2d (24-34"): Light brown fine SAND, some medium sand, some coarse sand (moist)	6 7 8 9	R2	MACROCORE	34/60		0.0 0.0 0.0 0.0 0.0	
		R3a (0-23"): Tannish brown fine SAND, some coarse sand, some fine gravel (moist)	10 11					0.0	
		R3b (23-30"): Tan to yellow to orange fine SAND, some medium sand, some coarse sand (moist)	12 13 14	R3	MACROCORE	30/60		0.0 0.0	Collect sample EB06_12-14 at 10:42

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Log of Boring **EB06** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		30/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB07** Sheet 1 of 3

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/11/18 — Date Finished: 12/11/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 32 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 7 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First ▽ 29 — Completion ▼ N/A — 24 HR. ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0	R1	HAND AUGER	N/A			Hand clear to 5 feet. Hammer through concrete apron.
		R1 (0-12"): Light brown fine SAND, some fine gravel, trace coarse sand, trace silt, trace medium sand (dry) [FILL]	1	R2	HAND AUGER	N/A		0.0	Collect sample EB07_1-2 at 11:30
		R2 (0-12"): Light brown fine SAND, some fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	2	R3	HAND AUGER	N/A		0.0	
		R3 (0-12"): Brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand, wood vegetation, trace red fine gravel (dry) [FILL]	3	R4	HAND AUGER	N/A		0.0	
		R4 (0-28"): Brown fine SAND, some fine gravel, trace coarse sand, trace medium sand, trace silt, trace clay, trace red fine gravel, concrete aggregate (moist) [FILL]	4	R5	MACROCORE	28/48		0.0	
			5					0.0	
			6					0.0	
			7					0.0	
		R5a (0-17"): Brown fine SAND, some fine gravel, trace coarse sand, trace medium sand, trace red fine gravel (moist) [FILL]	8	R6	MACROCORE	34/48		0.0	
			9					0.0	
			10					0.0	
		R5b (17-34"): Light yellow fine SAND, trace coarse sand, trace medium sand (moist)	11					0.0	Collect sample EB07_11-12 at 14:45
		R6 (0-45"): Light yellow, coarsening upward fine SAND to coarse SAND with some fine gravel (dry)	12	R7	MACROCORE	45/48		0.0	
			13					0.0	
			14					0.0	

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Log of Boring **EB07** Sheet 2 of 3

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14					0.0	
			15	R7	MACROCORE	45/48		0.0	
								0.0	
								0.0	
		R7a (0-27"): Light yellow to grey, coarsening upward fine SAND to coarse SAND with some fine gravel, some fine sand (dry)	16					0.0	
								0.0	
			17					0.0	
								0.0	
			18	R8	MACROCORE	46/48		0.0	
		R7b (27-46"): Light yellow, coarsening upward fine SAND to coarse SAND with some fine gravel (dry)						0.0	
			19					0.0	
								0.0	
		R8a (0-15"): Light yellow fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry)	20					0.0	
			21						
			22	R9	MACROCORE	27/48		0.0	
								0.0	
		R8b (15-27"): Brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand, trace grey fine gravel (dry)	23					0.0	
								0.0	
		R9a (0-21"): Yellowish brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry)	24					0.0	
			25					0.0	
								0.0	
			26	R10	MACROCORE	37/48		0.0	
								0.0	
		R9b (21-37"): Light yellow medium SAND, trace fine gravel, trace fine sand, trace coarse sand (moist)	27					0.0	
								0.0	
		R10 (0-28"): Light yellow medium SAND, trace fine gravel, trace coarse sand (wet)	28					0.0	
			29						Water table at 29 feet bgs
				R11	MACROCORE	28/48			
			30					0.0	
								0.0	
			31					0.0	Borehole backfilled with clean cuttings and capped with
			31.5						

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Log of Boring **EB07** Sheet 3 of 3

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			31.5	R11				0.0	concrete
		End of Boring (EOB) at 32 feet below grade surface (bgs)	32					0.0	EOB @ 32 feet bgs
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						
			46						
			47						
			48						
			49						

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Log of Boring **EB08** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/17/18 — Date Finished: 12/17/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0					0.0	
		R1a (0-15"): Brown fine SAND, some fine gravel, trace coarse sand, concrete, brick (dry) [FILL]	1					0.0	
		R1b (15-33"): Tan coarse SAND, some fine gravel, some medium sand (dry)	2	R1	MACROCORE	33/60		0.0	Collect sample EB08_1.5-3.5 at 11:45
			3					0.0	
			4					0.0	
		R2a (0-10"): Tan fine SAND, some fine gravel, some coarse sand (dry)	5					0.0	
		R2b (10-13"): Brownish grey fine SAND, trace fine gravel, trace red medium sand (moist)	6					0.0	
		R2c (13-40"): Tan coarse SAND, some fine gravel, some fine sand, trace medium sand (moist)	7	R2	MACROCORE	57/60		0.0	
			8					0.0	
		R2d (40-57"): Tan fine SAND, trace fine gravel, trace coarse sand (moist)	9					0.0	
		R3a (0-15"): Tannish grey fine SAND, some fine gravel, some coarse sand (moist)	10					0.0	
			11					0.0	
		R3b (15-28"): Light yellow fine SAND, some coarse sand, trace fine gravel (moist)	12	R3	MACROCORE	57/60		0.0	Collect sample EB08_12-14 at 12:25
		R3c (28-33"): Light yellow fine SAND, trace coarse sand (moist)	13					0.0	
		R3d (33-37"): Brown coarse SAND, some fine gravel, trace medium sand (moist)						0.0	
		R3e (37-49"): Light yellow fine SAND (moist)	14						

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Log of Boring **EB08** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R3f (49-57"): Brownish tan coarse SAND, some fine gravel, some fine sand (dry)	14	R3		57/60		0.0 0.0	Borehole backfilled with clean cuttings and capped with concrete
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	EOB @ 15 feet bgs
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB09** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/13/18 / Date Finished: 12/13/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0					0.0	
		R1a (0-3"): Dark grey fine GRAVEL, some coarse sand, some fine sand, trace medium sand (moist) [FILL]	1					0.0	
		R1b (3-17"): Light brown fine SAND, some coarse sand, trace fine gravel (moist)	2	R1	MACROCORE	37/60		0.0	Collect sample EB09_1.5-2.5 at 15:42
		R1c (17-37"): Light yellow coarse SAND, some fine gravel, some medium sand, trace fine sand (moist)	3					0.0	
			4					0.0	
		R2a (0-12"): Brownish grey fine SAND, some fine gravel, trace coarse sand, trace medium sand (moist) R2b (12-15"): Grey fine GRAVEL, some fine sand (moist)	5					0.0	
		R2c (15-34"): Light yellow, coarsening upward fine SAND to medium SAND with some fine gravel (moist)	6					0.0	
			7	R2	MACROCORE	57/60		0.0	
			8					0.0	
		R2d (34-57"): Light yellow, coarsening upward fine SAND to medium SAND with some fine gravel (moist)	9					0.0	
		R3a (0-15"): Brownish grey fine SAND, some fine gravel, some coarse sand (moist)	10					0.0	
			11					0.0	
		R3b (15-25"): Light yellow fine SAND, trace fine gravel, trace coarse sand (moist)	12	R3	MACROCORE	57/60		0.0	Collect sample EB09_12-14 at 15:55
		R3c (25-53"): Light yellow, coarsening upward fine SAND to medium SAND with some fine gravel (moist) R3d (53-57"): Brown fine SAND, trace coarse sand, trace medium sand (moist)	13					0.0	
			14						

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Log of Boring **EB09** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		57/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB10** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/12/18 — Date Finished: 12/12/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Luke McCartney, Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-6"): Grey fine GRAVEL, trace coarse sand (moist) [FILL]	1					0.0	
								0.0	
								0.0	Collect sample EB10_1.5-2.5 at 10:27
		R1b (6-31"): Light brown fine GRAVEL, some medium sand, trace coarse sand (moist)	2	R1	MACROCORE	31/60		0.0	
								0.0	
			3					0.0	
			4						
		R2 (0-12"): Light yellow fine SAND, trace coarse sand, trace medium sand (dry)	5						R2 liner jammed in macroscope, sample collected as a pile without depth control
			6						
			7	R2	MACROCORE	N/A			
			8						
			9						
		R3a (0-23"): Light yellow coarse SAND, trace fine gravel, trace medium sand (moist)	10						
			11						
		R3b (23-38"): Light yellow fine SAND (moist)	12	R3	MACROCORE	45/60		0.0	Collect sample EB10_12-14 at 14:35
		R3c (38-45"): Light yellow fine SAND, some fine gravel, trace coarse sand, trace medium sand (moist)						0.0	
			13					0.0	
								0.0	
			14						

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Log of Boring **EB10** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		45/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB11** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/12/18 — Date Finished: 12/12/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE	0					0.0	Collect sample EB11_0-2 at 15:13
		R1a (0-13"): Light brown medium SAND, some fine gravel, trace coarse sand (dry) [FILL] R1b (13-20"): Grey fine SAND, some fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	1					0.0	
		R1c (20-45"): Yellow coarse SAND, some medium sand, some fine gravel, trace fine sand (dry)	2	R1	MACROCORE	58/60		0.0	
			3					0.0	
		R1d (45-58"): Light yellow fine SAND (moist)	4					0.0	
		R2 (0-28"): Brown coarse SAND, some fine gravel, some medium sand, trace fine sand (moist)	5					0.0	
			6						
			7	R2	MACROCORE	28/60			
			8					0.0	
			9					0.0	
		R3a (0-24"): Light yellow coarse SAND, some fine gravel, trace medium sand (moist)	10					0.0	
			11						
			12	R3	MACROCORE	40/60		0.0	Collect sample EB11_12-14 at 15:15
			13					0.0	
		R3b (23-40"): Light yellow fine SAND (moist)	14					0.0	

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Log of Boring **EB11** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			14	R3		40/60		0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
								0.0	
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB12** Sheet 1 of 2

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 12/13/18 — Date Finished: 12/13/18
Drilling Equipment: Geoprobe 7822 DT	Completion Depth: 15 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Sharon Dixon
Sampler: 5-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0					0.0	
		R1a (0-11"): Light brown fine SAND, trace fine gravel, trace coarse sand, trace medium sand (dry) [FILL]	1					0.0	
		R1b (11-33"): Light yellow medium SAND, some coarse sand, trace fine gravel (dry)	2	R1	MACROCORE	33/60		0.0	Collect sample EB12_1.5-2.5 at 9:56
			3					0.0	
			4					0.0	
		R2a (0-8"): Brownish grey fine SAND, trace coarse sand, trace medium sand (dry)	5					0.0	
		R2b (8-12"): Grey fine SAND, trace fine gravel (moist)	6					0.0	
		R2c (12-23"): Light yellow fine SAND, some fine gravel, some coarse sand, trace medium sand (moist)	7	R2	MACROCORE	57/60		0.0	
			8					0.0	
		R2d (23-39"): Light yellow coarse SAND, some fine gravel, trace medium sand, trace fine sand (moist)	9					0.0	
		R2e (39-43"): Light yellow fine SAND, trace coarse sand (moist)	10					0.0	
		R2f (43-57"): Light yellow fine GRAVEL, some coarse sand, trace medium sand (moist)	11					0.0	
		R3a (0-5"): Dark grey fine SAND, trace fine gravel, trace coarse sand (moist)	12	R3	MACROCORE	49/60		0.0	Collect sample EB12_12-14 at 10:41
		R3b (5-7"): Grey fine SAND, trace fine gravel (dry)	13					0.0	
		R3c (7-14"): Brown fine SAND, trace coarse sand, trace medium sand (dry)	14					0.0	
		R3d (14-18"): Grey fine GRAVEL, some fine sand, trace coarse sand (dry)							
		R3e (18-38"): Light yellow fine SAND, trace fine gravel, trace coarse sand (dry)							

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Log of Boring **EB12** Sheet 2 of 2

Project	Project No.
Beach 21st Street	170540601
Location	**Elevation and Datum**
Far Rockaway, NY	25 NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		R3f (38-41"): Light brown coarse SAND, some fine gravel, trace medium sand (dry) R3g (41-49"): Light yellow fine SAND (dry)	14	R3		49/60		0.0 0.0	Borehole backfilled with clean cuttings and capped with concrete EOB @ 15 feet bgs
		End of Boring (EOB) at 15 feet below grade surface (bgs)	15					0.0	
			16						
			17						
			18						
			19						
			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			31						
			31.5						

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Log of Boring **EB13** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/13/19 / Date Finished: 3/13/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Nick Turro
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-5"): Dark grey fine SAND, some fine gravel (moist) [FILL] R1b (5-9"): Grey to white fine SAND, some fine gravel (moist) [FILL] R1c (9-28"): Brown fine SAND, some fine gravel (moist) [FILL]	1 2 3 4	R1	MACROCORE	28/48		0.0 0.0 0.0 0.0 0.0	Collect sample EB13_0-2 at 8:45
		R2a (0-5"): Brown fine SAND, trace fine gravel (wet) [FILL] R2b (5-7"): Dark grey fine SAND, trace fine gravel (moist) [FILL] R2c (7-30"): Brown fine SAND, some fine gravel, trace black fine gravel (moist) [FILL]	5 6 7 8	R2	MACROCORE	30/48		0.0 0.0 0.0 0.0 0.0	Collect sample EB13_6-8 at 8:55
		R3a (0-4"): Greyish brown fine SAND, some fine gravel (moist) [FILL] R3b (4-40"): Light yellow medium SAND, some fine gravel (moist)	9 10 11 12	R3	MACROCORE	40/48		0.0 0.0 0.0 0.0 0.0 0.0	Borehole backfilled with clean cuttings and capped with concrete
		End of Boring (EOB) at 12 feet below grade surface (bgs)	13 14						EOB @ 12 feet bgs

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Log of Boring **EB14** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/13/19 / Date Finished: 3/13/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Nick Turro
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-12"): Greyish brown fine SAND, trace fine gravel (wet) [FILL]	1					0.0	
								0.0	Collect sample EB14_0-2 at 8:00
		R1b (12-29"): Brown fine SAND, trace fine gravel, trace red violet fine gravel (wet) [FILL]	2	R1	MACROCORE	29/48		0.0	
								0.0	
			3						
			4						
			5						
		R2a (0-10"): Greyish brown fine SAND, trace fine gravel (wet) [FILL]	6	R2	MACROCORE	27/48		0.0	Collect sample EB14_6-8 at 8:20
		R2b (10-13"): Red violet fine GRAVEL, some white fine sand (moist) [FILL]						0.0	
		R2c (13-27"): Brown fine SAND, trace fine gravel (wet) [FILL]	7					0.0	
								0.0	
			8					0.0	
		R3a (0-8"): Greyish brown fine SAND, some fine gravel, glass (moist) [FILL]	9						
								0.0	
		R3b (8-36"): Light yellow fine SAND, some fine gravel (moist)	10	R3	MACROCORE	36/48		0.0	
								0.0	
			11					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 12 feet below grade surface (bgs)	12					0.0	EOB @ 12 feet bgs
			13						
			14						

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Log of Boring **EB15** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 / Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0						
		R1a (0-6"): Grey to brown medium SAND, some fine sand, some fine gravel, trace white fine gravel (concrete?), trace red fine gravel (brick?) (moist) [FILL] R1b (6-10"): Grey fine GRAVEL (dry) [FILL] R1c (10-18"): Brown fine SAND, trace fine gravel, trace red fine gravel (brick?) (moist) [FILL]	1 2 3 4	R1	MACROCORE	18/48		0.0 0.0 0.0	Collect sample EB15_0-2 at 8:00
		R2a (0-3"): Brown fine SAND, trace fine gravel, trace red fine gravel (moist) [FILL] R2b (3-8"): Grey fine SAND, some fine gravel, trace red fine gravel (brick?) (dry) [FILL] R2c (8-16"): Borwn fine SAND, trace red fine gravel (brick?), wood fragments (moist) [FILL] R2d (16-29"): Brown fine SAND, trace white fine gravel (concrete?) (moist) [FILL]	5 6 7 8	R2	MACROCORE	29/48		0.0 0.0 0.0 0.0 0.0	Collect sample EB15_8-10 at 8:30
		R3a (0-24"): Brown to grey fine SAND, some fine gravel, trace olive fine gravel (moist) [FILL]	9 10	R3	MACROCORE	41/48		0.0 0.0 0.0 0.0	
		R3b (24-41"): Light yellow medium SAND, trace fine gravel (moist)	11					0.0 0.0	Borehole backfilled with clean cuttings and capped with concrete
		End of Boring (EOB) at 12 feet below grade surface (bgs)	12 13 14					0.0	EOB @ 12 feet bgs

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Log of Boring **EB16** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/13/19 / Date Finished: 3/13/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 8 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 2 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Nick Turro
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-18"): Dark grey to brown fine GRAVEL, some fine sand, trace red fine gravel (moist) [FILL]	1					0.0	
								0.0	Collect sample EB16_0-2 at 9:20
			2	R1	MACROCORE	23/48		0.0	
		R1b (10-18"): Light yellow fine GRAVEL, some fine sand (moist) [FILL]						0.0	
			3						
			4						
		R2a (0-11"): Greyish brown fine SAND, some fine gravel (dry) [FILL]	5						Collect sample EB16_4-6 at 9:35
								0.0	
		R2b (11-36"): Light brown medium SAND, some fine gravel (moist)	6	R2	MACROCORE	36/48		0.0	
								0.0	
			7					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 8 feet below grade surface (bgs)	8					0.0	EOB @ 8 feet bgs
			9						
			10						
			11						
			12						
			13						
			14						

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Log of Boring **EB17** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/13/19 / Date Finished: 3/13/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 8 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 2 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Nick Turro
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE apron with roadbed	0						
		R1a (0-10"): Dark grey fine SAND, some coarse sand, trace red fine gravel (dry) [FILL]	1					0.0	
								0.0	Collect sample EB17_0-2 at 9:55
		R1b (10-24"): Dark grey fine GRAVEL, fabric (dry) [FILL]	2	R1	MACROCORE	24/48		0.0	
			3					0.0	
			4						Collect sample EB17_3-5 at 10:10
		R2a (0-9"): Dark grey fine GRAVEL, some coarse sand (dry) [FILL]	5					0.0	
		R2b (9-42"): Light brown, coarsening upwards, fine SAND to coarse SAND with some fine gravel (dry)	6	R2	MACROCORE	42/48		0.0	
								0.0	
			7					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 8 feet below grade surface (bgs)	8					0.0	EOB @ 8 feet bgs
			9						
			10						
			11						
			12						
			13						
			14						

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Log of Boring **EB18** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 / Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0						
		R1a (0-16"): Brown to grey fine SAND, trace fine gravel, trace red fine gravel (brick?), trace white fine gravel (concrete?) (dry) [FILL]	1	R1	MACROCORE	41/48		0.0	Collect sample EB18_0-2 at 9:00
			2					0.0	
		R1b (16-24"): Grey fine GRAVEL (dry) [FILL]						0.0	
		R1c (24-28"): Brown fine SAND, trace blue to green medium sand (moist) [FILL]	3					0.0	
		R1d (28-41"): White to light yellow fine SAND, trace fine gravel (dry) [FILL]						0.0	
			4						
		R2a (0-17"): White fine GRAVEL, some fine sand (dry) [FILL]	5	R2	MACROCORE	35/48		0.0	
		R2b (17-35"): Brown fine SAND, some fine gravel, trace red fine gravel (brick?) (moist) [FILL]	6					0.0	Collect sample EB18_6-8 at 9:10, collect duplicate sample SODUP04_030519 at 9:15
			7					0.0	
								0.0	
			8					0.0	
		R3a (0-10"): Grey to brown fine SAND, some fine gravel (moist) [FILL]	9	R3	MACROCORE	36/48		0.0	
		R3b (10-29"): Light yellow fine SAND, trace fine gravel (moist)	10					0.0	
		R3c (29-36"): Light yellow medium SAND, some coarse sand (moist)						0.0	
			11					0.0	Borehole backfilled with clean cuttings and capped with concrete
			12					0.0	
		End of Boring (EOB) at 12 feet below grade surface (bgs)							EOB @ 12 feet bgs
			13						
			14						

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Log of Boring **EB19** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 — Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0						
		R1a (0-18"): Grey fine GRAVEL, some fine sand (dry) [FILL]	1					0.0	
								0.0	
			2	R1	MACROCORE	37/48		0.0	
		R1b (18-37"): Brown to black fine SAND, some fine gravel, trace red fine gravel (brick?), wood fragments (moist) [FILL]						0.0	
			3					0.0	
								0.0	
			4						
		R2a (0-11"): Grey to light brown fine GRAVEL, some fine sand (moist) [FILL]	5					0.0	
		R2b (11-33"): Dark grey to brown fine SAND, some fine gravel, wood fragments (moist) [FILL]	6	R2	MACROCORE	33/48		0.0	Collect sample EB19_6-8 at 10:35, on hold
								0.0	
			7					0.0	
								0.0	
			8					0.0	
		R3a (0-16"): Brown to grey fine SAND, some fine gravel (moist) [FILL]	9						
			10	R3	MACROCORE	30/48		0.0	
								0.0	
		R3b (16-30"): Light yellow fine SAND, some fine gravel (moist)	11					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 12 feet below grade surface (bgs)	12					0.0	EOB @ 12 feet bgs
			13						
			14						

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Log of Boring **EB20** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 — Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 12 ft — Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 3 — Undisturbed N/A — Core N/A
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First N/A — Completion N/A — 24 HR. N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0						
		R1a (0-16"): Grey fine GRAVEL, some fine sand (dry) [FILL]	1					0.0	
								0.0	
			2	R1	MACROCORE	33/48		0.0	
		R1b (16-24"): Brown fine SAND, some fine gravel, wood fragments (moist) [FILL]						0.0	
		R1c (24-30"): Grey fine SAND, some fine gravel (dry) [FILL]	3					0.0	
		R1d (30-33"): Brown fine SAND, trace black fine gravel (moist) [FILL]							
			4						
		R2a (0-7"): Grey fine SAND, some fine gravel (dry) [FILL]	5						
		R2b (7-15"): Brown fine SAND, trace black fine gravel (moist) [FILL]						0.0	
		R2c (15-21"): Grey fine GRAVEL (dry) [FILL]	6	R2	MACROCORE	33/48		0.0	Collect sample EB20_6-8 at 11:15, on hold
								0.0	
		R2d (21-33"): Dark grey fine SAND, some fine gravel, trace red fine gravel (brick?), wood fragments (moist) [FILL]	7					0.0	
								0.0	
			8					0.0	
		R3a (0-20"): Grey to brown fine SAND, some fine gravel (moist) [FILL]						0.0	
			9					0.0	
								0.0	
		R3b (20-44"): Tan fine SAND, some medium sand (moist)	10	R3	MACROCORE	44/48		0.0	
								0.0	
			11					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 12 feet below grade surface (bgs)	12					0.0	EOB @ 12 feet bgs
			13						
			14						

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Log of Boring **EB21** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 / Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 8 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 2 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		1-foot CONCRETE apron with roadbed	0						
		R1a (0-16"): Grey fine SAND, some fine gravel (dry) [FILL]	1	R1	MACROCORE	29/48		0.0	Collect sample EB21_0-2 at 11:45
								0.0	
			2					0.0	
		R1b (16-29"): Brown fine SAND, some fine gravel (moist) [FILL]						0.0	
			3					0.0	
			4						
		R2a (0-10"): Brown to grey fine GRAVEL, some fine sand (moist) [FILL]	5	R2	MACROCORE	40/48		0.0	Collect sample EB21_4-6 at 11:55
		R2b (10-22"): Red fine GRAVEL, some fine sand (moist) [FILL]						0.0	
			6					0.0	
								0.0	
		R2c (22-40"): Tan medium SAND, some fine SAND, trace fine gravel (moist)	7					0.0	Borehole backfilled with clean cuttings and capped with concrete
								0.0	
		End of Boring (EOB) at 8 feet below grade surface (bgs)	8					0.0	EOB @ 8 feet bgs
			9						
			10						
			11						
			12						
			13						
			14						

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Log of Boring **EB22** Sheet 1 of 1

Project: Beach 21st Street	Project No.: 170540601
Location: Far Rockaway, NY	Elevation and Datum: 25 NAVD88
Drilling Company: AARCO Environmental Services, Inc.	Date Started: 3/5/19 / Date Finished: 3/5/19
Drilling Equipment: AMS Powerprobe 9580 VTR	Completion Depth: 8 ft / Rock Depth: N/A
Size and Type of Bit: Direct Push 2-inch Steel Macrocore	Number of Samples: Disturbed 2 / Undisturbed N/A / Core N/A
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First N/A / Completion N/A / 24 HR. N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Tommy Seickel
Sampler: 4-foot Macrocore Sampler	Field Engineer: Mengxi Tan
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		6-inch CONCRETE	0						
		R1a (0-7"): Grey fine GRAVEL, some fine sand (dry) [FILL] R1b (7-17"): Black fine GRAVEL, some fine sand (dry) [FILL]	1					0.0 0.0	Collect sample EB22_0-2 at 12:20
		R1c (17-29"): Brown fine SAND, trace fine gravel (moist) [FILL]	2	R1	MACROCORE	29/48		0.0 0.0 0.0	
			3						
			4						
		R2a (0-7"): Grey to brown fine GRAVEL, some red fine gravel (moist) [FILL] R2b (7-27"): Brown fine SAND, trace fine gravel (moist) [FILL]	5					0.0	Collect sample EB22_5-7 at 12:50 (MS/MSD)
		R2c (27-33") Grey fine SAND, some fine gravel (moist) [FILL]	6	R2	MACROCORE	33/48		0.0 0.0 0.0	
			7						Borehole backfilled with clean cuttings and capped with concrete
		Natural soil noted at the bottom of soil cutting. End of Boring (EOB) at 8 feet below grade surface (bgs)	8					0.0	EOB @ 8 feet bgs
			9						
			10						
			11						
			12						
			13						
			14						

APPENDIX D

WELL CONSTRUCTION AND DEVELOPMENT SUMMARY

Well No. MW05

PROJECT		PROJECT NO.	
10-73 Beach 21st Street		170540601	
LOCATION		**ELEVATION AND DATUM**	
Far Rockaway, NY		el. 25 NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services, Corp.		12/14/2018	12/14/2018
DRILLING EQUIPMENT		**DRILLER**	
AMS Powerprobe® 9580 VTR		Sharohn Dixon	
SIZE AND TYPE OF BIT		**INSPECTOR**	
3-inch Direct Push		Mengxi Tan	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
3"		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	2-inch	Soil Cuttings	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 20 Slot	2-inch	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

AMS Powerprobe® 9580 VTR was used to advance the boring to approximately 30 feet bgs. A two-inch (2") PVC monitoring well was installed using 15' of 10 slot (0.010-inch) well screen, and a solid 2" PVC riser. Well screen was installed from approximately 30 to 15 feet bgs with riser from 15 feet bgs to surface. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

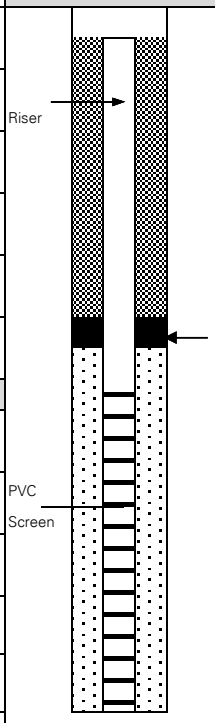
SURGE BLOCK DIAMETER	NA	**TYPE PUMP**	Peristaltic	**DEVELOPMENT CONFIRMATION**
DRILLER OR LANGAN	Driller	**MAX PUMP RATE**	1 LPM	
NUMBER OF SURGE CYCLES	NA	**TOTAL VOLUME**	10 gallons	Purged groundwater was no longer turbid.

	ELEVATION	DEPTH (ft)
TOP OF CASING	24.44	0
TOP OF SEAL	23.94	0.5
TOP OF FILTER	10.44	14
TOP OF SCREEN	9.44	15.0
BOTTOM OF BORING	-5.56	30
SCREEN LENGTH		15'
SLOT SIZE		No. 20 Slot; 0.020 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
	12/31/2018	18.36 ft

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
Asphalt	
Fill	
	14
	15.00
Medium Sand	
	30.00

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21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION AND DEVELOPMENT SUMMARY

Well No. MW09

PROJECT		PROJECT NO.	
10-73 Beach 21st Street		170540601	
LOCATION		**ELEVATION AND DATUM**	
Far Rockaway, NY		el. 25 NAVD 88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services, Corp.		12/14/2018	12/14/2018
DRILLING EQUIPMENT		**DRILLER**	
AMS Powerprobe® 9580 VTR		Sharhon Dixon	
SIZE AND TYPE OF BIT		**INSPECTOR**	
3-inch Direct Push		Mengxi Tan	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
3"		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	2-inch	Soil Cuttings	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 20 Slot	2-inch	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

AMS Powerprobe® 9580 VTR was used to advance the boring to approximately 30 feet bgs. A two-inch (2") PVC monitoring well was installed using 15' of 10 slot (0.010-inch) well screen, and a solid 2" PVC riser. Well screen was installed from approximately 30 to 15 feet bgs with riser from 15 feet bgs to surface. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

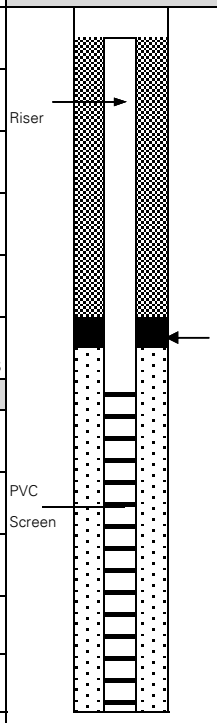
SURGE BLOCK DIAMETER	NA	**TYPE PUMP**	Peristaltic	**DEVELOPMENT CONFIRMATION**
DRILLER OR LANGAN	Driller	**MAX PUMP RATE**	1 LPM	
NUMBER OF SURGE CYCLES	NA	**TOTAL VOLUME**	10 gallons	Purged groundwater was no longer turbid.

	ELEVATION	DEPTH (ft)
TOP OF CASING	24.97	0
TOP OF SEAL	24.47	0.5
TOP OF FILTER	10.97	14
TOP OF SCREEN	9.97	15.0
BOTTOM OF BORING	-5.03	30
SCREEN LENGTH		15'
SLOT SIZE		No. 20 Slot; 0.020 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
	12/31/2018	18.9 ft

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
Asphalt	
Fill	
	14
	15.00
Medium Sand	
	30.00

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

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION AND DEVELOPMENT SUMMARY

Well No. MW12

PROJECT		PROJECT NO.	
10-73 Beach 21st Street		170540601	
LOCATION		**ELEVATION AND DATUM**	
Far Rockaway, NY		el. 25 NAVD 88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services, Corp.		12/13/2018	12/13/2018
DRILLING EQUIPMENT		**DRILLER**	
Geoprobe® 7822 DT		Sharohn Dixon	
SIZE AND TYPE OF BIT		**INSPECTOR**	
3-inch Direct Push		Mengxi Tan	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
3"		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	2-inch	Soil Cuttings	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 20 Slot	2-inch	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe® 7822 DT was used to advance the boring to approximately 27 feet bgs. A two-inch (2") PVC monitoring well was installed using 15' of 10 slot (0.010-inch) well screen, and a solid 2" PVC riser. Well screen was installed from approximately 27 to 12 feet bgs with riser from 12 feet bgs to surface. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

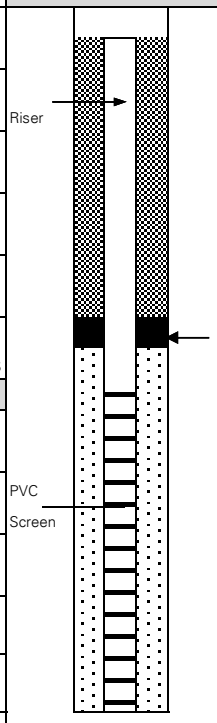
SURGE BLOCK DIAMETER	NA	**TYPE PUMP**	Peristaltic	**DEVELOPMENT CONFIRMATION**
DRILLER OR LANGAN	Driller	**MAX PUMP RATE**	1 LPM	
NUMBER OF SURGE CYCLES	NA	**TOTAL VOLUME**	10 gallons	Purged groundwater was no longer turbid.

	ELEVATION	DEPTH (ft)
TOP OF CASING	25.4	0
TOP OF SEAL	24.9	0.5
TOP OF FILTER	14.4	11
TOP OF SCREEN	13.4	12.0
BOTTOM OF BORING	-1.6	27
SCREEN LENGTH		15'
SLOT SIZE		No. 20 Slot; 0.020 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
6.03	12/31/2018	19.37 ft

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
Asphalt	
Fill	
	11
	12.00
Medium Sand	
	27.00

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

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APPENDIX E

B3 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	**10-73 Beach 21st Street**	**Well No:**	**B-3 (OW)**	**Water Quality Device Model:**	**Horiba**	**Weather:**	Rain	**Sample:**	**B3_122818**
Project Number:	**170540601**	**Well Depth:**	30-foot	**Pine Number:**	**32096**	**Background PID (ppm):**	0.0		
Site Location:	**Far Rockaway, NY**	**Well Diameter:**	2-inch	**Pump Make and Model:**	**Monsoon Pump**	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	**Mengxi Tan**	**Well Screen Interval:**	20-foot bgs	**Pine Number:**	**16773**	**Pump Intake Depth:**	28-foot	**Sample Date:**	12/28/2018
			30-foot bgs	**Tubing Diameter:**	**HDPE 3/8" ID X 1/2" OD**	**Depth to Water Before Purge:**	-	**Sample Time:**	13:08, 13:10

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	Notes color, odor etc.
BEGIN PURGING										
12:06	15.68	7.14	66	0.194	0.0	10.24	-		0.75	
12:11	15.92	6.97	93	0.156	551.00	9.40	-	0.15	1.5	
12:16	15.96	6.81	113	0.140	832.00	8.77	-	0.2	2.5	
12:21	16.26	6.70	129	0.127	262.00	4.13	-	0.2	3.5	
12:26	16.21	6.71	132	0.130	119.00	3.79	-	0.25	4.75	
12:31	16.17	6.70	136	0.127	57.10	3.85	-	0.25	6	
12:36	16.24	6.81	141	0.124	37.20	4.19	-	0.2	7	
12:41	16.17	6.66	144	0.123	19.2	3.90	-	0.2	8	
12:46	16.18	6.68	149	0.122	10.0	4.16	-	0.25	9.25	
12:51	15.06	6.66	150	0.120	0.4	4.28	-	0.25	10.5	

No sheen. No ordor. Depth to water before purge was not taken due to potential PFCs cross contamination.

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

B1 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	**10-73 Beach 21st Street**	**Well No:**	**B-1 (OW)**	**Water Quality Device Model:**	**Horiba**	**Weather:**	Cloudy	**Sample:**	**B1_123118**
Project Number:	**170540601**	**Well Depth:**	30-foot	**Pine Number:**	**32096**	**Background PID (ppm):**	0		
Site Location:	**Far Rockaway, NY**	**Well Diameter:**	2-inch	**Pump Make and Model:**	**Monsoon Pump**	**PID Beneath Inner Cap (ppm):**	45.8		
Sampling Personnel:	**Mengxi Tan**		20-foot bgs	**Pine Number:**	**16773**	**Pump Intake Depth:**	28-foot	**Sample Date:**	12/31/2018
		Well Screen Interval:	30-foot bgs	**Tubing Diameter:**	**HDPE 3/8" ID X 1/2" OD**	**Depth to Water Before Purge:**	-	**Sample Time:**	12:45, 12:50

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
11:58	16.60	7.01	113	4.04	874.0	3.29	-		0.5	No sheen. No ordor. Depth to water before purge was not taken due to potential PFCs cross contamination.
12:03	16.71	7.01	65	3.96	654.00	2.87	-	0.2	1.5	
12:08	17.19	7.06	43	3.82	260.00	1.91	-	0.15	2.25	
12:13	17.26	7.08	37	3.70	59.50	1.91	-	0.15	3	
12:18	17.24	7.10	36	3.58	0.30	1.96	-	0.15	3.75	
12:23	17.25	7.11	37	3.49	0.00	2.08	-	0.2	4.75	
12:28	17.27	7.12	40	3.36	0.00	2.20	-	0.15	5.5	
12:33	17.22	7.12	42	3.30	0.0	2.11	-	0.2	6.5	
12:38	17.26	7.12	44	3.23	0.0	2.19	-	0.15	7.25	
12:43	17.24	7.12	46	3.17	0.0	2.14	-	0.15	8	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

MW-5 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	10-73 Beach 21st Street	Well No:	MW-05	Water Quality Device Model:	Horiba	Weather:	Rain	Sample(s):	MW05_122818
Project Number:	170540601	Well Depth:	30-foot	Pine Number:	32096	Background PID (ppm):	0		
Site Location:	Far Rockaway, NY	Well Diameter:	2-inch	Pump Make and Model:	Monsoon Pump	PID Beneath Inner Cap (ppm):	0.8		
Sampling Personnel:	Bill Bohrer	Well Screen Interval:	15-foot bgs	Pine Number:	16773	Pump Intake Depth:	28-foot	Sample Date:	12/28/2018
	Mengxi Tan		30-foot bgs	Tubing Diameter:	HDPE 3/8" ID X 1/2" OD	Depth to Water Before Purge:	-	Sample Time:	10:15, 10:30

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
9:30	16.35	6.92	73	1.180	0.0	5.72	-		1.5	
9:35	16.62	6.79	36	0.877	912.00	4.65	-	0.25	2.75	
9:40	16.55	6.73	48	0.853	773.00	4.32	-	0.13	3.4	
9:45	16.66	6.70	38	0.788	222.00	4.21	-	0.27	4.75	No sheen. No ordor. Depth to water before purge was not taken due to potential PFCs cross contamination.
9:50	16.62	6.74	34	0.805	72.40	3.90	-	0.25	6	
9:55	16.72	6.76	32	0.783	17.40	3.80	-	0.2	7	
10:00	16.48	6.85	26	0.789	15.30	4.00	-	0.3	8.5	
10:05	16.48	6.83	28	0.808	11.5	3.69	-	0.15	9.25	
10:10	16.63	6.84	29	0.789	0.0	3.53	-	0.2	10.25	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

MW-9 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	10-73 Beach 21st Street	Well No:	MW-09	Water Quality Device Model:	Horiba	Weather:	Sunny	Sample(s):	MW09_122718
Project Number:	170540601	Well Depth:	30-foot	Pine Number:	32096	Background PID (ppm):	0		MW04_122718
Site Location:	Far Rockaway, NY	Well Diameter:	2-inch	Pump Make and Model:	Monsoon Pump	PID Beneath Inner Cap (ppm):	7.2		
Sampling Personnel:	Bill Bohrer	Well Screen Interval:	15-foot bgs	Pine Number:	16773	Pump Intake Depth:	28-foot	Sample Date:	12/27/2018
	Mengxi Tan		30-foot bgs	Tubing Diameter:	HDPE 3/8" ID X 1/2" OD	Depth to Water Before Purge:	-	Sample Time:	13:30, 13:34

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
12:20	16.06	4.04	287	0.00	559.0	14.01	-		1.75	
12:25	16.06	4.04	287	0.00	559.0	14.01	-	0.13	2.4	
12:30							-	0.48		
12:35							-			
12:40							-			
12:45							-			
12:50	18.27	7.07	-3	2.41	22.90	1.49	-	1.3	6.5	
12:55	18.20	7.07	-2	2.40	13.2	1.44	-	0.06	6.8	
13:00	18.07	7.11	-2	2.39	8.7	1.50	-	0.14	7.5	
13:05	17.90	7.12	-1	2.39	7.4	1.44	-	0.1	8	
13:10	17.25	7.13	-1	2.40	8.9	1.52	-	0.1	8.5	
13:15	18.00	7.15	-3	2.40	6.5	1.48	-	0.1	9	
13:20	17.48	7.12	4	2.40	6.0	1.51	-	0.05	9.25	

No sheen. No ordor. No data recorded between 12:30 and 12:45 due to spreadsheet error. Depth to water before purge was not taken due to potential PFCs cross contamination.

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

B-12 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	10-73 Beach 21st Street	Well No:	B-12 (OW)	Water Quality Device Model:	Horiba	Weather:	Cloudy	Sample:	B12_123118
Project Number:	170540601	Well Depth:	30-foot	Pine Number:	32096	Background PID (ppm):	0		
Site Location:	Far Rockaway, NY	Well Diameter:	2-inch	Pump Make and Model:	Monsoon Pump	PID Beneath Inner Cap (ppm):	0.8		
Sampling Personnel:	Mengxi Tan	Well Screen Interval:	20-foot bgs 30-foot bgs	Pine Number:	16773	Pump Intake Depth:	28-foot	Sample Date:	12/31/2018
				Tubing Diameter:	HDPE 3/8" ID X 1/2" OD	Depth to Water Before Purge:	-	Sample Time:	9:55, 10:00

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
8:52	17.13	6.97	68	1.80	0.0	2.95	-		0.75	No sheen. No ordor. Depth to water before purge was not taken due to potential PFCs cross contamination.
8:57	17.41	7.26	-21	1.82	1000.00	1.60	-	0.35	2.5	
9:02	17.17	7.30	-23	1.80	593.00	1.58	-	0.1	3	
9:07	17.36	7.32	-25	1.78	284.00	1.57	-	0.2	4	
9:12	17.28	7.32	-26	1.76	361.00	1.22	-	0.2	5	
9:17	17.25	7.32	-25	1.72	321.00	1.27	-	0.1	5.5	
9:22	17.65	7.33	-21	1.68	834.00	1.59	-	0.15	6.25	
9:27	17.64	7.31	-21	1.69	479.0	1.24	-	0.25	7.5	
9:32	17.62	7.30	-21	1.70	75.3	1.16	-	0.25	8.75	
9:37	17.55	7.29	-21	1.72	81.2	1.11	-	0.2	9.75	
9:42	17.56	7.29	-18	1.73	30.6	1.19	-	0.25	11	
9:47	17.63	7.31	-17	1.71	181.0	1.27	-	0.2	12	
9:52	17.65	7.30	-14	1.72	978.0	1.36	-	0.25	13.25	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

MW-12 Groundwater Sampling Log
Remedial Investigation Report
Beach 21st Street Development
Queens, New York
Langan Project No.: 170540601

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	10-73 Beach 21st Street	Well No:	MW-12	Water Quality Device Model:	Horiba	Weather:	Rain	Sample:	MW12_123118
Project Number:	170540601	Well Depth:	27-foot	Pine Number:	32096	Background PID (ppm):	0		
Site Location:	Far Rockaway, NY	Well Diameter:	2-inch	Pump Make and Model:	Monsoon Pump	PID Beneath Inner Cap (ppm):	7.8		
Sampling Personnel:	Mengxi Tan	Well Screen Interval:	12-foot bgs 27-foot bgs	Pine Number: Tubing Diameter:	16773 HDPE 3/8" ID X 1/2" OD	Pump Intake Depth: Depth to Water Before Purge:	25-foot -	Sample Date: Sample Time:	12/31/2018 15:55, 16:00

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
14:51	17.12	8.13	72	3.17	0.0	5.00	-		0.5	No sheen. No ordor. Depth to water before purge was not taken due to potential PFCs cross contamination.
14:56	17.43	8.01	68	2.85	0.00	3.82	-	0.2	1.5	
15:01	17.79	8.08	61	2.64	771.00	3.69	-	0.2	2.5	
15:06	17.80	8.08	56	2.49	402.00	3.57	-	0.1	3	
15:11	17.80	8.07	54	2.40	216.00	3.34	-	0.1	3.5	
15:16	17.53	8.09	49	2.36	108.00	3.29	-	0.15	4.25	
15:21	17.60	8.06	48	2.29	105.00	3.53	-	0.25	5.5	
15:26	17.81	8.10	45	2.27	85.9	3.06	-	0.1	6	
15:31	17.87	8.07	42	2.26	73.1	2.37	-	0.2	7	
15:36	17.86	8.06	37	2.19	57.8	2.36	-	0.2	8	
15:41	17.83	8.06	36	2.17	51.9	3.44	-	0.15	8.75	
15:46	18.15	7.98	34	2.17	110.0	3.20	-	0.25	10	
15:51	17.92	8.01	30	2.07	85.4	2.27	-	0.3	11.5	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit
11. PFCs = Perfluorinated Compounds

APPENDIX F

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-01

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Mengxi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 46 °F Wind: SSE @1-5 mph Precipitation: None Pressure: 29.69

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of two feet.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2-inch	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	6.75
PURGE FLOW RATE (ML/MIN):	42.45
PID AFTER PURGE (PPM):	0

HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.2%	15.3%
HELIUM TEST IN TUBE (PPM):	0.00	0.00

SAMPLE START TIME:	14:32
SAMPLE STOP TIME:	17:11
TOTAL SAMPLE TIME (MIN):	159
REGULATOR FLOW RATE (L/MIN):	0.042
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	N/A
CAN SERIAL NUMBER:	23799
REGULATOR SERIAL NUMBER:	Y20
CAN START VACUUM PRESS. (" HG):	-29.1
CAN STOP VACUUM PRESS. (" HG):	-3.26

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE		
Top of Seal	2.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-02

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Mengxi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 46 °F Wind: SW @6-11mph Precipitation: None Pressure: 29.76

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of one foot.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	43.370	
PID AFTER PURGE (PPM):	0	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.5%	15.3%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	11:05	
SAMPLE STOP TIME:	13:14	
TOTAL SAMPLE TIME (MIN):	129	
REGULATOR FLOW RATE (L/MIN):	0.0434	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	16973	
REGULATOR SERIAL NUMBER:	Y23	
CAN START VACUUM PRESS. (" HG):	-28.98	
CAN STOP VACUUM PRESS. (" HG):	-3.29	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	1.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-03

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Mengxi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 45 °F Wind: SSE @1-15mph Precipitation: None Pressure: 29.69

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of one foot.

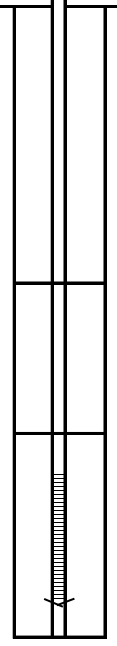
TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20
PURGE FLOW RATE (ML/MIN):	43.780
PID AFTER PURGE (PPM):	1.3

HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.2%	15.3%
HELIUM TEST IN TUBE (PPM):	0.00	0.00

SAMPLE START TIME:	13:48
SAMPLE STOP TIME:	15:42
TOTAL SAMPLE TIME (MIN):	114
REGULATOR FLOW RATE (L/MIN):	0.0438
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	N/A
CAN SERIAL NUMBER:	20757
REGULATOR SERIAL NUMBER:	Y41
CAN START VACUUM PRESS. (" HG):	-26.29
CAN STOP VACUUM PRESS. (" HG):	-3.75

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)



	DEPTH (FEET FROM SURFACE)	**NOTES**
Top of Seal	1.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-04

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Allyson Kritzer	**SAMPLER:** Allyson Kritzer
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 35 °F Wind: ESE @2mph Precipitation: Rain 0.01" Pressure: 30.4

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of one foot.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	39.8	
PID AFTER PURGE (PPM):	0.1	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.8%	16.0%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	10:43	
SAMPLE STOP TIME:	13:05	
TOTAL SAMPLE TIME (MIN):	142	
REGULATOR FLOW RATE (L/MIN):	0.0398	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0.1	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	Y72	
REGULATOR SERIAL NUMBER:	Y17	
CAN START VACUUM PRESS. (" HG):	-29.86	
CAN STOP VACUUM PRESS. (" HG):	-2.91	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE / SURFACE		
Top of Seal	1.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

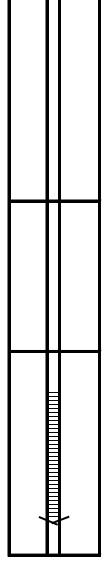
Sample Number: SV-05

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Menxgi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 43 °F Wind: ESE @7 mph Precipitation: None Pressure: 29.75

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of two feet.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	43.4	
PID AFTER PURGE (PPM):	0	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.3%	15.2%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	10:33	
SAMPLE STOP TIME:	12:22	
TOTAL SAMPLE TIME (MIN):	109	
REGULATOR FLOW RATE (L/MIN):	0.0434	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	24163	
REGULATOR SERIAL NUMBER:	3542	
CAN START VACUUM PRESS. (" HG):	-27.04	
CAN STOP VACUUM PRESS. (" HG):	-3.8	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
		
Top of Seal	2.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-07

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Allyson Kritzer	**SAMPLER:** Allyson Kritzer
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 35 °F Wind: ESE @2 mph Precipitation: Rain 0.01" Pressure: 30.4

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of one foot.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	43.9	
PID AFTER PURGE (PPM):	0.2	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	16.0%	15.2%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	11:22	
SAMPLE STOP TIME:	13:29	
TOTAL SAMPLE TIME (MIN):	127	
REGULATOR FLOW RATE (L/MIN):	0.0439	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0.1	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	24111	
REGULATOR SERIAL NUMBER:	3350	
CAN START VACUUM PRESS. (" HG):	-29.3	
CAN STOP VACUUM PRESS. (" HG):	-3.03	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	1.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-08

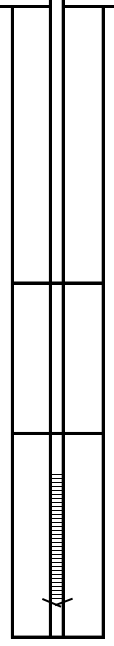
PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/17/2018 **DATE FINISHED:** 12/17/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Mengxi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 46 °F Wind: SSE @1-15 mph Precipitation: None Pressure: 29.69

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of two feet.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	39.3	
PID AFTER PURGE (PPM):	0	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.4%	15.2%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	14:48	
SAMPLE STOP TIME:	17:07	
TOTAL SAMPLE TIME (MIN):	139	
REGULATOR FLOW RATE (L/MIN):	0.0393	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	18312	
REGULATOR SERIAL NUMBER:	Y22	
CAN START VACUUM PRESS. (" HG):	-28.86	
CAN STOP VACUUM PRESS. (" HG):	-2.6	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)



	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	2.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-09

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/14/2018 **DATE FINISHED:** 12/14/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/14/2018 **DATE FINISHED:** 12/14/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Allyson Kritzer	**SAMPLER:** Allyson Kritzerr
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 50 °F Wind: ESE @6 mph Precipitation: None Pressure: 30.47

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of one foot.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	40.4	
PID AFTER PURGE (PPM):	0	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.1%	15.3%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	11:19	
SAMPLE STOP TIME:	13:34	
TOTAL SAMPLE TIME (MIN):	135	
REGULATOR FLOW RATE (L/MIN):	0.0404	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0.1	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	28317	
REGULATOR SERIAL NUMBER:	7270	
CAN START VACUUM PRESS. (" HG):	-20.09	
CAN STOP VACUUM PRESS. (" HG):	-2.28	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	1.00	
Top of Pack	3.00	
Probe Depth	10.00	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-10

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/13/2018 **DATE FINISHED:** 12/13/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Allyson Kritzer	**SAMPLER:** Allyson Kritzerr
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 35 °F Wind: ESE @2 mph Precipitation: None Pressure: 30.4

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of two feet.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20	
PURGE FLOW RATE (ML/MIN):	41.6	
PID AFTER PURGE (PPM):	0	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.0%	16.2%
HELIUM TEST IN TUBE (PPM):	0.00	0.00
SAMPLE START TIME:	9:45	
SAMPLE STOP TIME:	12:03	
TOTAL SAMPLE TIME (MIN):	138	
REGULATOR FLOW RATE (L/MIN):	0.0416	
VOLUME OF SAMPLE (LITERS):	6	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	N/A	
CAN SERIAL NUMBER:	24113	
REGULATOR SERIAL NUMBER:	Y47	
CAN START VACUUM PRESS. (" HG):	-29.53	
CAN STOP VACUUM PRESS. (" HG):	-1.44	

SAMPLE LOCATION SKETCH

See Sample Location Plan

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	2.00	
Top of Pack	3.00	
Probe Depth	10.00	

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-12

PROJECT: 10-37 Beach 21st Street	**PROJECT NO.:** 170540601
LOCATION: Far Rockaway, NY	**SURFACE ELEVATION AND DATUM:** N/A
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services, Corp.	**INSTALLATION DATE STARTED:** 12/14/2018 **DATE FINISHED:** 12/14/2018
INSTALLATION FOREMAN: Sharohn Dixon	**SAMPLE DATE STARTED:** 12/14/2018 **DATE FINISHED:** 12/14/2018
INSTALLATION EQUIPMENT: Geoprobe® 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Mengxi Tan	**SAMPLER:** Mengxi Tan
POTENTIAL SAMPLE INTERFERENCES: N/A	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 50 °F; Wind: ESE @6 mph; Precipitation: None; Pressure: 30.47

METHOD OF INSTALLATION AND PURGING:
AARCO advanced Geoprobe® 7822 DT to 10ft. They then installed the soil vapor point. Top of sand pack is 3 feet below ground surface and top with a bentonite seal of two feet.

TUBING TYPE/DIAMETER: 3/16-inch ID, 1/4-inch OD Teflon-Lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** None
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 2-Inch Polyethylene Probe	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2"	**FILTER PACK MATERIAL (Sand or Glass Beads):** Sand

PURGE VOLUME (L):	24.20
PURGE FLOW RATE (ML/MIN):	40.5
PID AFTER PURGE (PPM):	0

HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	15.3%	15.5%
HELIUM TEST IN TUBE (PPM):	0.00	0.00

SAMPLE START TIME:	11:57
SAMPLE STOP TIME:	13:59
TOTAL SAMPLE TIME (MIN):	122
REGULATOR FLOW RATE (L/MIN):	0.04047
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	N/A
CAN SERIAL NUMBER:	19529
REGULATOR SERIAL NUMBER:	Y24
CAN START VACUUM PRESS. (" HG):	-29.43
CAN STOP VACUUM PRESS. (" HG):	-4.31

SAMPLE LOCATION SKETCH

See Sample Location Plan

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE / SURFACE		
Top of Seal	2.00	
Top of Pack	3.00	
Probe Depth	10.00	

NOTES

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APPENDIX G

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Sherief Saleh, Langan Senior Staff Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: March 14, 2019

Re: Data Usability Summary Report
For 21st Beach Street
Groundwater Samples Collected in December 2018
Langan Project No.: 170540601

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in December 2018 by Langan Engineering and Environmental Services ("Langan") at the Beach 21st Street site ("the Site"). The samples were analyzed by Chemtech Environmental Laboratory (NYSDOH NELAC registration # 11376) and Eurofins Lancaster Laboratories (NYSDOH NELAC registration # 10670) for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), perfluorinated alkyl substances (PFAS), metals, mercury (Hg), hexavalent chromium (CrVI), and cyanide (CN) by the analytical methods listed below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Methods 8270D and 8270D SIM
- Pesticides by SW-846 Methods 8081B
- PCBs by SW-846 Methods 8082A
- Herbicides by SW-846 Methods 8151A
- PFAS by EPA Method 537M
- Metals by SW-846 Method 6010D
- Mercury by SW-846 Method 7470A
- Hexavalent Chromium by SW-846 Method 7196A
- Cyanide by SW-846 Method 9012B

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
J6588	J6588-01	MW09_122718	12/27/2018	PFAS
J6588	J6588-02	DUP03_122718	12/27/2018	PFAS
J6588	J6588-03	FB03_122718	12/27/2018	PFAS
J6591	J6591-01	MW09_122718	12/27/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
J6591	J6591-02	MW09_122718	12/27/2018	Metals, Hg
J6591	J6591-03	TB04_122718	12/27/2018	VOCs
J6591	J6591-04	FB03_122718	12/27/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides
J6591	J6591-05	FB03_122718	12/27/2018	Metals, Hg
J6591	J6591-06	DUP03_122718	12/27/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
J6591	J6591-07	DUP03_122718	12/27/2018	Metals, Hg
J6598	J6598-01	MW05_122818	12/28/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
J6598	J6598-02	B3_122818	12/28/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
J6598	J6598-03	TB05_122818	12/28/2018	VOCs
J6598	J6598-06	MW05_122818	12/28/2018	Metals, Hg
J6598	J6598-07	B3_122818	12/28/2018	Metals, Hg
J6599	J6599-01	MW05_122818	12/28/2018	PFAS
J6599	J6599-02	B3_122818	12/28/2018	PFAS
K1028	K1028-01	B12_123118	12/31/2018	PFAS
K1028	K1028-02	B1_123118	12/31/2018	PFAS
K1028	K1028-03	MW12_123118	12/31/2018	PFAS
K1029	K1029-01	B12_123118	12/31/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
K1029	K1029-02	B12_123118	12/31/2018	Metals, Hg
K1029	K1029-03	B1_123118	12/31/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
K1029	K1029-04	B1_123118	12/31/2018	Metals, Hg
K1029	K1029-05	MW12_123118	12/31/2018	VOCs, SVOCs, Pesticides, PCBs, Herbicides, Metals, Hg
K1029	K1029-06	MW12_123118	12/31/2018	Metals, Hg

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
K1029	K1029-07	TB06_123118	12/31/2018	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-36a, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-37a, "Polychlorinated Biphenyl (PCB) Aroclor Data Validation" (June 2015, Revision 0), USEPA Region II SOP #HW-3b, "ICP-MS Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and trip blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

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

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION:

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
B1_123118	6010D	7439-92-1	Total Lead	U (6.0)
B1_123118	6010D	7439-92-1	Dissolved Lead	U (6.0)
B12_123118	6010D	7439-92-1	Total Lead	U (6.0)
B3_122818	6010D	7440-09-7	Dissolved Potassium	U (1000)
DUP03_122718	6010D	7439-92-1	Total Lead	U (6.0)
FB03_122718	6010D	7440-09-7	Dissolved Potassium	U (1000)
FB03_122718	6010D	7440-23-5	Dissolved Sodium	U (1000)
MW09_122718	6010D	7439-92-1	Total Lead	U (6.0)
TB06_123118	8260C	75-27-4	Bromodichloromethane	UJ
TB06_123118	8260C	75-25-2	Bromoform	UJ
TB06_123118	8260C	124-48-1	Dibromochloromethane	UJ
TB06_123118	8260C	10061-02-6	Trans-1,3-Dichloropropene	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. The section below describes the major deficiencies that were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

K1029:

The CCV analyzed on 1/3/2019 at 10:15 exhibited %Ds above the control limit for bromodichloromethane (21.12%), trans-1,3-dichloropropene (28.68%), dibromochloromethane

(31.27%), and bromoform (34.66%). The associated results in sample TB06_123118 are qualified as "UJ" based on potential indeterminate bias.

Total and Dissolved Metals by SW-846 Method 6010D:

J6591:

The MB for batch PB116124 exhibited a detection of total lead (4.25 ug/l). The associated results in sample MW09_122718 and DUP03_122718 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch PB116125 exhibited a detection of dissolved sodium (135 ug/l) and dissolved potassium (152 ug/l). The associated results in sample FB03_122718 are qualified as "U" at the reporting limit based on potential blank contamination.

J6598:

The MB for batch PB116125 exhibited a detection of dissolved potassium (152 ug/l). The associated results in sample B3_122818 are qualified as "U" at the reporting limit based on potential blank contamination.

K1029:

The MB for batch PB116144 exhibited a detection of total lead (3.2 ug/l). The associated results in sample B12_123118 and B1_123118 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch PB116167 exhibited a detection of dissolved lead (3.53 ug/l). The associated results in sample B1_123118 are qualified as "U" at the reporting limit based on potential blank contamination.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

J6598:

The LCS/LCSD for batch VN0102W exhibited percent recoveries above the UCL for 1,1,2,2-tetrachloroethane (132%, 133%). The associated results are non-detections. No qualification is necessary.

SVOCs by SW-846 Methods 8270D and 8270DSIM:

J6598:

The LCS/LCSD for batch PB116088 exhibited percent recoveries above the UCL for m&p-methylphenol (94%, 94%). The associated results are non-detections. No qualification is necessary.

K1029:

The LCS for batch PB116158 exhibited percent recoveries above the UCL for m&p-methylphenol (95%) and 2-methylphenol (o-cresol) (96%). The associated results are non-detections. No qualification is necessary.

The sample B1_123118 exhibited percent recoveries above the UCL for the surrogate nitrobenzene-d5 (143%). The associated results are non-detections. No qualification is necessary.

The sample MW12_123118 exhibited a percent recovery above the UCL for the surrogate nitrobenzene-d5 (156%). The associated results are non-detections. No qualification is necessary.

The samples B12_123118, B1_123118, and MW12_123118 did not recover (i.e., 0%) for the surrogates 2-methylnaphthalene-d10 and fluoranthene-d10. The samples were analyzed for 1,4-dioxane under 8270D SIM, but were prepared as 8270D extracts. Therefore, the SIM surrogates were not present in the extracts.

PCBs by SW-846 Methods 8082A:

J6591:

The sample MW09_122718 exhibited a percent recovery above the UCL for the surrogate tetrachloro-m-xylene (146%). The associated results are non-detections. No qualification is necessary.

The sample FB03_122718 exhibited a percent recovery above the UCL for the surrogate tetrachloro-m-xylene (140%). The associated results are non-detections. No qualification is necessary.

The sample DUP03_122718 exhibited a percent recovery above the UCL for the surrogate tetrachloro-m-xylene (148%). The associated results are non-detections. No qualification is necessary.

K1029:

The sample B1_123118 exhibited a percent recovery above the UCL for the surrogate tetrachloro-m-xylene (165%). The associated results are non-detections. No qualification is necessary.

The sample MW12_123118 exhibited a percent recovery above the UCL for the surrogate tetrachloro-m-xylene (141%). The associated results are non-detections. No qualification is necessary.

PFAS by EPA Method 537M:

J6588:

The sample MW09_122718 exhibited percent recoveries above the UCL for the surrogate sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2) (170%) and sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2) (249%). The associated results are non-detections. No qualification is necessary.

The sample DUP03_122718 exhibited a percent recovery above the UCL for the surrogate sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2) (217%). The associated results are non-detections. No qualification is necessary.

Total and Dissolved Metals by SW-846 Method 6010D:

J6591:

The MB for batch PB116124 exhibited a detection of potassium (75.8 ug/l). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch PB116125 exhibited a detection of lead (2 ug/l). The associated results are non-detections. No qualification is necessary.

J6598:

The MB for batch PB116124 exhibited a detection of potassium (75.8 ug/l). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch PB116124 exhibited a detection of lead (4.25 ug/l). The associated results are non-detections. No qualification is necessary.

The MB for batch PB116125 exhibited a detection of sodium (135 ug/l). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch PB116125 exhibited a detection of lead (2 ug/l). The associated results are non-detections. No qualification is necessary.

K1029:

The MS/MSD for batch PB116167 exhibited a percent recovery above the UCL for sodium (212%, 151%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

COMMENTS:

Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for groundwater.

- DUP03_122718 and MW09_122718: All analytes met the precision criteria.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Sherief Saleh, Langan Senior Staff Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: April 1, 2019

Re: Data Usability Summary Report
For 21st Beach Street
Soil Samples Collected in December 2018 and March 2019
Langan Project No.: 170540601

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in December 2018 and March 2019 by Langan Engineering and Environmental Services ("Langan") at the Beach 21st Street site ("the site"). The samples were analyzed by Chemtech Environmental Laboratory (NYSDOH NELAC registration # 11376) and York Analytical Laboratories, Inc. (NYSDOH NELAC registration # 10854) for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), herbicides, polychlorinated biphenyls (PCBs), pesticides, metals, mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), and percent solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D
- Herbicides by SW-846 Method 8151A
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6010D
- Hg by SW-846 Method 7471B
- CN by SW-846 Method 9012B
- CrVI by SW-846 Method 7196A
- %S by Standard Method 2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
J6371	J6371-01	FB01_121118	12/11/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
J6371	J6371-02	EB07_1-2	12/11/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6371	J6371-03	EB07_11-12	12/11/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6371	J6371-04	EB04_0-2	12/11/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6371	J6371-05	EB04_14-16	12/11/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6397	J6397-01	EB10_1.5-2.5	12/12/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6397	J6397-02	EB10_12-14	12/12/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6397	J6397-03	EB11_0-2	12/12/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6397	J6397-04	EB11_12-14	12/12/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6397	J6397-05	SODUP01_121218	12/12/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-01	EB12_1.5-2.5	12/13/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-02	EB12_12-14	12/13/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-03	EB09_1.5-2.5	12/13/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-04	EB09_12-14	12/13/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-05	SODUP02_121318	12/13/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6424	J6424-06	TB01_121318	12/13/2018	VOCs
J6445	J6445-01	EB06_1-3	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-02	EB06_12-14	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-03	EB02_1.5-3.5	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-04	EB02_6-8	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
J6445	J6445-05	EB02_12-14	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-06	EB05_1.5-3.5	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-07	EB05_12-14	12/14/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6445	J6445-08	TB02_121418	12/14/2018	VOCs
J6465	J6465-01	EB01_12-14	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-02	EB01_0-2	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-03	EB03_12-14	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-04	EB03_1.5-3.5	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-05	EB08_12-14	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-06	EB08_1.5-3.5	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI,%S
J6465	J6465-07	TB03_121718	12/17/2018	VOCs
J6465	J6465-10	SOFB02_121718	12/17/2018	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-01	EB15_0-2	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-02	EB15_8-10	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-03	EB18_0-2	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-04	EB18_6-8	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-07	EB21_0-2	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-08	EB21_4-6	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-09	EB22_0-2	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-10	EB22_5-7	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0165	19C0165-11	SODUP04_030519	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
19C0165	19C0165-12	TB07_030519	3/5/2019	VOCs
19C0165	19C0165-13	SOFB04_030519	3/5/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-01	EB13_0-2	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-02	EB13_6-8	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-03	EB14_0-2	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-04	EB14_6-8	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-05	EB16_0-2	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-06	EB16_4-6	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-07	EB17_0-2	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-08	EB17_3-5	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-09	EB23_0-2	3/13/2019	VOCs, SVOCs, Herbicides, PCBs, Pesticides, Metals, Hg, CN, CrVI
19C0494	19C0494-10	TB08_031319	3/13/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-17, "Validating Chlorinated Herbicides" (December 2010, Revision 3.1), USEPA Region II SOP #HW-37A, "Polychlorinated Biphenyl (PCB) Aroclor Data Validation" (June 2015, Revision 0), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic

Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB01_0-2	SW8260C	71-55-6	1,1,1-Trichloroethane	R
EB01_0-2	SW8260C	75-34-3	1,1-Dichloroethane	R
EB01_0-2	SW8260C	75-35-4	1,1-Dichloroethene	R
EB01_0-2	SW8260C	95-63-6	1,2,4-Trimethylbenzene	R
EB01_0-2	SW8260C	95-50-1	1,2-Dichlorobenzene	R
EB01_0-2	SW8260C	107-06-2	1,2-Dichloroethane	R
EB01_0-2	SW8260C	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	R
EB01_0-2	SW8260C	541-73-1	1,3-Dichlorobenzene	R
EB01_0-2	SW8260C	106-46-7	1,4-Dichlorobenzene	R
EB01_0-2	SW8260C	67-64-1	Acetone	R
EB01_0-2	SW8081B	5103-71-9	Alpha Chlordane	J
EB01_0-2	SW6010B	7440-36-0	Antimony	UJ
EB01_0-2	SW8260C	71-43-2	Benzene	R
EB01_0-2	SW8260C	56-23-5	Carbon Tetrachloride	R
EB01_0-2	SW8260C	108-90-7	Chlorobenzene	R
EB01_0-2	SW8260C	67-66-3	Chloroform	R
EB01_0-2	SW8260C	156-59-2	Cis-1,2-Dichloroethylene	R
EB01_0-2	SW8260C	100-41-4	Ethylbenzene	R
EB01_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	R
EB01_0-2	SW8260C	75-09-2	Methylene Chloride	R
EB01_0-2	SW8260C	104-51-8	n-Butylbenzene	R
EB01_0-2	SW8260C	103-65-1	n-Propylbenzene	R
EB01_0-2	SW8260C	135-98-8	Sec-Butylbenzene	R
EB01_0-2	SW6010B	7440-23-5	Sodium	J
EB01_0-2	SW8260C	98-06-6	T-Butylbenzene	R
EB01_0-2	SW8260C	1634-04-4	Tert-Butyl Methyl Ether	R
EB01_0-2	SW8260C	127-18-4	Tetrachloroethene (PCE)	R
EB01_0-2	SW8260C	108-88-3	Toluene	R
EB01_0-2	SW8260C	1330-20-7	Total Xylenes	R
EB01_0-2	SW8260C	156-60-5	Trans-1,2-Dichloroethene	R

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB01_0-2	SW8260C	79-01-6	Trichloroethene (TCE)	R
EB01_0-2	SW8260C	75-01-4	Vinyl Chloride	R
EB01_12-14	SW6010B	7440-36-0	Antimony	UJ
EB01_12-14	SW8260C	75-09-2	Methylene Chloride	U (5.2)
EB01_12-14	SW8082	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
EB01_12-14	SW8082	11104-28-2	PCB-1221 (Aroclor 1221)	UJ
EB01_12-14	SW8082	11141-16-5	PCB-1232 (Aroclor 1232)	UJ
EB01_12-14	SW8082	53469-21-9	PCB-1242 (Aroclor 1242)	UJ
EB01_12-14	SW8082	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
EB01_12-14	SW8082	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
EB01_12-14	SW8082	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
EB01_12-14	SW8082	37324-23-5	PCB-1262 (Aroclor 1262)	UJ
EB01_12-14	SW8082	11100-14-4	PCB-1268 (Aroclor 1268)	UJ
EB01_12-14	SW6010B	7440-23-5	Sodium	J
EB02_1.5-3.5	SW8260C	71-55-6	1,1,1-Trichloroethane	R
EB02_1.5-3.5	SW8260C	75-34-3	1,1-Dichloroethane	R
EB02_1.5-3.5	SW8260C	75-35-4	1,1-Dichloroethene	R
EB02_1.5-3.5	SW8260C	95-63-6	1,2,4-Trimethylbenzene	R
EB02_1.5-3.5	SW8260C	95-50-1	1,2-Dichlorobenzene	R
EB02_1.5-3.5	SW8260C	107-06-2	1,2-Dichloroethane	R
EB02_1.5-3.5	SW8260C	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	R
EB02_1.5-3.5	SW8260C	541-73-1	1,3-Dichlorobenzene	R
EB02_1.5-3.5	SW8260C	106-46-7	1,4-Dichlorobenzene	R
EB02_1.5-3.5	SW8260C	67-64-1	Acetone	J
EB02_1.5-3.5	SW6010D	7429-90-5	Aluminum	J
EB02_1.5-3.5	SW8260C	71-43-2	Benzene	R
EB02_1.5-3.5	SW8260C	56-23-5	Carbon Tetrachloride	R
EB02_1.5-3.5	SW8260C	108-90-7	Chlorobenzene	R
EB02_1.5-3.5	SW8260C	67-66-3	Chloroform	R
EB02_1.5-3.5	SW8260C	156-59-2	Cis-1,2-Dichloroethylene	R
EB02_1.5-3.5	SW8260C	100-41-4	Ethylbenzene	R

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB02_1.5-3.5	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	R
EB02_1.5-3.5	SW8260C	75-09-2	Methylene Chloride	J
EB02_1.5-3.5	SW8260C	104-51-8	n-Butylbenzene	R
EB02_1.5-3.5	SW8260C	103-65-1	n-Propylbenzene	R
EB02_1.5-3.5	SW8260C	135-98-8	Sec-Butylbenzene	R
EB02_1.5-3.5	SW8260C	98-06-6	T-Butylbenzene	R
EB02_1.5-3.5	SW8260C	1634-04-4	Tert-Butyl Methyl Ether	R
EB02_1.5-3.5	SW8260C	127-18-4	Tetrachloroethene (PCE)	R
EB02_1.5-3.5	SW8260C	108-88-3	Toluene	J
EB02_1.5-3.5	SW8260C	1330-20-7	Total Xylenes	R
EB02_1.5-3.5	SW8260C	156-60-5	Trans-1,2-Dichloroethene	R
EB02_1.5-3.5	SW8260C	79-01-6	Trichloroethene (TCE)	R
EB02_1.5-3.5	SW8260C	75-01-4	Vinyl Chloride	R
EB02_12-14	SW6010D	7429-90-5	Aluminum	J
EB02_6-8	SW8260C	71-55-6	1,1,1-Trichloroethane	R
EB02_6-8	SW8260C	75-34-3	1,1-Dichloroethane	R
EB02_6-8	SW8260C	75-35-4	1,1-Dichloroethene	R
EB02_6-8	SW8260C	95-63-6	1,2,4-Trimethylbenzene	R
EB02_6-8	SW8260C	95-50-1	1,2-Dichlorobenzene	R
EB02_6-8	SW8260C	107-06-2	1,2-Dichloroethane	R
EB02_6-8	SW8260C	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	R
EB02_6-8	SW8260C	541-73-1	1,3-Dichlorobenzene	R
EB02_6-8	SW8260C	106-46-7	1,4-Dichlorobenzene	R
EB02_6-8	SW8260C	67-64-1	Acetone	R
EB02_6-8	SW6010D	7429-90-5	Aluminum	J
EB02_6-8	SW8260C	71-43-2	Benzene	R
EB02_6-8	SW8260C	56-23-5	Carbon Tetrachloride	R
EB02_6-8	SW8260C	108-90-7	Chlorobenzene	R
EB02_6-8	SW8260C	67-66-3	Chloroform	R
EB02_6-8	SW8260C	156-59-2	Cis-1,2-Dichloroethylene	R
EB02_6-8	SW8260C	100-41-4	Ethylbenzene	R

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB02_6-8	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	R
EB02_6-8	SW8260C	75-09-2	Methylene Chloride	R
EB02_6-8	SW8260C	104-51-8	n-Butylbenzene	R
EB02_6-8	SW8260C	103-65-1	n-Propylbenzene	R
EB02_6-8	SW8260C	135-98-8	Sec-Butylbenzene	R
EB02_6-8	SW8260C	98-06-6	T-Butylbenzene	R
EB02_6-8	SW8260C	1634-04-4	Tert-Butyl Methyl Ether	R
EB02_6-8	SW8260C	127-18-4	Tetrachloroethene (PCE)	R
EB02_6-8	SW8260C	108-88-3	Toluene	R
EB02_6-8	SW8260C	1330-20-7	Total Xylenes	R
EB02_6-8	SW8260C	156-60-5	Trans-1,2-Dichloroethene	R
EB02_6-8	SW8260C	79-01-6	Trichloroethene (TCE)	R
EB02_6-8	SW8260C	75-01-4	Vinyl Chloride	R
EB03_1.5-3.5	SW6010B	7440-36-0	Antimony	J
EB03_1.5-3.5	SW8260C	75-09-2	Methylene Chloride	U (11.3)
EB03_1.5-3.5	SW6010B	7440-23-5	Sodium	J
EB03_12-14	SW6010B	7440-36-0	Antimony	UJ
EB03_12-14	SW8260C	75-09-2	Methylene Chloride	U (17.8)
EB03_12-14	SW6010B	7440-23-5	Sodium	J
EB04_0-2	SW8081B	72-54-8	4,4'-DDD	J
EB04_0-2	SW9012B	57-12-5	Cyanide	J
EB04_14-16	SW9012B	57-12-5	Cyanide	J
EB04_14-16	SW6010B	7439-92-1	Lead	U (1.03)
EB05_1.5-3.5	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
EB05_1.5-3.5	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
EB05_1.5-3.5	SW8260C	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	UJ
EB05_1.5-3.5	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
EB05_1.5-3.5	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
EB05_1.5-3.5	SW6010D	7429-90-5	Aluminum	J
EB05_1.5-3.5	SW8260C	104-51-8	n-Butylbenzene	UJ
EB05_1.5-3.5	SW8260C	103-65-1	n-Propylbenzene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB05_1.5-3.5	SW8260C	135-98-8	Sec-Butylbenzene	UJ
EB05_1.5-3.5	SW8260C	98-06-6	T-Butylbenzene	UJ
EB05_12-14	SW6010D	7429-90-5	Aluminum	J
EB06_12-14	SW6010D	7429-90-5	Aluminum	J
EB06_1-3	SW6010D	7429-90-5	Aluminum	J
EB06_1-3	SW8082	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
EB06_1-3	SW8082	11104-28-2	PCB-1221 (Aroclor 1221)	UJ
EB06_1-3	SW8082	11141-16-5	PCB-1232 (Aroclor 1232)	UJ
EB06_1-3	SW8082	53469-21-9	PCB-1242 (Aroclor 1242)	UJ
EB06_1-3	SW8082	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
EB06_1-3	SW8082	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
EB06_1-3	SW8082	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
EB06_1-3	SW8082	37324-23-5	PCB-1262 (Aroclor 1262)	UJ
EB06_1-3	SW8082	11100-14-4	PCB-1268 (Aroclor 1268)	UJ
EB07_11-12	SW9012B	57-12-5	Cyanide	J
EB07_11-12	SW6010B	7439-92-1	Lead	U (1.42)
EB07_1-2	SW8081B	72-54-8	4,4'-DDD	J
EB07_1-2	SW8081B	72-55-9	4,4'-DDE	J
EB07_1-2	SW8081B	50-29-3	4,4'-DDT	J
EB07_1-2	SW8081B	5103-71-9	Alpha Chlordane	J
EB07_1-2	SW9012B	57-12-5	Cyanide	J
EB08_1.5-3.5	SW8081B	72-55-9	4,4'-DDE	J
EB08_1.5-3.5	SW8081B	50-29-3	4,4'-DDT	J
EB08_1.5-3.5	SW8081B	5103-71-9	Alpha Chlordane	J
EB08_1.5-3.5	SW6010B	7440-36-0	Antimony	UJ
EB08_1.5-3.5	SW8081B	76-44-8	ugptachlor	J
EB08_1.5-3.5	SW8260C	75-09-2	Methylene Chloride	U (15.9)
EB08_1.5-3.5	SW6010B	7440-23-5	Sodium	J
EB08_12-14	SW6010B	7440-36-0	Antimony	UJ
EB08_12-14	SW8260C	75-09-2	Methylene Chloride	U (6.3)
EB08_12-14	SW8082	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
EB08_12-14	SW8082	11104-28-2	PCB-1221 (Aroclor 1221)	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB08_12-14	SW8082	11141-16-5	PCB-1232 (Aroclor 1232)	UJ
EB08_12-14	SW8082	53469-21-9	PCB-1242 (Aroclor 1242)	UJ
EB08_12-14	SW8082	12672-29-6	PCB-1248 (Aroclor 1248)	UJ
EB08_12-14	SW8082	11097-69-1	PCB-1254 (Aroclor 1254)	UJ
EB08_12-14	SW8082	11096-82-5	PCB-1260 (Aroclor 1260)	UJ
EB08_12-14	SW8082	37324-23-5	PCB-1262 (Aroclor 1262)	UJ
EB08_12-14	SW8082	11100-14-4	PCB-1268 (Aroclor 1268)	UJ
EB08_12-14	SW6010B	7440-23-5	Sodium	J
EB09_1.5-2.5	SW6010D	7440-36-0	Antimony	UJ
EB09_12-14	SW6010D	7440-36-0	Antimony	UJ
EB10_1.5-2.5	SW6010D	7440-36-0	Antimony	UJ
EB10_1.5-2.5	SW6010D	7439-95-4	Magnesium	J
EB10_1.5-2.5	SW6010D	7439-96-5	Manganese	J
EB10_12-14	SW6010D	7429-90-5	Aluminum	J
EB10_12-14	SW6010D	7440-36-0	Antimony	UJ
EB10_12-14	SW6010D	7440-47-3	Chromium, Total	J
EB10_12-14	SW6010D	7439-95-4	Magnesium	J
EB10_12-14	SW6010D	7439-96-5	Manganese	J
EB11_0-2	SW6010D	7440-36-0	Antimony	UJ
EB11_0-2	SW6010D	7439-95-4	Magnesium	J
EB11_0-2	SW6010D	7439-96-5	Manganese	J
EB11_12-14	SW6010D	7440-36-0	Antimony	UJ
EB11_12-14	SW6010D	7439-95-4	Magnesium	J
EB11_12-14	SW6010D	7439-96-5	Manganese	J
EB12_1.5-2.5	SW6010D	7440-36-0	Antimony	UJ
EB12_12-14	SW6010D	7440-36-0	Antimony	UJ
EB12_12-14	SW6010D	7439-92-1	Lead	J
FB01_121118	SW9012B	57-12-5	Cyanide	J
SODUP01_121218	SW6010D	7429-90-5	Aluminum	J
SODUP01_121218	SW6010D	7440-36-0	Antimony	UJ
SODUP01_121218	SW6010D	7440-47-3	Chromium, Total	J
SODUP01_121218	SW6010D	7439-95-4	Magnesium	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SODUP01_121218	SW6010D	7439-96-5	Manganese	J
SODUP02_121318	SW6010D	7440-36-0	Antimony	UJ
SODUP02_121318	SW6010D	7439-92-1	Lead	J
SOFB02_121718	SW8082	12674-11-2	PCB-1016 (Aroclor 1016)	UJ
EB15_0-2	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB15_0-2	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB15_0-2	SW8260C	67-64-1	Acetone	J
EB15_0-2	SW6010B	7440-39-3	Barium	J
EB15_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB15_0-2	SW8270D	92-87-5	Benzidine	UJ
EB15_0-2	SW8270D	50-32-8	Benzo(a)Pyrene	J
EB15_0-2	SW8270D	65-85-0	Benzoic Acid	UJ
EB15_0-2	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB15_0-2	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB15_0-2	SW8260C	74-83-9	Bromomethane	UJ
EB15_0-2	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB15_0-2	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB15_0-2	SW8081B	5566-34-7	Gamma-Chlordane	J
EB15_0-2	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB15_0-2	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB15_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB15_0-2	SW8260C	75-09-2	Methylene Chloride	UJ
EB15_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB15_0-2	SW6010B	7440-23-5	Sodium	J
EB15_0-2	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB15_8-10	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB15_8-10	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB15_8-10	SW8260C	67-64-1	Acetone	J
EB15_8-10	SW6010B	7440-39-3	Barium	J
EB15_8-10	SW8270D	100-52-7	Benzaldehyde	J
EB15_8-10	SW8270D	92-87-5	Benzidine	UJ
EB15_8-10	SW8270D	50-32-8	Benzo(a)Pyrene	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB15_8-10	SW8270D	65-85-0	Benzoic Acid	UJ
EB15_8-10	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB15_8-10	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB15_8-10	SW8260C	74-83-9	Bromomethane	UJ
EB15_8-10	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB15_8-10	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB15_8-10	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB15_8-10	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB15_8-10	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB15_8-10	SW8260C	75-09-2	Methylene Chloride	J
EB15_8-10	SW8270D	87-86-5	Pentachlorophenol	UJ
EB15_8-10	SW6010B	7440-23-5	Sodium	J
EB15_8-10	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB18_0-2	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB18_0-2	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB18_0-2	SW8260C	67-64-1	Acetone	J
EB18_0-2	SW6010B	7440-39-3	Barium	J
EB18_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB18_0-2	SW8270D	92-87-5	Benzidine	UJ
EB18_0-2	SW8270D	65-85-0	Benzoic Acid	UJ
EB18_0-2	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB18_0-2	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB18_0-2	SW8260C	74-83-9	Bromomethane	UJ
EB18_0-2	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB18_0-2	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB18_0-2	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB18_0-2	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB18_0-2	SW8260C	75-09-2	Methylene Chloride	J
EB18_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB18_0-2	SW6010B	7440-23-5	Sodium	J
EB18_0-2	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB18_0-2	SW8270D	50-32-8	Benzo(a)Pyrene	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB18_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB18_6-8	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB18_6-8	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB18_6-8	SW8260C	67-64-1	Acetone	J
EB18_6-8	SW6010B	7440-39-3	Barium	J
EB18_6-8	SW8270D	100-52-7	Benzaldehyde	UJ
EB18_6-8	SW8270D	92-87-5	Benzidine	UJ
EB18_6-8	SW8270D	50-32-8	Benzo(a)Pyrene	J
EB18_6-8	SW8270D	65-85-0	Benzoic Acid	UJ
EB18_6-8	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB18_6-8	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB18_6-8	SW8260C	74-83-9	Bromomethane	UJ
EB18_6-8	SW6010B	7440-43-9	Cadmium	J
EB18_6-8	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB18_6-8	SW6010B	7440-50-8	Copper	J
EB18_6-8	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB18_6-8	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB18_6-8	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB18_6-8	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB18_6-8	SW8260C	75-09-2	Methylene Chloride	UJ
EB18_6-8	SW8270D	87-86-5	Pentachlorophenol	UJ
EB18_6-8	SW6010B	7440-23-5	Sodium	J
EB18_6-8	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB21_0-2	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB21_0-2	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB21_0-2	SW8260C	67-64-1	Acetone	J
EB21_0-2	SW6010B	7440-39-3	Barium	J
EB21_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB21_0-2	SW8270D	92-87-5	Benzidine	UJ
EB21_0-2	SW8270D	65-85-0	Benzoic Acid	UJ
EB21_0-2	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB21_0-2	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB21_0-2	SW8260C	74-83-9	Bromomethane	UJ
EB21_0-2	SW8081B	57-74-9	Chlordane	J
EB21_0-2	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB21_0-2	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB21_0-2	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB21_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB21_0-2	SW8260C	75-09-2	Methylene Chloride	J
EB21_0-2	SW6010B	7440-23-5	Sodium	J
EB21_0-2	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB21_4-6	SW8270D	122-66-7	1,2-Diphenylhydrazine	UJ
EB21_4-6	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB21_4-6	SW8270D	88-75-5	2-Nitrophenol	UJ
EB21_4-6	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB21_4-6	SW8270D	100-02-7	4-Nitrophenol	UJ
EB21_4-6	SW8260C	67-64-1	Acetone	J
EB21_4-6	SW6010B	7440-39-3	Barium	J
EB21_4-6	SW8270D	100-52-7	Benzaldehyde	UJ
EB21_4-6	SW8270D	92-87-5	Benzidine	UJ
EB21_4-6	SW8270D	65-85-0	Benzoic Acid	UJ
EB21_4-6	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB21_4-6	SW8260C	74-83-9	Bromomethane	UJ
EB21_4-6	SW8081B	57-74-9	Chlordane	J
EB21_4-6	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB21_4-6	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB21_4-6	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB21_4-6	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB21_4-6	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB21_4-6	SW8260C	75-09-2	Methylene Chloride	J
EB21_4-6	SW8270D	87-86-5	Pentachlorophenol	UJ
EB21_4-6	SW6010B	7440-23-5	Sodium	J
EB21_4-6	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB22_0-2	SW8270D	51-28-5	2,4-Dinitrophenol	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB22_0-2	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB22_0-2	SW8260C	67-64-1	Acetone	J
EB22_0-2	SW6010B	7440-39-3	Barium	J
EB22_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB22_0-2	SW8270D	92-87-5	Benzidine	UJ
EB22_0-2	SW8270D	65-85-0	Benzoic Acid	UJ
EB22_0-2	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB22_0-2	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB22_0-2	SW8260C	74-83-9	Bromomethane	UJ
EB22_0-2	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB22_0-2	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB22_0-2	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB22_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB22_0-2	SW8260C	75-09-2	Methylene Chloride	J
EB22_0-2	SW6010B	7440-23-5	Sodium	J
EB22_0-2	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB22_5-7	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
EB22_5-7	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
EB22_5-7	SW8260C	67-64-1	Acetone	J
EB22_5-7	SW6010B	7429-90-5	Aluminum	J
EB22_5-7	SW6010B	7440-38-2	Arsenic	J
EB22_5-7	SW6010B	7440-39-3	Barium	J
EB22_5-7	SW8270D	100-52-7	Benzaldehyde	UJ
EB22_5-7	SW8270D	92-87-5	Benzidine	UJ
EB22_5-7	SW8270D	65-85-0	Benzoic Acid	UJ
EB22_5-7	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
EB22_5-7	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
EB22_5-7	SW6010B	7440-70-2	Calcium	J
EB22_5-7	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
EB22_5-7	SW6010B	7440-47-3	Chromium, Total	J
EB22_5-7	SW6010B	7440-48-4	Cobalt	J
EB22_5-7	SW6010B	7440-50-8	Copper	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB22_5-7	SW9010	57-12-5	Cyanide	J
EB22_5-7	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
EB22_5-7	SW8270D	118-74-1	Hexachlorobenzene	UJ
EB22_5-7	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
EB22_5-7	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB22_5-7	SW6010B	7439-89-6	Iron	J
EB22_5-7	SW6010B	7439-92-1	Lead	J
EB22_5-7	SW6010B	7439-95-4	Magnesium	J
EB22_5-7	SW6010B	7439-96-5	Manganese	J
EB22_5-7	SW6010B	7440-02-0	Nickel	J
EB22_5-7	SW8270D	87-86-5	Pentachlorophenol	UJ
EB22_5-7	SW8270D	85-01-8	Phenanthrene	J
EB22_5-7	SW6010B	9/7/7440	Potassium	J
EB22_5-7	SW6010B	7440-23-5	Sodium	J
EB22_5-7	SW6010B	7440-62-2	Vanadium	J
EB22_5-7	SW6010B	7440-66-6	Zinc	J
EB22_5-7	SW8270D	50-32-8	Benzo(a)Pyrene	J
SODUP04_030519	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SODUP04_030519	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SODUP04_030519	SW8260C	67-64-1	Acetone	J
SODUP04_030519	SW6010B	7440-39-3	Barium	J
SODUP04_030519	SW8270D	100-52-7	Benzaldehyde	UJ
SODUP04_030519	SW8270D	92-87-5	Benzidine	UJ
SODUP04_030519	SW8270D	65-85-0	Benzoic Acid	UJ
SODUP04_030519	SW8270D	85-68-7	Benzyl Butyl Phthalate	UJ
SODUP04_030519	SW8270D	117-81-7	Bis(2-Ethylhexyl) Phthalate	UJ
SODUP04_030519	SW8260C	74-83-9	Bromomethane	UJ
SODUP04_030519	SW6010B	7440-43-9	Cadmium	UJ
SODUP04_030519	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
SODUP04_030519	SW6010B	7440-50-8	Copper	J
SODUP04_030519	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SODUP04_030519	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SODUP04_030519	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
SODUP04_030519	SW8260C	75-09-2	Methylene Chloride	J
SODUP04_030519	SW6010B	7440-23-5	Sodium	J
SODUP04_030519	SW8260C	75-69-4	Trichlorofluoromethane	UJ
TB07_030519	SW8260C	96-12-8	1,2-Dibromo-3-Chloropropane	UJ
TB07_030519	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
TB07_030519	SW8260C	74-83-9	Bromomethane	UJ
TB07_030519	SW8260C	75-00-3	Chloroethane	UJ
TB07_030519	SW8260C	74-87-3	Chloromethane	UJ
TB07_030519	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
TB07_030519	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SOFB04_030519	SW8260C	96-12-8	1,2-Dibromo-3-Chloropropane	UJ
SOFB04_030519	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
SOFB04_030519	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SOFB04_030519	SW8270D	534-52-1	4,6-Dinitro-2-Methylphenol	UJ
SOFB04_030519	SW8270D	100-52-7	Benzaldehyde	UJ
SOFB04_030519	SW8270D	92-87-5	Benzidine	UJ
SOFB04_030519	SW8270D	65-85-0	Benzoic Acid	UJ
SOFB04_030519	SW8260C	74-83-9	Bromomethane	UJ
SOFB04_030519	SW8260C	75-00-3	Chloroethane	UJ
SOFB04_030519	SW8260C	74-87-3	Chloromethane	J
SOFB04_030519	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SOFB04_030519	SW8260C	75-65-0	Tert-Butyl Alcohol	UJ
SOFB04_030519	SW8260C	75-69-4	Trichlorofluoromethane	UJ
EB13_0-2	SW8260C	591-78-6	2-Hexanone	UJ
EB13_0-2	SW8260C	67-64-1	Acetone	J
EB13_0-2	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB13_0-2	SW8270D	1912-24-9	Atrazine	UJ
EB13_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB13_0-2	SW8270D	92-87-5	Benzidine	UJ
EB13_0-2	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB13_0-2	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB13_0-2	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB13_0-2	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB13_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB13_0-2	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB13_0-2	SW8270D	78-59-1	Isophorone	UJ
EB13_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB13_0-2	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB13_0-2	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB13_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB13_6-8	SW8260C	591-78-6	2-Hexanone	UJ
EB13_6-8	SW8260C	67-64-1	Acetone	UJ
EB13_6-8	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB13_6-8	SW8270D	1912-24-9	Atrazine	UJ
EB13_6-8	SW8270D	100-52-7	Benzaldehyde	UJ
EB13_6-8	SW8270D	92-87-5	Benzidine	UJ
EB13_6-8	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB13_6-8	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB13_6-8	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB13_6-8	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB13_6-8	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB13_6-8	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB13_6-8	SW8270D	78-59-1	Isophorone	UJ
EB13_6-8	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB13_6-8	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB13_6-8	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB13_6-8	SW8270D	87-86-5	Pentachlorophenol	UJ
EB14_0-2	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
EB14_0-2	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
EB14_0-2	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB14_0-2	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
EB14_0-2	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
EB14_0-2	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
EB14_0-2	SW8260C	96-12-8	1,2-Dibromo-3-Chloropropane	UJ
EB14_0-2	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
EB14_0-2	SW8260C	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	UJ
EB14_0-2	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
EB14_0-2	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
EB14_0-2	SW8260C	105-05-5	1,4-Diethyl Benzene	UJ
EB14_0-2	SW8260C	95-49-8	2-Chlorotoluene	UJ
EB14_0-2	SW8260C	591-78-6	2-Hexanone	UJ
EB14_0-2	SW8260C	106-43-4	4-Chlorotoluene	UJ
EB14_0-2	SW8260C	622-96-8	4-Ethyltoluene	UJ
EB14_0-2	SW8260C	67-64-1	Acetone	UJ
EB14_0-2	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB14_0-2	SW8270D	1912-24-9	Atrazine	UJ
EB14_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB14_0-2	SW8270D	92-87-5	Benzidine	UJ
EB14_0-2	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB14_0-2	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB14_0-2	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB14_0-2	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB14_0-2	SW8260C	108-86-1	Bromobenzene	UJ
EB14_0-2	SW8260C	87-68-3	Hexachlorobutadiene	UJ
EB14_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB14_0-2	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB14_0-2	SW8270D	78-59-1	Isophorone	UJ
EB14_0-2	SW8260C	98-82-8	Isopropylbenzene (Cumene)	UJ
EB14_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB14_0-2	SW8260C	91-20-3	Naphthalene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB14_0-2	SW8260C	104-51-8	n-Butylbenzene	UJ
EB14_0-2	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB14_0-2	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB14_0-2	SW8260C	103-65-1	n-Propylbenzene	UJ
EB14_0-2	SW8260C	CYMP	p-Cymene (p-Isopropyltoluene)	UJ
EB14_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB14_0-2	SW8260C	135-98-8	Sec-Butylbenzene	UJ
EB14_0-2	SW8260C	98-06-6	T-Butylbenzene	UJ
EB14_0-2	SW8260C	110-57-6	Trans-1,4-Dichloro-2-Butene	UJ
EB14_6-8	SW8260C	591-78-6	2-Hexanone	UJ
EB14_6-8	SW8260C	67-64-1	Acetone	J
EB14_6-8	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB14_6-8	SW8270D	1912-24-9	Atrazine	UJ
EB14_6-8	SW8270D	100-52-7	Benzaldehyde	UJ
EB14_6-8	SW8270D	92-87-5	Benzidine	UJ
EB14_6-8	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB14_6-8	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB14_6-8	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB14_6-8	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB14_6-8	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	UJ
EB14_6-8	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB14_6-8	SW8270D	78-59-1	Isophorone	UJ
EB14_6-8	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB14_6-8	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB14_6-8	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB14_6-8	SW8270D	87-86-5	Pentachlorophenol	UJ
EB16_0-2	SW8260C	591-78-6	2-Hexanone	UJ
EB16_0-2	SW8260C	67-64-1	Acetone	UJ
EB16_0-2	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB16_0-2	SW8270D	1912-24-9	Atrazine	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB16_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB16_0-2	SW8270D	92-87-5	Benzidine	UJ
EB16_0-2	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB16_0-2	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB16_0-2	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB16_0-2	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB16_0-2	SW9010	57-12-5	Cyanide	UJ
EB16_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	J
EB16_0-2	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB16_0-2	SW8270D	78-59-1	Isophorone	UJ
EB16_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB16_0-2	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB16_0-2	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB16_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB16_4-6	SW8260C	591-78-6	2-Hexanone	UJ
EB16_4-6	SW8260C	67-64-1	Acetone	J
EB16_4-6	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB16_4-6	SW8270D	1912-24-9	Atrazine	UJ
EB16_4-6	SW8270D	100-52-7	Benzaldehyde	UJ
EB16_4-6	SW8270D	92-87-5	Benzidine	UJ
EB16_4-6	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB16_4-6	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB16_4-6	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB16_4-6	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB16_4-6	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	UJ
EB16_4-6	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB16_4-6	SW8270D	78-59-1	Isophorone	UJ
EB16_4-6	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB16_4-6	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB16_4-6	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB16_4-6	SW8270D	87-86-5	Pentachlorophenol	UJ
EB17_0-2	SW8260C	591-78-6	2-Hexanone	UJ
EB17_0-2	SW8260C	67-64-1	Acetone	UJ
EB17_0-2	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB17_0-2	SW8270D	1912-24-9	Atrazine	UJ
EB17_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB17_0-2	SW8270D	92-87-5	Benzidine	UJ
EB17_0-2	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB17_0-2	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB17_0-2	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB17_0-2	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB17_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	UJ
EB17_0-2	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB17_0-2	SW8270D	78-59-1	Isophorone	UJ
EB17_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB17_0-2	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB17_0-2	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB17_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
EB17_3-5	SW8260C	591-78-6	2-Hexanone	UJ
EB17_3-5	SW8260C	67-64-1	Acetone	UJ
EB17_3-5	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB17_3-5	SW8270D	1912-24-9	Atrazine	UJ
EB17_3-5	SW8270D	100-52-7	Benzaldehyde	UJ
EB17_3-5	SW8270D	92-87-5	Benzidine	UJ
EB17_3-5	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB17_3-5	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB17_3-5	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB17_3-5	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
EB17_3-5	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	UJ
EB17_3-5	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB17_3-5	SW8270D	78-59-1	Isophorone	UJ
EB17_3-5	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB17_3-5	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB17_3-5	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB17_3-5	SW8270D	87-86-5	Pentachlorophenol	UJ
EB23_0-2	SW8260C	591-78-6	2-Hexanone	UJ
EB23_0-2	SW8260C	67-64-1	Acetone	UJ
EB23_0-2	SW8270D	62-53-3	Aniline (Phenylamine, Aminobenzene)	UJ
EB23_0-2	SW8270D	1912-24-9	Atrazine	UJ
EB23_0-2	SW8270D	100-52-7	Benzaldehyde	UJ
EB23_0-2	SW8270D	92-87-5	Benzidine	UJ
EB23_0-2	SW8270D	100-51-6	Benzyl Alcohol	UJ
EB23_0-2	SW8270D	111-91-1	Bis(2-Chloroethoxy) Methane	UJ
EB23_0-2	SW8270D	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UJ
EB23_0-2	SW8270D	108-60-1	Bis(2-Chloroisopropyl) Ether	UJ
EB23_0-2	SW8270D	193-39-5	Indeno(1,2,3-c,d)Pyrene	UJ
EB23_0-2	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
EB23_0-2	SW8270D	78-59-1	Isophorone	UJ
EB23_0-2	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ
EB23_0-2	SW8270D	62-75-9	n-Nitrosodimethylamine	UJ
EB23_0-2	SW8270D	621-64-7	n-Nitrosodi-N-Propylamine	UJ
EB23_0-2	SW8270D	87-86-5	Pentachlorophenol	UJ
TB08_031319	SW8260C	123-91-1	1,4-Dioxane (P-Dioxane)	UJ
TB08_031319	SW8260C	110-75-8	2-Chloroethyl Vinyl Ether	UJ
TB08_031319	SW8260C	591-78-6	2-Hexanone	UJ
TB08_031319	SW8260C	67-64-1	Acetone	UJ
TB08_031319	SW8260C	74-83-9	Bromomethane	UJ
TB08_031319	SW8260C	75-00-3	Chloroethane	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
TB08_031319	SW8260C	64-17-5	Ethanol	UJ
TB08_031319	SW8260C	87-68-3	Hexachlorobutadiene	UJ
TB08_031319	SW8260C	74-88-4	Iodomethane (Methyl Iodide)	UJ
TB08_031319	SW8260C	78-93-3	Methyl Ethyl Ketone (2-Butanone)	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. The following major deficiencies were identified.

VOCs by SW-846 Method 8260C:

J6445

The sample EB02_1.5-3.5 exhibited responses below the lower control limit (LCL) for the internal standards pentafluorobenzene (4.8%), 1,4-difluorobenzene (5.4%), chlorobenzene-d5 (6.4%), and 1,4-dichlorobenzene-d4 (4.7%). The associated non-detections are rejected based on potential loss of instrument sensitivity.

The sample EB02_6-8 exhibited responses below the LCL for the internal standards pentafluorobenzene (0.6%), 1,4-difluorobenzene (0.7%), chlorobenzene-d5 (1.0%), and 1,4-dichlorobenzene-d4 (1.0%). The associated non-detections are rejected based on potential loss of instrument sensitivity.

J6465

The sample EB01_0-2 exhibited responses below the LCL for the internal standards pentafluorobenzene (1.0%), 1,4-difluorobenzene (1.2%), chlorobenzene-d5 (1.4%), and 1,4-dichlorobenzene-d4 (1.2%). The associated non-detections are rejected based on potential loss of instrument sensitivity.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

J6445

The sample EB02_1.5-3.5 exhibited percent recoveries above the upper control limit (UCL) for the surrogate 1,2-dichloroethane-d4 (259%) and dibromofluoromethane (148%). The associated results are qualified as "J" based on potential high bias.

The sample EB02_1.5-3.5 exhibited a response below the LCL for the internal standards pentafluorobenzene (4.8%), 1,4-difluorobenzene (5.4%), chlorobenzene-d5 (6.4%), and 1,4-dichlorobenzene-d4 (4.7%). The associated positive detections are qualified as "J" based on potential high bias.

The sample EB05_1.5-3.5 exhibited a response below the LCL for the internal standard 1,4-dichlorobenzene-d4 (47.5%). The associated non-detections are qualified as "UJ" based on potential loss of instrument sensitivity.

J6465

The method blank (MB) for batch VD122018 exhibited a detection of methylene chloride (3 ug/kg). The associated results in samples EB01_12-14, EB03_1.5-3.5, EB03_12-14, EB08_1.5-3.5, and EB08_12-14 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

19C0165

The LCS/LCSD for batch BC90471 exhibited RPDs above the control limit for 1,4-dioxane (p-dioxane) (36.7%), bromomethane (31.3%), chloroethane (43.4%), and tert-butyl alcohol (30.5%), and trichlorofluoromethane (30.9%). The associated results in samples TB07_030519 and SOFB04_030519 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/11/2019 at 12:06 exhibited a %D above the control limit for chloromethane (22.5%). The associated results in samples TB07_030519 and SOFB04_030519 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/11/2019 at 12:06 exhibited a RF below the control limit for 1,2-dibromo-3-chloropropane (0.0449). The associated results in samples TB07_030519 and SOFB04_030519 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/11/2019 at 11:12 exhibited %Ds above the control limit for acetone (-20.1%), bromomethane (-29.8%), and methylene chloride (-39.7%), and trichlorofluoromethane (-23.7%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8,

EB21_0-2, EB21_4-6, EB22_0-2, and SODUP04_030519 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/12/2019 at 10:01 exhibited a %D above the control limit for acetone (31.1%). The associated results in sample EB22_5-7 are qualified as "J" based on potential indeterminate bias.

19C0494

The LCS for batch BC90728 exhibited percent recoveries below the LCL for bromomethane (46.1%), and iodomethane (methyl iodide) (62.2%, 62.2%), and hexachlorobutadiene (68.2%, 68.2%). The associated results in sample TB08_031319 are qualified as "UJ" based on potential low bias.

The ICAL for instrument VOA No. 5 exhibited a RSD above the control limit for iodomethane (methyl iodide) (30.2%). The associated results in samples EB13_6-8, EB14_6-8, EB16_0-2, EB16_4-6, EB17_0-2, EB17_3-5, EB23_0-2 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA No. 8 exhibited RSDs above the control limit for 2-chloroethylvinyl ether (32.3%) and ethanol (23.7%). The associated results in sample TB08_031319 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA No. 3 exhibited a RSD above the control limit for iodomethane (methyl iodide) (27.7%). The associated results in samples EB13_0-2 and EB14_0-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/15/2019 at 10:33 exhibited %Ds above the control limit for 1,4-dioxane (p-dioxane) (-21.5%), 2-butanone (45.8%), 2-hexanone (28.5%), and acetone (73.4%), and chloroethane (27.1%). The associated results in sample TB08_031319 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/15/2019 at 10:52 exhibited %Ds above the control limit for 2-butanone (53.6%), and 2-hexanone (33.9%), and acetone (79%). The associated results in samples EB13_6-8, EB14_6-8, EB16_0-2, EB16_4-6, EB17_0-2, EB17_3-5, EB23_0-2 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/18/2019 at 10:12 exhibited %Ds above the control limit for 2-butanone (23.5%), and 2-hexanone (32.1%), and acetone (56.1%). The associated results in samples EB13_0-2 and EB14_0-2 are qualified as "J" or "UJ" based on potential indeterminate bias.

The sample EB14_0-2 exhibited a response below the LCL for the internal standard 1,2-dichlorobenzene-d4 (49%). The associated results are qualified as "UJ" based on potential loss of instrument sensitivity.

SVOCs by SW-846 Method 8270D:

19C0165

The LCS for batch BC90489 exhibited a percent recovery below the LCL for benzoic acid (9.74%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, EB21_0-2, EB22_0-2, EB22_5-7, and SODUP04_030519 are qualified as "UJ" based on potential low bias.

The ICAL for instrument BNA #7 exhibited a RSD above the control limit for benzidine (30.8%). The associated results in sample SOFB04_030519 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/11/2019 at 14:27 exhibited %Ds above the control limit for 2,4-dinitrophenol (110%), 4,6-dinitro-2-methylphenol (107%), benzaldehyde (-27.9%), and benzoic acid (20.4%), and hexachlorocyclopentadiene (-21%). The associated results in sample SOFB04_030519 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument BNA #1 exhibited RSDs above the control limit for benzidine (33.2%) and benzoic acid (30.6%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, EB21_0-2, EB21_4-6, EB22_0-2, EB22_5-7, and SODUP04_030519 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/12/2019 at 8:14 exhibited %Ds above the control limit for 2,4-dinitrophenol (46.6%), 4,6-dinitro-2-methylphenol (48.3%), benzaldehyde (-38.6%), benzo(a)pyrene (25.7%), benzyl butyl phthalate (21.2%), bis(2-ethylhexyl) phthalate (29.7%), di-n-octylphthalate (67%), hexachlorobenzene (-22.8%), hexachlorocyclopentadiene (-22%), and indeno(1,2,3-c,d)pyrene (25.5%), and pentachlorophenol (-33.4%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, and EB22_5-7 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/12/2019 at 15:00 exhibited %Ds above the control limit for 2,4-dinitrophenol (61.7%), 4,6-dinitro-2-methylphenol (51.9%), benzaldehyde (-25.5%), benzyl butyl phthalate (25.8%), bis(2-ethylhexyl) phthalate (28.5%), di-n-octylphthalate (71.8%), and hexachlorocyclopentadiene (-26.3%), and indeno(1,2,3-c,d)pyrene (25.9%). The associated

results in samples EB21_0-2, EB22_0-2, and SODUP04_030519 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 3/13/2019 at 8:15 exhibited a %D above the control limit for indeno(1,2,3-c,d)pyrene (25.7%). The associated results in sample EB18_0-2 are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on 3/14/2019 at 8:20 exhibited %Ds above the control limit for 1,2-diphenylhydrazine (-22.1%), 2,4-dinitrophenol (36.8%), 2-nitrophenol (20.2%), 4,6-dinitro-2-methylphenol (42.7%), 4-nitrophenol (-23.5%), benzaldehyde (-36.4%), benzidine (140%), benzyl butyl phthalate (24.9%), di-n-octylphthalate (68.1%), hexachlorobenzene (-21.3%), hexachlorocyclopentadiene (-31.5%), and indeno(1,2,3-c,d)pyrene (33.3%), and pentachlorophenol (-31.9%). The associated results in sample EB21_4-6 are qualified as "J" or "UJ" based on potential indeterminate bias.

The sample EB22_5-7 exhibited a concentration over the linear range for phenanthrene. The associated result is qualified as "J" based on potential indeterminate bias.

19C0494

The LCS for batch BC90868 exhibited a percent recovery above the UCL for indeno(1,2,3-c,d)pyrene (138%). The associated results in samples EB13_0-2, EB13_6-8, EB14_0-2, and EB16_0-2 are qualified as "J" based on potential high bias.

The CCV analyzed on 3/19/2019 at 13:24 exhibited %Ds above the control limit for aniline (-26.7%), atrazine (-25.8%), benzaldehyde (-40.6%), benzidine (-35.4%), benzyl alcohol (-20.6%), bis(2-chloroethoxy)methane (-26.3%), bis(2-chloroethyl)ether (-22%), bis(2-chloroisopropyl)ether (-45.1%), indeno(1,2,3-c,d)pyrene (35.2%), isophorone (-20.8%), n-nitrosodimethylamine (-35.4%), and n-nitroso-di-n-propylamine (-20.2%), and pentachlorophenol (-24.9%). The associated results in samples EB13_0-2, EB13_6-8, EB14_0-2, EB14_6-8, EB16_0-2, EB16_4-6, EB17_0-2, EB17_3-5, EB23_0-2 are qualified as "J" or "UJ" based on potential indeterminate bias.

PCBs by SW-846 Method 8082A:

J6445

The sample EB06_1-3 exhibited percent recoveries below the LCL for the surrogate decachlorobiphenyl (50%, 48%). The associated results are qualified as "UJ" based on potential low bias.

J6465

The sample EB01_12-14 exhibited percent recoveries below the LCL for the surrogate decachlorobiphenyl (49%, 50%). The associated results are qualified as "UJ" based on potential low bias.

The sample EB08_12-14 exhibited percent recoveries below the LCL for the surrogate decachlorobiphenyl (41%, 42%). The associated results are qualified as "UJ" based on potential low bias.

The continuing calibration verification analyzed on 12/20/2018 at 20:15 exhibited a percent difference above the control limit for PCB-1016 peaks 1 through 5 on the primary column. The associated result in sample SOFB02_121718 is qualified as "UJ" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B:

J6371

The sample EB07_1-2 exhibited relative percent differences (RPDs) greater than the control limit between the primary and secondary chromatography columns for alpha chlordane, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT. The associated results are qualified as "J" based on potential indeterminate bias.

The sample EB04_0-2 exhibited a RPD greater than the control limit between the primary and secondary chromatography columns for 4,4'-DDD. The associated result is qualified as "J" based on potential indeterminate bias.

J6465

The sample EB01_0-2 exhibited a RPD greater than the control limit between the primary and secondary chromatography columns for alpha chlordane. The associated result is qualified as "J" based on potential indeterminate bias.

The sample EB08_1.5-3.5 exhibited RPDs greater than the control limit between the primary and secondary chromatography columns for alpha chlordane, heptachlor, 4,4'-DDE, and 4,4'-DDT. The associated results are qualified as "J" based on potential indeterminate bias.

19C0165

The sample EB15_0-2 exhibited a RPD greater than the control limit between the primary and secondary chromatography columns for gamma chlordane. The associated result is qualified as "J" based on potential indeterminate bias.

The sample EB21_0-2 exhibited a RPD greater than the control limit between the primary and secondary chromatography columns for chlordane. The associated result is qualified as "J" based on potential indeterminate bias.

The sample EB21_4-6 exhibited a RPD greater than the control limit between the primary and secondary chromatography columns for chlordane. The associated result is qualified as "J" based on potential indeterminate bias.

Metals by SW-846 Method 6010D:

J6371

The MB for batch PB115659 exhibited a detection of lead (0.231 mg/kg). The associated results in samples EB04_14-16, EB07_11-12, and EB07_1-2 are qualified as "U" at the sample concentration based on potential blank contamination.

J6397

The matrix spike and duplicate (MS/MSD) for batch PB115669 exhibited percent recoveries above the UCL for magnesium (127%, 138%) and manganese (260%, 260%). The associated results in samples EB10_1.5-2.5, EB10_12-14, EB11_0-2, EB11_12-14, and SODUP01_121218 are qualified as "J" based on potential high bias.

The MS for batch PB115669 exhibited a percent recovery below the LCL for antimony (60.6%). The associated results in samples EB10_1.5-2.5, EB10_12-14, EB11_0-2, EB11_12-14, and SODUP01_121218 are qualified as "UJ" based on potential low bias.

The field duplicate and parent sample (SODUP01_121218 and EB10_12-14) exhibited RPDs above the control limit for aluminum (61.5%) and chromium (51.3%). The associated results are qualified as "J" based on potential indeterminate bias.

J6424

The MS for batch PB115783 exhibited a percent recovery below the LCL for antimony (71.7%). The associated results in samples EB09_1.5-2.5, EB09_12-14, EB12_1.5-2.5, EB12_12-14, and SODUP02_121318 are qualified as "UJ" based on potential low bias.

The field duplicate and parent sample (SODUP02_121318 and EB12_12-14) exhibited an absolute difference above the control limit for lead (1.224 mg/kg). The associated results are qualified as "J" based on potential indeterminate bias.

J6445

The MS/MSD for batch PB115804 exhibited percent recoveries above the UCL for aluminum (177%, 168%). The associated results in samples EB02_1.5-3.5, EB02_12-14, EB02_6-8, EB05_1.5-3.5, EB05_12-14, EB06_12-14, and EB06_1-3 are qualified as "J" based on potential high bias.

J6465

The MS/MSD for batch PB115838 exhibited percent recoveries above the UCL for sodium (129%, 138%). The associated results in samples EB01_0-2, EB01_12-14, EB03_1.5-3.5, EB03_12-14, EB08_1.5-3.5, and EB08_12-14 are qualified as "J" based on potential high bias.

The MS for batch PB115838 exhibited a percent recovery below the LCL for antimony (68.7%). The associated results in samples EB01_0-2, EB01_12-14, EB03_1.5-3.5, EB03_12-14, EB08_1.5-3.5, and EB08_12-14 are qualified as "J" or "UJ" based on potential low bias.

19C0165

The laboratory duplicate and parent sample (EB22_5-7) exhibited RPDs above the control limit for lead (147%), arsenic (40.3%), and barium (81.9%), and chromium, total (85.2%). The associated results are qualified as "J" based on potential indeterminate bias.

The MS for batch BC90319 exhibited a percent recovery above the UCL for sodium (125%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, EB21_0-2, EB21_4-6, EB22_0-2, EB22_5-7, and SODUP04_030519 are qualified as "J" based on potential high bias.

The MS for batch BC90319 exhibited a percent recovery below the LCL for barium (59.2%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, EB21_0-2, EB21_4-6, EB22_0-2, EB22_5-7, and SODUP04_030519 are qualified as "J" based on potential low bias.

The field duplicate and parent sample (EB18_6-8 and SODUP04_030519) exhibited an absolute difference greater than the RL for cadmium (1.397 mg/kg). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias.

The field duplicate and parent sample (EB18_6-8 and SODUP04_030519) exhibited a RPD greater than the control limit for copper (77.1%). The associated results are qualified as "J" based on potential indeterminate bias.

The serial dilution exhibited %Ds above the control limit for aluminum (18.0%), calcium (15.3%), cobalt (32.0%), copper (16.8%), iron (17.3%), magnesium (19.1%), manganese (28.2%), nickel (63.0%), potassium (12.5%), vanadium (24.8%), and zinc (29.7%). The associated results in sample EB22_5-7 are qualified as "J" based on potential indeterminate bias.

CN by SW-846 Method 9012B:

J6371

The MS/MSD for batch LB99812 exhibited percent recoveries below the LCL for cyanide (60%, 60%). The associated results in samples EB04_0-2, EB04_14-16, EB07_11-12, EB07_1-2, and FB01_121118 are qualified as "J" based on potential low bias.

19C0165

The MS for batch BC90370 exhibited a percent recovery below the LCL for cyanide (71.4%). The associated results in sample EB22_5-7 are qualified as "J" based on potential low bias.

19C0494

The MS for batch BC90648 exhibited a percent recovery below the LCL for cyanide (79%). The associated results in sample EB16_0-2 are qualified as "UJ" based on potential low bias.

CrVI by SW-846 Method 7196A

19C0165

The MS for batch BC90303 exhibited a percent recovery below the LCL for chromium, hexavalent (36.2%). The associated results in samples EB15_0-2, EB15_8-10, EB18_0-2, EB18_6-8, EB21_0-2, EB21_4-6, EB22_0-2, EB22_5-7, and SODUP04_030519 are qualified as "UJ" based on potential low bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

J6371

The sample EB07-1-2 exhibited a percent recovery below the LCL for the surrogate dibromofluoromethane (19%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

J6424

The sample EB09_1.5-2.5 exhibited a percent recovery above the UCL for the surrogate 1,2-dichloroethane-d4 (122%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

J6445

The sample EB06_12-14 exhibited a percent recovery below the LCL for the surrogate dibromofluoromethane (15%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

The sample EB02_6-8 exhibited percent recoveries above the UCL for the surrogate 1,2-dichloroethane-d4 (289%) and dibromofluoromethane (146%). The associated results are non-detections. No qualification is necessary.

The sample EB05_1.5-3.5 exhibited a percent recovery above the UCL for the surrogate 1,2-dichloroethane-d4 (146%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

J6465

The sample EB01_0-2 exhibited a percent recovery above the UCL for the surrogate 1,2-dichloroethane-d4 (174%). The other three volatile surrogates were recovered within the control limits. No qualification is necessary.

The lab control sample and duplicate (LCS/LCSD) for batch VD122018 exhibited a RPD above the control limit for methylene chloride (25%). The associated result in sample EB01_0-2 was previously rejected. No further action is necessary.

19C0165

The FB (SOFB04_030519) exhibited a detection of chloromethane (0.47 ug/L). The associated results are non-detections. No qualification is necessary.

The MSD for batch BC90466 exhibited a percent recovery below the LCL for acetone (30.4%). Organic results are not qualified on the basis of MSDs alone. No qualification is necessary.

The LCS for batch BC90471 exhibited percent recoveries above the UCL for chloroethane (149%) and trichlorofluoromethane (144%). The associated results are non-detections. No qualification is necessary.

19C0494

The LCSD for batch BC90726 exhibited a percent recovery above the UCL for iodomethane (methyl iodide) (127%). The associated results are non-detections. No qualification is necessary.

The LCS for batch BC90728 exhibited a percent recovery above the UCL for dichlorodifluoromethane (139%). The associated results are non-detections. No qualification is necessary.

The LCS for batch BC90781 exhibited a percent recovery above the UCL for iodomethane (methyl iodide) (133%). The associated results are non-detections. No qualification is necessary.

SVOCs by SW-846 Method 8270D:

J6371

The sample EB07-1-2 exhibited a percent recovery below the LCL for the surrogate 2,4,6-tribromophenol (15%). The other two acid extractable surrogates were recovered within the control limits. No qualification is necessary.

The MS/MSD for batch PB115631 exhibited RPDs above the control limit for several analytes. Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

J6445

The sample EB06_1-3 exhibited a percent recovery below the LCL for the surrogate 2-fluorobiphenyl (36%). The other two base/neutral surrogates were recovered within the control limits. No qualification is necessary.

The sample EB06_12-14 exhibited a percent recovery below the LCL for the surrogate 2,4,6-tribromophenol (22%). The other two acid extractable surrogates were recovered within the control limits. No qualification is necessary.

J6465

The LCS for batch PB115836 exhibited a percent recovery above the UCL for 3&4-methylphenol (m&p-cresol) (94%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch PB115831 exhibited RPDs above the control limit for several analytes. Organic results are not qualified on the basis of MS/MSDs alone. No qualification is necessary.

19C0165

The MS for batch BC90489 exhibited a percent recovery above the UCL for 2,3,4,6-tetrachlorophenol (131%). Organic results are not qualified on the basis of MS recoveries alone. No qualification is necessary.

The MSD for batch BC90489 exhibited a percent recovery below the LCL for benzoic acid (4.53%). Organic results are not qualified on the basis of MSD recoveries alone. No qualification is necessary.

The MS/MSD for batch BC90489 exhibited RPDs above the control limit for anthracene (34.9%), pyrene (61.9%), benzo(g,h,i)perylene (52.8%), indeno(1,2,3-c,d)pyrene (-2.24%), benzo(b)fluoranthene (56.2%), fluoranthene (-226%), benzo(k)fluoranthene (52.4%), chrysene (56.7%), benzo(a)pyrene (56.1%), benzo(a)anthracene (62%), and phenanthrene (44.2%), and 3,3'-dichlorobenzidine (54.9%). Organic results are not qualified on the basis of MS/MSD RPDs alone. No qualification is necessary.

The LCS for batch BC90621 exhibited a percent recovery above the UCL for di-n-octylphthalate (137%). The associated results are non-detections. No qualification is necessary.

19C0494

The MB for batch BC90868 exhibited a detection of bis(2-ethylhexyl) phthalate (0.0266 mg/kg). The associated results are non-detections. No qualification is necessary.

The LCS for batch BC90868 exhibited percent recoveries above the UCL for benzaldehyde (112%), atrazine (115%), and 2,3,4,6-tetrachlorophenol (212%), and 1,2,4,5-tetrachlorobenzene (153%). The associated results are non-detections. No qualification is necessary.

PCBs by SW-846 Method 8082A:

J6465

The sample EB03_1.5-3.5 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (55%) on the secondary column. No results are reported from this column. No qualification is necessary.

19C0165

The MS for batch BC90440 exhibited percent recoveries below the LCL for PCB-1260 (Aroclor 1260) (37.1%) and PCB-1016 (Aroclor 1016) (26.7%). Organic results are not qualified on the basis of MS recoveries alone. No qualification is necessary.

Metals by SW-846 Method 6010D:

J6371

The FB (FB01_121118) exhibited detections of sodium (40.1 ug/l) and zinc (5.14 ug/l). The associated results are non-detections. No qualification is necessary.

J6397

The MS/MSD for batch PB115669 exhibited percent recoveries above the UCL for aluminum (220%, 228%) and iron (156%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

J6424

The MS/MSD for batch PB115783 exhibited percent recoveries above the UCL for iron (289%, 177%) and aluminum (220%, 189%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

J6445

The MS/MSD for batch PB115804 exhibited percent recoveries above the UCL for iron (338%, 345%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

J6465

The MB for batch PB115843 exhibited a detection of aluminum (7.78 ug/l). The associated results are non-detections. No qualification is necessary.

The FB (SOFB02_121718) exhibited a detection of zinc (9.87 ug/l). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch PB115838 exhibited percent recoveries above the UCL for iron (182%, 290%) and aluminum (135%, 166%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

19C0165

The MB for batch BC90319 exhibited a detection of potassium (6.67 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MS for batch BC90319 exhibited percent recoveries above the UCL for aluminum (432%), iron (1110%), and magnesium (864%), and zinc (286%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS for batch BC90319 exhibited percent recoveries below the LCL for lead (-793%) and calcium (-2550%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

CN by SW-846 Method 9012B:

J6371

The FB (FB01_121118) exhibited a detection of cyanide (0.039 mg/l). The associated results are non-detections. No qualification is necessary.

J6465

The FB (SOFB02_121718) exhibited a detection of cyanide (0.0036 mg/l). The associated results are non-detections. No qualification is necessary.

COMMENTS:

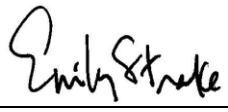
Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 50% for soil. The following analytes did not meet the precision criteria:

- SODUP01_121218 and EB10_12-14: aluminum, chromium
- SODUP02_121318 and EB12_12-14: lead
- SODUP04_030519 and EB18_6-8: cadmium, copper

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected data described above. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 98.8%.

Signed:



Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Sherief Saleh, Langan Senior Staff Scientist

From: Emily Strake, Langan Senior Project Chemist

Date: March 7, 2019

Re: Data Usability Summary Report
For 21st Beach Street
Soil Vapor Samples Collected in December 2018
Langan Project No.: 170540601

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil vapor samples collected in December 2018 by Langan Engineering and Environmental Services ("Langan") at the Beach 21st Street site ("the Site"). The samples were analyzed by York Analytical Laboratories (NYSDOH NELAC registration # 12058) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
18L0614	18L0614-01	SV-10	12/13/2018	VOCs
18L0614	18L0614-02	SV-4	12/13/2018	VOCs
18L0614	18L0614-03	SV-7	12/13/2018	VOCs
18L0798	18L0798-01	SV-9	12/14/2018	VOCs
18L0798	18L0798-02	SV-12	12/14/2018	VOCs
18L1165	18L1165-01	SV-1	12/17/2018	VOCs
18L1165	18L1165-02	SV-2	12/17/2018	VOCs
18L1165	18L1165-03	SV-3	12/17/2018	VOCs
18L1165	18L1165-04	SV-5	12/17/2018	VOCs
18L1165	18L1165-05	SV-8	12/17/2018	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), and the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, target compound identification and quantification, chromatograms, overall system performance, and field duplicate sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SV-1	TO15	74-87-3	Chloromethane	UJ
SV-2	TO15	74-87-3	Chloromethane	UJ
SV-3	TO15	74-87-3	Chloromethane	J
SV-5	TO15	74-87-3	Chloromethane	UJ
SV-8	TO15	74-87-3	Chloromethane	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

18L1165

The continuing calibration verification analyzed on 12/28/2018 at 12:55 exhibited a percent difference above the control limit for chloromethane (30.8%). The associated results in sample SV-1, SV-2, SV-3, SV-5, and SV-8 are qualified as "J" or "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by USEPA Method TO-15:

18L1165

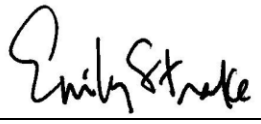
The laboratory control sample for batch BL81500 exhibited a percent recovery above the upper control limit for hexachlorobutadiene (130%). The associated results are non-detections. No qualification is necessary.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:



Emily Strake, CEP
Senior Project Chemist

APPENDIX H
Laboratory Data Reports (on CD)

APPENDIX I

Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key	If YES Go to:	If NO Go to:
1. Is the site or area of concern a discharge or spill event?	13	2
2. Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3
3. Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9
4. Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5
5. Has the contamination gone off-site?	6	14
6. Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14
7. Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8
8. Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14
9. Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv. Stream, creek or river v. Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv. Other terrestrial habitat	11	10
10. Is the lack of resources due to the contamination?	3.10.1	14
11. Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12
12. Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12
13. Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14
14. No Fish and Wildlife Resources Impact Analysis needed.		