Remedial Investigation Workplan

For:

1510 Broadway LLC
Site # C224280

1510 Broadway Dry Cleaner Site
1510 Broadway
Brooklyn, NY 11221

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Table of Contents

1.0 INTRODUCTION 1

2.0 PROJECT BACKGROUND 1

2.1 Site Description 1

2.2 Site History 2

2.3 Previous Environmental Investigation 3

2.3.1 Phase I Environmental Site Assessments by AKRF (March 2017) 3

2.3.2 Remedial Investigation Report by AKRF (May 2018) 4

2.4 Geologic Setting 7

2.5 Hydrogeologic Setting 8

2.6 Subsurface Features 8

2.7 Summary of Environmental Assessment 8

3.0 FIELD REMEDIAL INVESTIGATION 9

3.1 Soil Remedial Investigation 9

3.2 Groundwater Remedial Investigation 9

3.3 Soil Vapor Investigation 12

4.0 DECONTAMINATION and IDW 13

5.0 SURVEY 13

6.0 HUMAN HEALTH EXPOSURE ASSESSMENT 13

7.0 FISH AND WILDLIFE IMPACT ANALYSIS 13

8.0 DUSR 14

9.0 REMEDIAL INVESTIGATION REPORT 14

10.0 QUALITY ASSURANCE/QUALITY CONTROL 15

11.0 HEALTH AND SAFETY PLAN 15

12.0 COMMUNITY AIR MONITORING 15

13.0 CITIZEN PARTICIPATION 15

LIST OF FIGURES:

FIGURE 2.1: SITE LOCATION MAP

FIGURE 2.2: SITE PLAN

FIGURE 2.3: REC LOCATION PLAN

FIGURE 3.1: LOCATION OF PROPOSED SOIL BORINGS

FIGURE 3.2: LOCATION OF PROPOSED GROUNDWATER MONITORING WELLS

FIGURE 3.3: LOCATION OF PROPOSED SOIL VAPOR POINTS

LIST OF APPENDICES:

APPENDIX A: PREVIOUS ENVIRONMENTAL REPORTS (ELECTRONIC)

APPENDIX B: QUALITY ASSURANCE PROJECT PLAN (QAPP)

APPENDIX C: HEALTH AND SAFETY PLAN (HASP)

APPENDIX D: COMMUNITY AIR MONITORING PLAN (CAMP)

APPENDIX E: CITIZEN PARTICIPATION PLAN (CPP)

APPENDIX F: GROUNDWATER SAMPLING PLAN FOR EMERGING CONTAMINANTS

APPENDIX G: TYPICAL BORING/WELL CONSTRUCTION LOG

1.0 INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has entered into a Brownfield Cleanup Program (BCP) Agreement (BCA) with 1510 Broadway LLC, a Volunteer, for the 0.4605-acre property located at the 1510 Broadway Dry Cleaner Site (BCP# C224280) ("Site"), 1510 Broadway, Brooklyn, New York on November 7, 2018. This document comprises a Remedial Investigation Work Plan (RIWP) to be conducted at the Site, as part of the Site's planned remedial investigation and remediation. It includes a description of the Site, summary of the Site history and previous environmental investigations, a description of the Site's physical, geologic, hydrogeologic setting and subsurface features and a plan of action for further investigation of the areas of concern identified previously.

This RIWP has been prepared to achieve the following objectives:

- To complete the horizontal and vertical delineation of the nature and extent of contamination on the Site,
- To identify any potential source areas of contamination,
- To determine the remedial action needed to protect human health and the environment, and
- To collect sufficient data to advance the remediation of the Site.

This RIWP is developed in general accordance with the Department's Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

2.0 PROJECT BACKGROUND

2.1 Site Description

The Site comprises approximately 0.46-acres. The Site is located at 1510 Broadway, but also has historic addresses encompassing 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant / Brownsville section of Brooklyn, New York. The Site is located in a residential and commercial area. **Figure 2.1** presents a Site Location Map.

The Site is owned by the City of New York (Tax Block 1489, Lots 6, 11, 12, 13, 14, 15, 16, 17, 18). An application to merge these nine lots into one lot with the address 1510 Broadway has been submitted to the City for processing. The application is still under process at the time of writing this RIWP. The BCP files will be updated accordingly once the application is approved.

The Site is bounded by Broadway, Hancock Street, Saratoga Avenue, and Jefferson Avenue. The elevated subway is located above Broadway (J and Z lines), and the MTA Halsey Street Station is adjacent to site. The surrounding area is predominantly residential and commercial in use, with

some institutional uses. Currently, the Site is vacant and enclosed by construction fencing.
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Topography at the Property slopes down to the west. Based on the U.S. Geological Survey – Central Park, New York the Property is approximately 50 feet above mean sea level. **Figure 2.2** presents a Site Plan.

Adjacent properties are tabulated below:

Direction	Adjacent Property
North	Jefferson Avenue, followed by a transit system substation
South	Brick and cinder block apparent vacant building and Hancock Street, followed by a medical center and residences
East	Broadway and elevated subway (J and Z line) tracks, followed by commercial uses
West	Brick building and Saratoga Avenue, followed by residences

The proposed project will construct a planned transit-oriented 8-story mixed-use development with a commercial ground floor and 103 affordable rental apartments. The project site is located within Community District 19 at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant / Brownsville section of Brooklyn, New York. The address for the BCP Site once lot consolidation occurs will be 1510 Broadway. The proposed development consists of one eight-story structure with a partial cellar level. The cellar will contain mechanical spaces and building storage. The first floor will contain the commercial retail space, a residential lobby, five residential units, a residential recreational area, laundry and bike rooms, and additional mechanical and building storage rooms. Residential units will occupy the second through eighth floors, with an exterior residential recreation courtyard proposed on the second floor

2.2 Site History

Historical Sanborn maps indicated that by 1888, the Property was developed with four three-story buildings used as offices and storefronts. Nine additional four-story commercial buildings were developed by 1908 and by 1932, two additional buildings occupied the Site. The property had the following former industrial and commercial uses that are likely to have contributed to contamination: dry cleaners, dress manufacturer/dying facility, printer, and watch and jewelry repair. The addresses appear to have changed over time and the following uses were either on the property or immediately adjacent to it: a paint and oils store at 1522 Broadway on a 1932 map, a dry cleaner at 7 Saratoga Avenue from approximately 1949 to 1965,a cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949. Industrial, automotive, and dry-cleaning uses were also noted in the surrounding area including

garages with gasoline tanks to the south/west, substations to the south- and northwest, a chemical and bleach bottling facility to the northwest, a paint manufacturer, and a dry cleaner approximately 250 feet south-southwest of the Site.

These historic uses are likely to have contributed to the on-Site contamination. Tetrachloroethylene (PCE) is a cleaning product used by dry cleaners, which is present in groundwater and soil vapor, and which likely resulted from on-Site dry-cleaning operation. Petroleum related compounds are also present, which likely result from the former on-Site garages. The Site soils also consist of contaminated historic fill brought to the Site from other locations to level the ground surface, which was a common historic practice.

The Site was entered into the BCP program which is the subject of this RIWP. The Site is currently vacant enclosed by construction fencing and covered by gravel, dirt and overgrown vegetation. The planned to be improves include an 8-story mixed-use development with a commercial ground floor and 103 affordable rental apartments.

2.3 Previous Environmental Investigation

The following environmental reports are attached in **Appendix A** and summarized below:

A. Phase I Environmental Site Assessment, MWBE Site C, 7 Saratoga Avenue and 1510 – 1524 Broadway by AKRF, March 2017.

B. Remedial Investigation Report, 7 Saratoga Avenue and 1510 – 1524 Broadway by AKRF, May 2018.

C. Geotechnical Engineering Report, MWBE Site C, 1510 – 1524 Broadway by SESI, August 2017 (Supplemental Data added May 2018).

2.3.1 Phase I Environmental Site Assessments by AKRF (March 2017)

AKRF, Inc. (AKRF) conducted a Phase I Environmental Site Assessment (Phase I ESA), dated March 2017 for the New York City Mayors Office of Remediation. The following Recognized Environmental Concerns (RECs) were identified in the Phase I ESA Report prepared by AKRF and SESI's review of the Site history:

- **REC 1: Former Dry Cleaner and Other Former Manufacturing Operations** - Historical Sanborn maps and City Directories indicated that a dry cleaner operated at 7 Saratoga Avenue from approximately 1949 to 1965. Additionally, Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949. The locations of these former on-site facilities are presented in **Figure 2.3**.

- **REC 2: Demolition Debris and Historic Fill** - Buried demolition debris associated with the former buildings and historic fill may be present at the Property. According to the AKRF Phase 1 ESA, electronic DOB records included an oil burner application for 1512 Broadway. However, the geophysical investigation conducted by AKRF did not show any major anomalies that would be indicative of an underground storage tank.
- **REC 3: Off-Site Impacts** – Industrial, automotive, and dry cleaning uses were also noted in the surrounding area, including garages with gasoline tanks south/west-adjacent to the Property on the 1932 map and approximately 75 feet south of the Property and on maps from 1932 to 1962. Auto repair was shown with one of the garages 75 feet south of the Property and approximately 195 feet southwest of the Property on the 1962 map. Potential auto repair was identified in the City Directories on the east-adjacent block from 1965 to 1985. Substations were identified on the south and northwest adjacent blocks from 1908 to 2006 and 1976 to 2007 maps, respectively. A chemical and bleach bottling facility was noted approximately 250 feet northwest of the Property on maps from 1951 and 1962, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979.

2.3.2 Remedial Investigation Report by AKRF (May 2018)

The Site has been preliminarily investigated in the last year under the oversight of the NYC Office of Environmental Remediation ("OER") through its Jump Start Program. An OER Remedial Investigation Report ("RIR") has been completed and is included in Appendix A. The stratigraphy of the Site, from the surface down, consists of approximately 6 to 12 feet of historic fill material (sand with varying amounts of gravel, brick, coal ash, glass and wood), underlain by native sand with varying amounts of silt and gravel. Groundwater was observed at depths ranging from 37.5 to 39 feet below grade. Groundwater flow direction across the site was not evaluated however based on the regional topography the regional groundwater is presumed to be northerly towards Newton Creek. Based on the OER Remedial Investigation conducted to date, the primary contaminants of concern detected above the Unrestricted Use Soil Cleanup Objectives (UUSCOs) and restricted residential SCOs (RRSCOs) are as follows:

<u>Soil</u>

Twenty-four (24) samples were collected from 12 soil borings for analysis of volatile organic compounds (VOCs), semi-VOCs (SVOCs), PCBs, pesticides, and metals. Impacts to soil exceeding the SCO are the following:

- VOCs: VOCs were detected in 20 of 24 soil samples, including low concentrations of acetone, chloroform, chloromethane, methyl chloride, 1,2-dimethylbenzene, and tetrachloroethene, below their respective UUSCOs and RRSCOs;

- SVOCs: Seven polycyclic aromatic hydrocarbons (PAHs), a class of SVOCs commonly associated with historic fill materials, combustion products such as coal, and/or petroleum, were detected in one or more samples above their respective UUSCOs and/or RRSCOs.

Specifically, benzo(a)anthracene (maximum concentration of 41.8 mg/kg), benzo(a)pyrene (maximum concentration of 39.5 mg/kg), benzo(b)fluoranthene (maximum concentration of 54.5 mg/kg) were detected exceeding there RRSCO of 1 mg/kg. Benzo(k)fluoranthene (maximum concentration of 16 mg/kg), and chrysene (maximum concentration of 39.6 mg/kg) were detected exceeding there RRSCO of 3.9 mg/kg. Dibenzo(a,h)anthracene (maximum concentration of 6.1 mg/kg) was detected exceeding its RRSCO of 0.33 mg/kg. Finally, indeno (1,2,3-cd) pyrene (maximum concentration of 18.1 mg/kg) was identified exceeding its RRSCO of 0.5 mg/kg. Theses PAH impacts were detected site-wide with no discernable horizontal or vertical pattern or distribution.

- PCBs: PCBs were not detected above laboratory detection limits in any of the analyzed soil samples;

- Pesticides: 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT were detected above their respective UUSCOs, but below their respective RRSCOs. Theses pesticide impacts were detected site-wide at varied depth with no discernable pattern or distribution.

- Metals: Barium, cadmium, lead, mercury, selenium, and/or zinc, were detected at concentrations ranging from 0.195 mg/kg to 1,790 mg/kg, above the UUSCOs in 23 of 24 soil samples. Of the UUSCO exceedances, metals were detected at concentrations above the RRSCOs in five samples; specifically, barium (maximum concentration of 1,790 mg/kg exceeding its UUSCO of 350 mg/kg), cadmium (maximum concentration of 8.38 mg/kg exceeding its UUSCO of 2.5 mg/kg), lead (maximum concentration of 1,500 mg/kg exceeding its UUSCO of 63 mg/kg), and mercury (maximum concentration of 1.83 mg/kg exceeding its UUSCO of 0.18 mg/kg). Theses metals impacts were detected site-wide with no discernable horizontal or vertical pattern or distribution.

Groundwater

Three temporary monitoring wells were installed, and three groundwater samples were collected. Exceedances to the NYSDEC Technical & Operational Series (TOGS) Class GA Ambient Water Quality Standards (AWQS) are the following:

- VOCs: The VOC PCE was detected in all three groundwater samples at concentrations between 18.9 micrograms per liter (µg/L) and 25.5 µg/L, above its AWQS of 5 µg/L. No other VOCs were detected above their respective AWQS in the analyzed groundwater samples. Higher PCE concentrations were detected on the western edge of the Site.

- SVOCs: No SVOCs were detected above their respective AWQS in the analyzed groundwater samples.

- PCBs/Pesticides: Pesticides and PCBs were not detected in any of the analyzed groundwater samples.

- Metals: Metals were detected in the unfiltered (total) analysis of the groundwater samples, and up to 12 metals were detected in the filtered (dissolved) analysis. Iron was detected in MW-11-20171211 (total) at a concentration of 644 µg/L, above its AWQS of 300 ug/L. Sodium was detected in all three groundwater samples both total and dissolved at maximum concentration of 118,000 µg/L, above its AWQS of 20,000 ug/L.

Soil Vapor:

Ten soil vapor collection points were installed at a depth of 5 feet below surface grade and sampled for VOC analysis or EPA TO-15. Detection of VOCs are the following:

- Chlorinated VOCs (including chloroform, methylene chloride, TCE, PCE, and trichlorofluoromethane) were detected at concentrations between 1.12 µg/m3 and 277 µg/m3. PCE was detected in SV-1-20171129 and SV-2-20171129 at concentrations of 277 and 43.4 µg/m3, respectively. TCE was detected in SV-1-20171129 and SV-2-20171129 at concentrations of 10.2 and 8.06 µg/m3, respectively. TCE was detected in three of ten samples at 10.2 µg/m3, 8.06 µg/m3, 1.61 µg/m3. Overall the highest chlorinated VOC impacts were identified on the western side of the Site.

- Carbon Tetrachloride was detected in one of ten samples at 25.2 µg/m3 on the western side of the Site.

- VOCs associated with petroleum hydrocarbons including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene, heptane, and n-hexane were detected at concentrations between 2.9 micrograms per cubic meter (µg/m3) and 315 µg/m3.

Conclusions and Recommendations

Soil samples results were compared to NYSDEC UUSCOs and RRSCOs as presented in 6 NYCRR Part 375-6.8. VOCs were detected in 20 of 24 soil samples, including low concentrations of acetone, chloroform, chloromethane, methyl chloride, 1,2-dimethylbenzene, and tetrachloroethene, below their respective UUSCOs and RRSCOs. Seven polycyclic aromatic hydrocarbons (PAHs) were detected in one or more samples above their respective UUSCOs and/or RRSCOs including: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo (a,h) anthracene, and indeno (1,2,3-cd) pyrene.

Metals, including barium, cadmium, lead, mercury, selenium, and/or zinc, were detected above the UUSCOs in 23 of 24 soil samples. Of the UUSCO exceedances, metals were detected at

concentrations above the RRSCOs in five samples; specifically, barium, cadmium, lead and mercury.

Select pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected above their respective UUSCOs, but below their respective RRSCOs. PCBs were not detected above laboratory detection limits in any of the analyzed soil samples.

Groundwater sample analytical data was compared to NYSDEC AWQS. The VOC PCE was detected in all three groundwater samples. No other VOCs were detected above their respective AWQS in the analyzed groundwater samples. No SVOCs were detected above their respective AWQS in the analyzed groundwater samples. Up to 15 metals were detected in the unfiltered (total) analysis of the groundwater samples, and up to 12 metals were detected in the filtered (dissolved) analysis. Pesticides and PCBs were not detected in any of the analyzed groundwater samples.

Twenty-six VOCs were detected in the 10 soil vapor samples. VOCs associated with petroleum include benzene, toluene, ethylbenzene, xylenes, 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene, heptane, and n-hexane. Chlorinated VOCs include chloroform, methylene chloride, TCE, PCE, and trichlorofluoromethane. Other VOCs included 2-butanone, acetone, and carbon disulfide. The results of the soil vapor sampling showed elevated levels of benzene, ethylbenzene, TCE and PCE.

2.4 Geologic Setting

Regional surface topography slopes slightly down to the west. Based on the U.S. Geological Survey – Brooklyn, New York 2013 Quadrangle map, the Property is approximately 40 feet above the North American Datum of 1983 (an approximation of mean sea level). Based on the Phase II investigation conducted by AKRF, the stratigraphy of the Site, from the surface down, consists of approximately 6 to 12 feet of fill material (sand with varying amounts of gravel, brick, coal ash, glass and wood), underlain by native sand with varying amounts of silt and gravel. During the Phase II soil borings, groundwater was encountered at depths ranging from 35.8 to 36.5 feet below grade. AKRF reported that bedrock was not encountered and that based on USGS reports, bedrock is expected to be between approximately 300 and 500 feet below grade surface.

SESI conducted a geotechnical investigation at the Site for the proposed development during August 2017 and a supplemental filed investigation during March and April 2018. Nine soil borings (B1 through B9) were drilled to a depth of 52 feet below grade. Temporary monitoring wells were installed in three of the nine borings. The March and April 2018 supplemental investigation consisted of drilling four additional soil borings and three test pits.

The results of the geotechnical investigations are presented in the Geotechnical Investigation Report prepared by SESI dated August 23, 2017 (Supplemental Data added May 9, 2018). This investigation revealed that fill material was even deeper in geotechnical borings B-4, B-7, and B-10 on the eastern portion of the Site to depths of 5 to 21 ft-bg. The fill contains sand soil, with small, but varying amounts of silt and gravel, mixed with brick, concrete, asphalt, and wood.

Natural glacial outwash sand soils were encountered beneath the existing fill and extended to the bottoms of the borings. These sand soils mostly consist of coarse-fine sands, with smaller but varying amounts of silt and gravel. Groundwater was encountered at a depth of 35 feet below grade in the temporary monitoring wells and the borings. The depth to groundwater should be expected to vary seasonally and with wet weather. Bedrock was not encountered in any of the borings.

2.5 Hydrogeologic Setting

The depth to groundwater was measured from three monitoring wells (MW-1, MW-4, and MW-11) and varied from 35.8 feet below grade (MW-11) in the southeastern portion of the Site to 36.5 feet below grade (MW-1) in the northwestern portion of the Site. According to USGS mapping, groundwater likely flows in a northerly direction toward Newtown Creek, located approximately 2 miles northwest of the Site. However, local groundwater flow direction can be affected by subsurface openings or obstructions such as basements and utilities, groundwater pumping and other factors.

2.6 Subsurface Features

A geophysical survey was conducted by Hager-Richter Geoscience, Inc. (Hager-Richter) on November 27, 2017. No utilities or major anomalies were detected during the geophysical survey. Buried demolition debris associated with the former buildings and historic fill was encountered at the Property. Electronic DOB records included an oil burner application for 1512 Broadway, however, no anomalies indicative of an abandoned heating oil UST was detected during this investigation.

2.7 Summary of Environmental Assessment

Based on the investigations conducted to date, the primary contaminants of concern (COCs) are anticipated to be chlorinated VOCs, petroleum-based compounds such as benzene, metals and pesticides. COCs will be refined based on the RIR results.

Soil: Exceedances of the UUSCOs and/or the RRSCOs for SVOCs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, benzo(a,h)anthracene and indeno(1,2,3-cd)pyrene. Pesticides exceedances include 4,4'-DDD, 4,4'-DDE and 4,4'-DDT. Metals exceedances include barium, max 1,790 ppm, cadmium, max 8.38 ppm, lead, max 1,500 ppm, mercury, max 0.647 ppm, selenium, max 8.39 ppm and zinc, max 1,680 ppm.

Groundwater: Exceedances of the NYSDEC AWQS have been detected at the Site and include PCE.

Soil Vapor: Elevated soil vapor levels were detected for PCE, TCE, Carbon Tetrachloride and BTEX.

3.0 FIELD REMEDIAL INVESTIGATION

Soil borings and groundwater monitoring wells are proposed below based on the following rationale to complete the nature and extent delineation of contaminated soil, groundwater and soil vapor on the Site.

3.1 Soil Remedial Investigation

Surface soil samples are not being collected because the proposed redevelopment is anticipated to cover the entire site. If the anticipated future conditions change and existing soil is to remain exposed at the site, surface soil samples may need to be collected and analyzed.

Eighteen soil borings will be performed on the Site in a 50-foot grid pattern to evaluate and delineate soil contamination for the Former Dry Cleaner and Other Former Manufacturing Operations (REC 1), and the Demolition Debris and Historic Fill (REC 2). The borings along the Site boundary will be used to evaluate if any potential off-site impacts are impacting on-site soil contamination (REC 3). The proposed soil boring locations are shown on **Figure 3.1.**

The borings will be advanced using direct-push or other drilling methods as needed. The borings will extend to a depth of 15 to 20 feet below ground surface, below the groundwater table. Soil samples will be at a minimum of sample per 5-foot depth interval biased based on field screening that includes visual observations, photoionization detector readings (PID) readings and olfactory observations. Boring logs documenting soil classifications, PID readings, and visual observations will be provided in the final report.

All soil samples will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for TCL + 30/TAL metals including VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, and TAL metals by EPA Methods 6010, 7471, and 9012. Category B deliverable will be requested on each sample chain of custody. In addition, QA/QC samples will be collected and analyzed as specified in the QAPP. Specifically, the number of duplicate, spiked and blank samples analyzed will a minimum of 1 duplicate for every 20 samples. The inclusion and frequency of analysis of field blanks will be on the order of one per every 20 soil samples but not more than one per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks (water matrix) or field blanks (soil, sediment matrix).

3.2 Groundwater Remedial Investigation

To investigate any impact on the groundwater from the Former Dry Cleaner and Other Former Manufacturing Operations (REC 1), and the Demolition Debris and Historic Fill (REC 2) off-site impacts (REC 3), six (6) groundwater monitoring wells (MW-1D, MW-2, MW-3, MW-5, MW-6 and MW-7) will be installed and the groundwater as shown on **Figure 3.2**. Two of the proposed wells will be installed and sampled in the hydraulically upgradient portion of the Site to evaluate groundwater quality entering the Site from potential off-site impacts. In addition, the wells will also be used to establish groundwater flow direction beneath the Site.

Each monitoring well will be constructed with 2-inch inside diameter well screens. The well screening will intersect the water table and extent to the bottom of the well boring. The annular space of each well will be filled with well sand to at least 2' above the screening and will be sealed with hydrated bentonite or cement grout. Finally, each monitoring well will be completed with a flush-mount road-box or stickup as necessary. A typical boring and well construction log is provided in **Appendix G**.

The Groundwater RI is conducted to achieve the following:

- delineate the nature and extent of REC-specific contaminants in the site groundwater;
- identify actual or potential impacts to sensitive receptors, e.g. surface water;
- determine whether the contaminant plume is expanding, contracting or stable; and
- gather sufficient data to determine groundwater flow direction and contour map and evaluate groundwater Remedial alternatives, including, as appropriate, MNA.

It will also provide information on the background quality of the groundwater flowing into the Site.

All the wells will be surveyed for location and elevation. The survey data will be provided pursuant to the DER-10 requirements in an acceptable format (e.g., North America Datum 83 [NAD83]). The wells will be gauged for groundwater depth to determine the groundwater elevation. The Site-specific groundwater flow direction and gradient will be determined based on the latest elevation data and summarized in the Remedial Investigation Report (RIR). The proposed well locations are shown on **Figure 3.2**.

One round of sampling will be conducted from the newly installed wells. The data will be analyzed to determine whether groundwater contamination exists, the magnitude and the extent of the potential contaminant plume.

In addition to the analytical data, field measurements and chemical analyses will be conducted to characterize the impacted groundwater.

The proposed groundwater monitoring wells and the rationale for their locations are presented in the table below:

Well Name	Location	Rationale
MW-1D	Former Dry Cleaner Location	Vertically delineate PCE in groundwater
MW-2	Former Dry Cleaner Location	Evaluate groundwater quality in the dry cleaner area at the downgradient property boundary
MW-3	Along the Southwestern Site Property Line	Evaluate groundwater quality entering the site from the south.
MW-5	Along the Southern Site Property Line	Evaluate groundwater quality entering the site from the south
MW-6	Along the Northeast Property Line	Evaluate groundwater quality leaving the site along the northeast property line.

Well Name	Location	Rationale
MW-7	West/central portion of Site	Evaluate groundwater quality east of former dry cleaner

The wells will be screened at the sample depth as the existing wells (35-50 feet below grade) with the exception of monitoring well MW-1D which will be located at the former dry cleaner near MW-1. Monitoring well MW-1D will be screen deeper to vertically delineate the PCE plume (approximately 60 to 75 feet below grade). All the wells will be sampled for TCL + 30/TAL metals including VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, and TAL metals by EPA Methods 6010, 7471, and 9012. In addition, monitoring wells MW5, MW6 and MW2, which are respectively located upgradient, middle and downgradient of the Site, will be analyzed for 21 per- and polyfluoroalkyl substances (PFASs) and 1-4,dioxane. SESI's Groundwater Sampling Plan for Emerging Contaminants is presented in **Appendix F.**

All groundwater samples will be analyzed by a NYSDOH ELAP certified laboratory Category B deliverable will be requested on each sample chain of custody. In addition, QA/QC samples will be collected and analyzed as specified in the QAPP. Specifically, the number of duplicate, spiked and blank samples analyzed will a minimum of 1 duplicate for every 20 samples. For the aqueous matrix field blanks will be collected at a frequency of one per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks water matrix.

The wells will be sampled using the low flow technique. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. QED bladder pumps are used for this method. The pump intake is lowered to the mid-point of the water column. At the initiation of low flow purging a water level is recorded as well as field parameters. Field parameters are then monitored every five minutes during low flow purging using a flow through cell. When three consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells are used so continuous real time readings are made. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing.

In addition to water samples collected from the monitoring wells, two types of "blanks" will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 ml VOA vials, as follows:

A trip blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, deionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for TCL volatiles is planned (water matrix only). The trip blank will be analyzed for TCL volatile organic compounds as a measure of the internal laboratory procedures and their effect on the results.

In addition to the analytical data, field measurements and chemical analyses will be conducted to characterize the impacted groundwater.

The proposed groundwater monitoring wells and the rationale for their locations are presented in the table below:

3.3 Soil Vapor Investigation

Ten soil vapor samples (SV-1 through SV-5 and SV-7 through SV-11) were collected from the Site by AKRF as part of the March 2017 RIR. The results of the soil vapor sampling showed elevated levels benzene, ethylbenzene, TCE and PCE were detected site-wide.

SESI will collect twelve (12) additional soil vapor samples from 12 soil vapor points. The proposed soil vapor point locations are shown on **Figure 3.3**. The purpose of the soil vapor points is to assess the potential for vapor intrusion into future buildings.

The soil gas samples will be collected in accordance with the procedures of the NYS Department of Health October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Specifically, the soil vapor probes will be advanced using direct push sampling equipment and samples will be collected by installing vapor implants. The soil vapor depth will be based on final construction and development plan. Prior to sample collection the collection depth will be submitted to the NYSDEC and NYSDOH for pre-approval. A sacrificial vapor point connected to flexible tubing will be inserted into the borehole. The annular space of the borehole will be filled sand and the surface will be sealed with bentonite to seal the surface. Prior to sampling the tubing system will be purged of ambient air with a low-flow pump.

The soil vapor samples will be collected into laboratory supplied 1-liter, stainless-steel, summa canisters. The summa canisters will be equipped with a manometer to verify the canister is under vacuum, and a flow controller to ensure that the flow rate does not exceed 200 ml/min. A sample log sheet will be maintained summarizing sample identification, date and time of sample collection, sampling depth, identity of samplers, sampling methods and devices, soil vapor purge volumes, volume of the soil vapor extracted, vacuum of canisters before and after the samples are collected, apparent moisture content of the sampling zone, and chain of custody protocols. The vapor samples will be sent to a certified laboratory for analysis of VOCs in accordance with EPA Method TO-15.

As part of the vapor sampling, a tracer gas will be used to serve as a quality assurance/quality control (QA/QC) device to verify the integrity of the soil vapor probe seal. Helium will be used as the tracer gas and a box will serve to keep it in contact with the probe during testing. A portable monitoring device will be used to analyze a sample of soil vapor for the tracer prior to sampling. If the tracer sample results show a significant presence of the tracer, the probe seals will be adjusted to prevent infiltration. As the conclusion of the sampling round, tracer monitoring will be performed a second time to confirm the integrity of the probe seals.

In addition to the soil vapor one ambient air sample will be collected with a 6-liter suma canister set at flow not to exceed 200 ml/min.

4.0 DECONTAMINATION and IDW

Equipment utilized for ground intrusive activities (i.e. borings and wells) will be decontaminated between each boring. Equipment utilized for sample collection (i.e. spoons, trowels) will be decontaminated between each sample. Appropriate decontamination areas will be established to support work being conducted in each area of the Site.

All investigative derived waste (IDW) of soil cuttings and purged groundwater will be containerized, sampled, and properly disposed of pursuant to DER-10 requirements. IDW includes contaminated personal protective equipment (PPE). Disposable sampling equipment, including macro core liners, spoons, gloves, bags, paper towels, etc. that come in contact with environmental media will be double bagged and disposed of as municipal trash in a facility trash dumpster as non-hazardous refuse.

5.0 SURVEY

After the RI sampling scope is completed, a survey will be completed, which includes the locations and elevations of all the monitoring wells and all the soil samples.

6.0 HUMAN HEALTH EXPOSURE ASSESSMENT

A qualitative human health exposure assessment will be performed for the Site in accordance with the New York State Department of Health's Qualitative Human Health Exposure Assessment guidance document. Sampling data will be reviewed along with the physical conditions of the contaminant sources or physical hazards near the Site. Potential on-site and off-site exposures will be evaluated. The Exposure Assessment will describe the nature and size of the population exposed, or potentially exposed, to the contaminants that are present at, or migrating from the Site, and will characterize the exposure setting, identify exposure pathways and evaluate contaminant fate and transport.

Several objectives will be met by the exposure assessment. First, applicable Site information and characterization data for environmental media of concern will be evaluated. Applicable Standards, Criteria, and Guidance (SCGs) including Part 375 Soil Cleanup Objectives (SCOs) and CP-51 SCOs for soil and Technical and Operational Guidance Series (TOGS) Class GA water quality standards and guidance values for groundwater and surface water will be applied.

An assessment of current and future Site activities and Site use will be conducted in relation to potential human exposure. Next, potential exposure pathways will be identified, and each aspect of the potential exposure pathway will be evaluated. Soil and groundwater contamination will be addressed and the impact of remediation on future exposure scenarios will be analyzed.

7.0 FISH AND WILDLIFE IMPACT ANALYSIS

A Fish and Wildlife Resources Impact Analysis (FWIA) Decision Key will be completed by SESI prior to the excavation work to determine if a FWIA is needed. Contaminant migration pathways and any fish and wildlife exposure pathways will be identified. As stated in the FWIA, "if no

resources are associated with the site or if there is no potential for contaminant migration to the resources, then only the necessary information to support that conclusion should be provided." If the results from the RI, along with site inspections, support this conclusion, documentation will be submitted with the RI Report.

If resources are identified, or migration pathways exist, a FWIA will be completed and submitted as part of the RI Report. The FWIA would be completed to identify actual or potential impacts to fish and wildlife resources from Site contaminants. The FWIA would qualitatively determine the route, intensity, frequency, and duration of actual or potential exposures to chemicals, describe the nature and size of the population exposed to the contaminants that are present at or migrating from the site, and characterize the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport.

A Fish & Wildlife assessment is not anticipated for this Site as it is located in an urban setting.

8.0 DUSR

Following the completion of the laboratory analysis program, a Data Usability Summary Report (DUSR) will be completed for the lab data and included as part of the RI Report. The DUSR will include available datasets from previous investigations, as well as data from this phase of Site characterization. The DUSR is carried out as specified in DER-10 to evaluate the quality control measures that were implemented during the field and laboratory analytical programs, with the objective of determining whether the reported analytical data are representative and usable for decision making. The DUSR will evaluate whether the data are technically defensible (i.e. were all analytical data requirements met and documented?). Data usability analysis reviews the Site data to determine whether they are adequate to draw conclusions regarding the nature and extent of contamination.

The items that will be reviewed as part of the DUSR will include the following:

- Completeness (number of samples collected and analyzed compared to plans)
- Chains of custody are complete and accurate
- Holding times
- Instrument calibration
- Relative percent difference between field duplicates
- Reasonableness of data (e.g. relationships between total and soluble analytes)
- Blank contamination

The DUSR will be conducted in accordance with guidelines provided under Appendix 2B of DER-10. The site-specific Quality Assurance Project Plan (QAPP) is included in **Appendix B**.

9.0 REMEDIAL INVESTIGATION REPORT

Following the completion of the RI activities and the receipt of sample results, a Remedial Investigation Report (RIR) report will be prepared. The RIR report will summarize the activities

completed during the RI including analytical results, well construction and sampling logs, waste characterization information for disposal purposes, conclusions from the FWIA if necessary, a Data Usability Summary Report (DUSR) and laboratory data packages. Scaled figures showing the sample locations and areas of contamination exceeding applicable standards will be prepared for soil, soil vapor and groundwater. Sampling results will be summarized and discussed and the need for additional investigation and remediation will be evaluated. In addition, analytical summary tables will be prepared for soil, soil vapor, and groundwater compared to applicable standards.

The RIR will also include a summary of the site history, previous investigations, description of site conditions, analysis of the results, conclusions and recommendations, RAOs, nature and extent of contamination, identify exposure pathways via a Qualitative Human Health Exposure Assessment.

Analytical data collected during the Remedial Investigation and previous data used for the selection of the remedy will be submitted in the NYSDEC approved Electronic Data Deliverable (EDD) format. EDDs will be prepared using the DEC's Environmental Information Management System (EIMS) database software application EQuIS™ for submission.

10.0 QUALITY ASSURANCE/QUALITY CONTROL

Quality Assurance and Quality Control (QA/QC) is addressed in the Quality Assurance Project Plan (QAPP) included as **Appendix B**. The QAPP outlines procedures to be followed for sampling and analysis to ensure quality of the results. A DUSR will be prepared with the final reports to document the reliability of the sample results.

11.0 HEALTH AND SAFETY PLAN

A Site-specific Health and Safety Plan (HASP) has been prepared and is included as **Appendix C**. All on-site personnel and visitors involved in the RI will be required to read and sign the HASP prior to entry of the Site.

12.0 COMMUNITY AIR MONITORING

A Community Air Monitoring Plan (CAMP) is provided as **Appendix D**, in accordance with DER-10 requirements for remedial investigation. The CAMP sets forth air monitoring procedures that will be utilized to measure airborne emissions during the RI, in order to minimize the release of contaminants to off-Site areas.

13.0 CITIZEN PARTICIPATION

Citizen participation activities will be performed throughout the RI process to involve and inform the public. The specific citizen participation activities to be performed are outlined in the Citizen Participation Plan (CPP), included as **Appendix E**.

FIGURES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 18T
10 000-foot ticks: New York Coordinate System of 1983 (Long Island zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, June 2013
Roads.....U.S. Census Bureau, 2015 - 2016
Names.....GNIS, 2016
Hydrography.....National Hydrography Dataset, 2013
Contours.....National Elevation Dataset, 2015
Boundaries.....Multiple sources; see metadata file 1972 - 2016

Wetlands.....FWS National Wetlands Inventory 1977 - 2014

UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
WL WK
Grid Zone Designation 18T

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Weehawken
2 Central Park
3 Flushing
4 Jersey City
5 Jamaica
6 The Narrows
7 Coney Island
8 Far Rockaway

ADJOINING QUADRANGLES

BROOKLYN, NY
2016

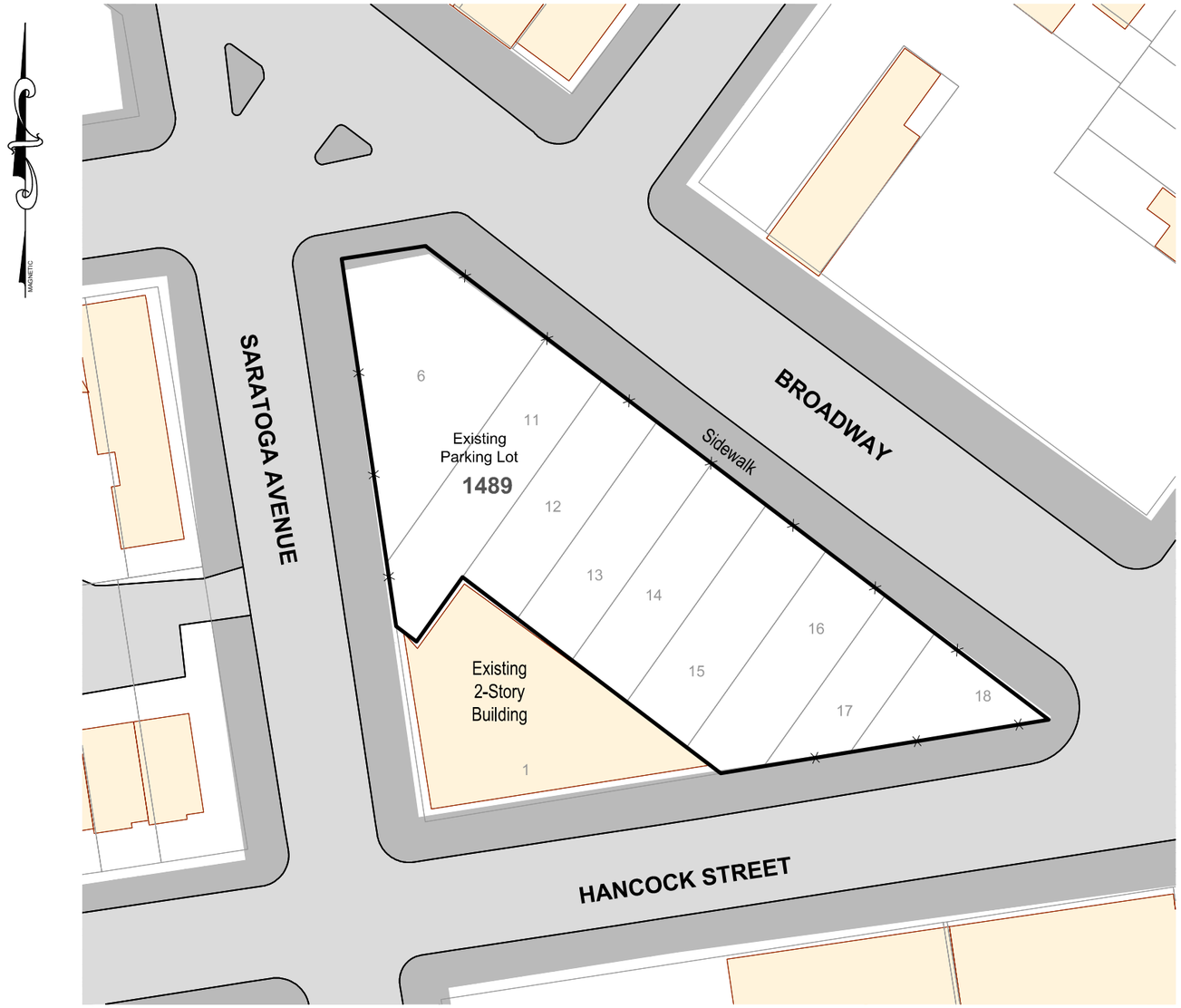
FIG-2.1

1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

SITE LOCATION MAP

SESI
CONSULTING
ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

DRAWN BY: yy
CHECKED BY: SG
SCALE: N.T.S.
DATE: 12/13/18
JOB NO.: 9753



SCALE: 1"=50'

0 50 100

LEGEND

———	PROJECT SITE BOUNDARY
1489	TAX BLOCK NUMBER
6, 11-18	LOT BOUNDARY AND TAX LOT NUMBER

N:\ACAD\9753\9753 FIG-2.2 SITE PLAN.DWG 12/13/18 11:35:16AM, jenny, LAYOUT:FIG-2.2

dwg by: yy
chk by: FD
scale: 1" = 50'
date: 12/13/18

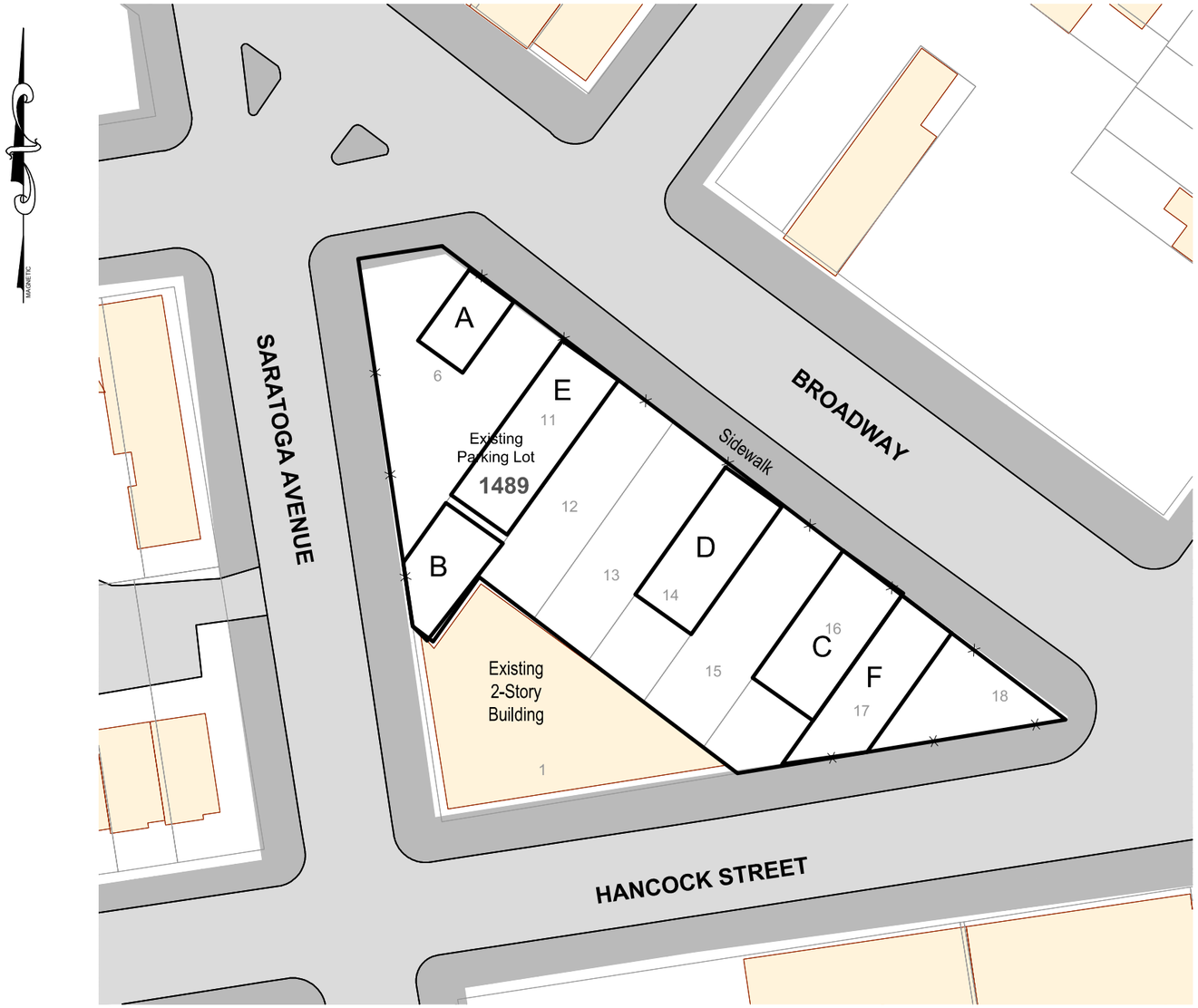
SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: 1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

drawing title: SITE PLAN

job no: 9753
drawing no:

FIG-2.2



SCALE: 1"=50'

0 50 100

NOTES:
A = HISTORICAL DRY CLEANER - 7 SARATOGA AVE.
B = HISTORICAL MANUFACTURING - 15 SARATOGA AVE.
C = HISTORICAL DRY CLEANER /DRESS MANUFACTURING - 1520 BROADWAY
D = HISTORICAL PRINTER - 1516 BROADWAY
E = HISTORICAL WATCH AND JEWELRY REPAIR - 1510 BROADWAY
F = HISTORICAL PAINTS AND OILS - 1522 BROADWAY

LEGEND

———	PROJECT SITE BOUNDARY
1489	TAX BLOCK NUMBER
6, 11-18	LOT BOUNDARY AND TAX LOT NUMBER

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: yy
chk by: FD
scale: 1" = 50'
date: 12/13/18

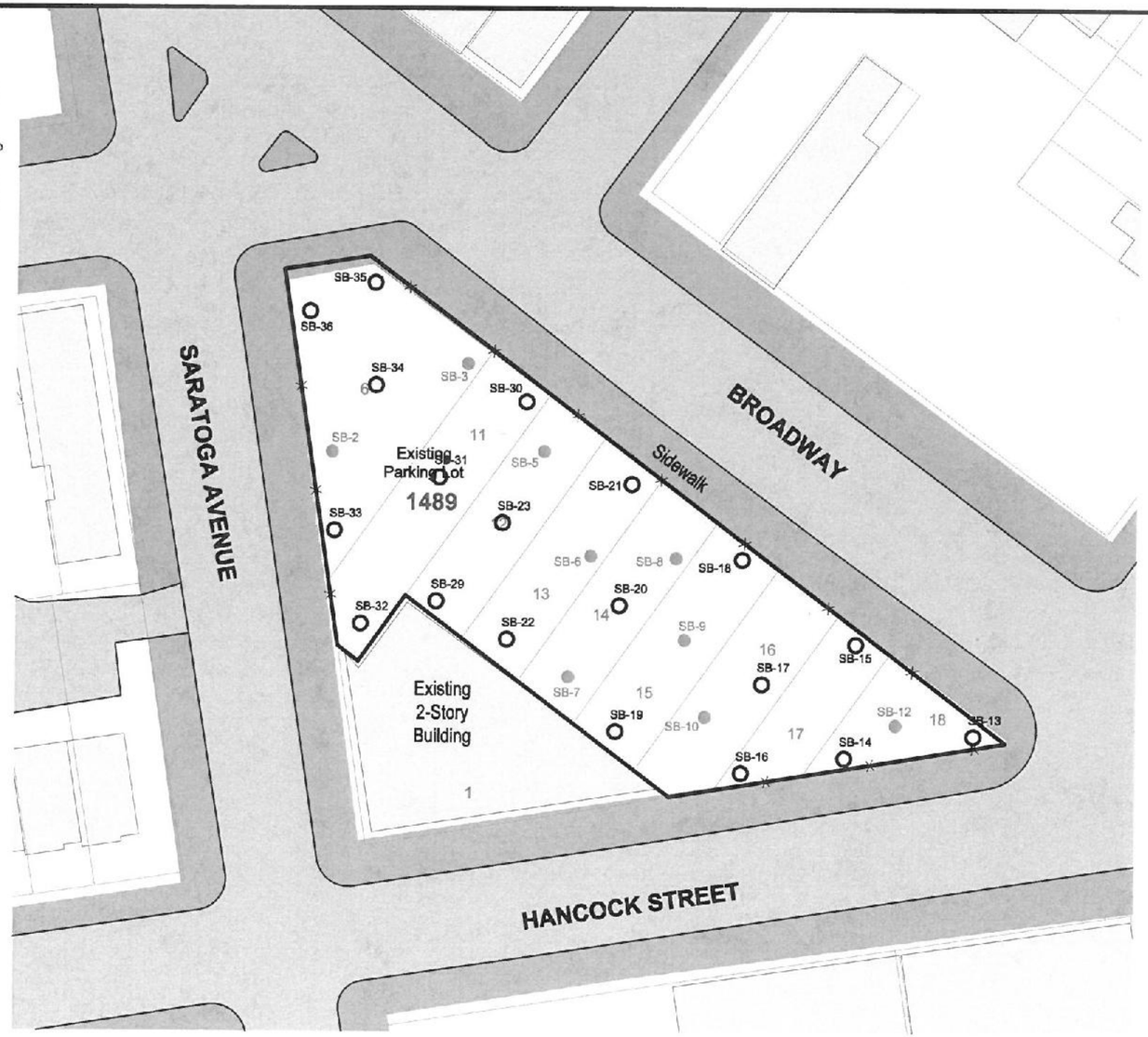
project:
1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

drawing title:
REC LOCATION PLAN

job no: 9753
drawing no:

FIG-2.3

N:\ACAD\9753\9753 FIG-2.3 REC LOCATION PLAN.DWG 12/13/18 11:33:51AM, jenny, LAYOUT:FIG-2.3



SCALE: 1"=50'

0 50 100

LEGEND

- PROJECT SITE BOUNDARY
- 1489 TAX BLOCK NUMBER
- 6, 11-18 LOT BOUNDARY AND TAX LOT NUMBER
- SB-1 EXISTING OF SOIL BORING LOCATION (AKRF)
- SB-36 PROPOSED SOIL BORING LOCATION
- FENCE

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: yy
chk by: FD
scale: N.T.S.
date: 11/02/18

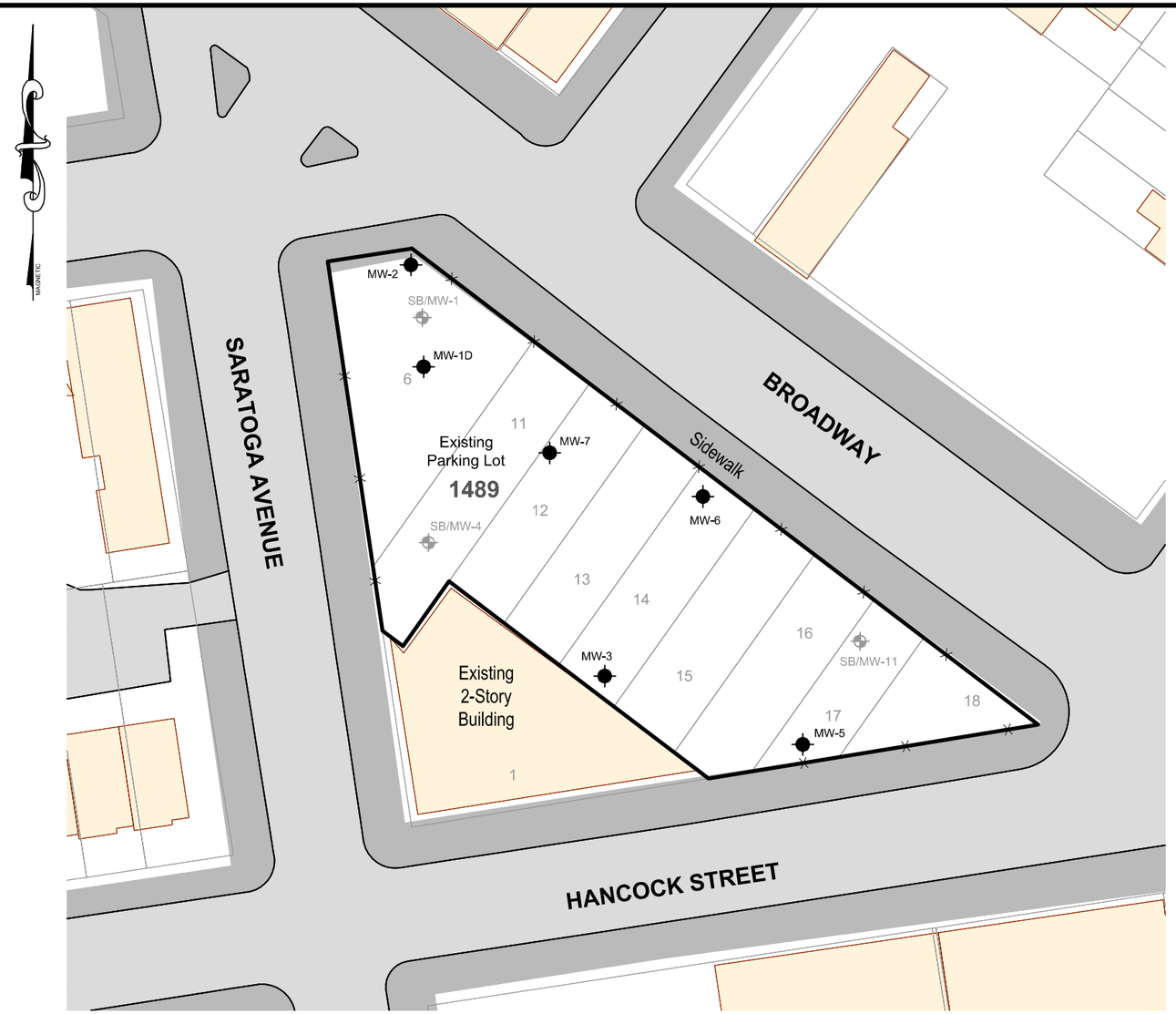
project: 1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

drawing title: PROPOSED SOIL BORING LOCATION PLAN

job no: 9753
drawing no:

FIG-3.1

N:\ACAD\9753\9753 PROPOSED SOIL BORING LOCATION PLAN.DWG 11/05/18 01:05:12PM, Jenny, LAYOUT:FIG-3.1



SCALE: 1"=50'

0 50 100

LEGEND

- PROJECT SITE BOUNDARY
- 1489 — TAX BLOCK NUMBER
- 6, 11-18 — LOT BOUNDARY AND TAX LOT NUMBER
- SB/MW-11 — EXISTING MONITORING WELL LOCATION
- MW-5 — PROPOSED MONITORING WELL LOCATION
- FENCE

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SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: yy
chk by: FD
scale: N.T.S.
date: 2/1/19

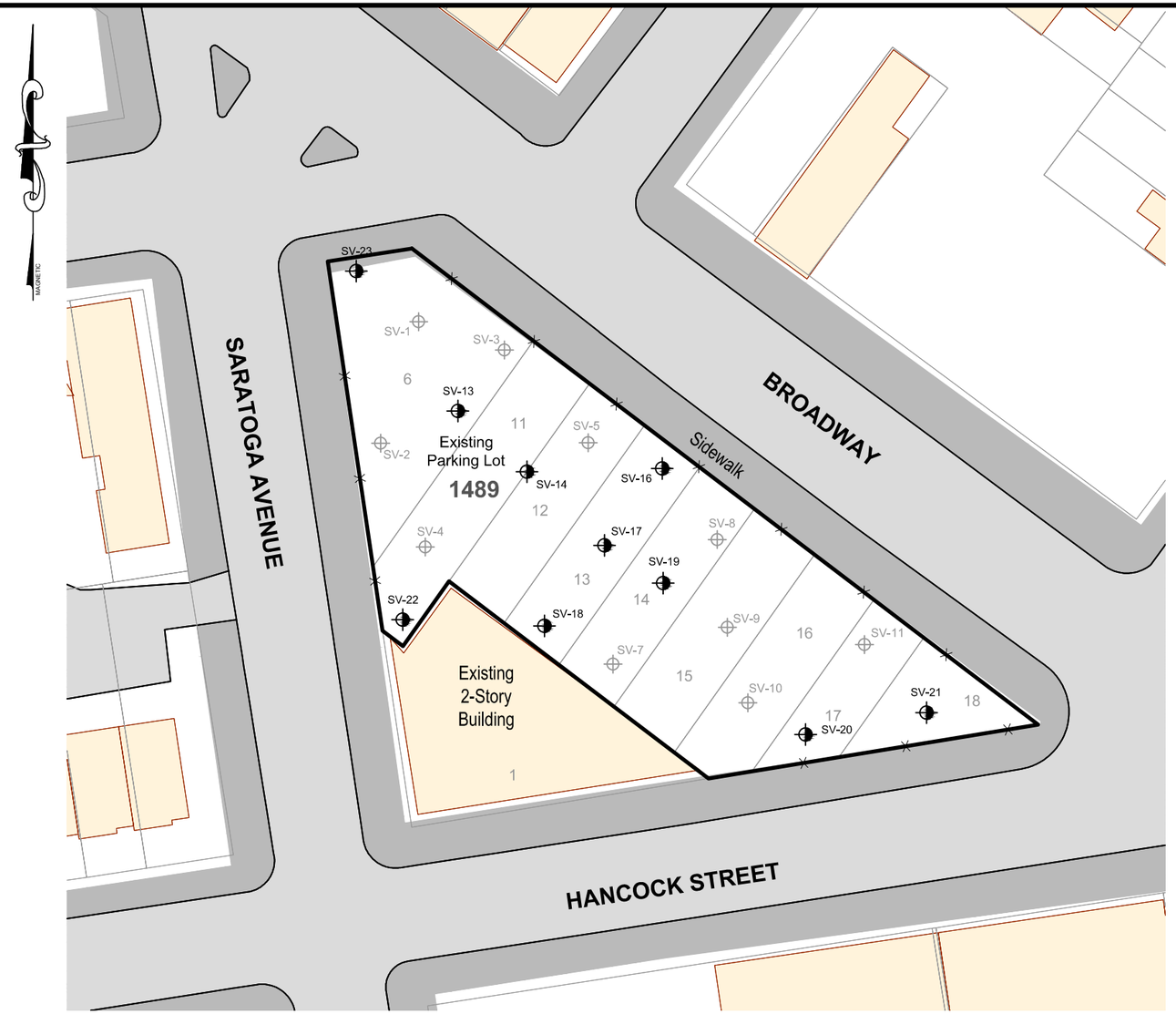
project: 1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

drawing title: PROPOSED MONITORING WELL LOCATION PLAN

job no: 9753
drawing no:

FIG-3.2

N:\ACAD\9753\9753 PROPOSED SOIL BORING LOCATION PLAN.DWG 02/01/19 11:37:15AM, fl, LAYOUT:FIG-3.2



SCALE: 1"=50'

0 50 100

LEGEND

- PROJECT SITE BOUNDARY
- 1489 TAX BLOCK NUMBER
- 6, 11-18 LOT BOUNDARY AND TAX LOT NUMBER
- SV-1 EXISTING OF SOIL VAPOR LOCATION (AKRF)
- SV-20 PROPOSED SOIL VAPOR LOCATION
- FENCE

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: yy
chk by: FD
scale: N.T.S.
date: 2/1/19

project: 1510 BROADWAY
DRY CLEANERS SITE
BROOKLYN, NEW YORK

drawing title: PROPOSED SOIL VAPOR POINT LOCATION PLAN

job no: 9753
drawing no:

FIG-3.3

N:\ACAD\9753\9753 PROPOSED SOIL BORING LOCATION PLAN.DWG 02/01/19 11:39:05AM, fl, LAYOUT:FIG-3.3

APPENDIX A:

PREVIOUS ENVIRONMENTAL REPORTS

(ELECTRONIC)

MWBE Site C
7 Saratoga Avenue and 1510-1524 Broadway

BROOKLYN, NEW YORK

Phase I Environmental Site Assessment

AKRF Project Number: 20568.03

Prepared for:

NYC Mayor's Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, NY 10038

Prepared by:

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

MARCH 2017

AKRF

Environmental and Planning Consultants

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New York, NY 10016
tel: 212 696-0670
fax: 212 213-3191
www.akrf.com

March 3, 2017

Ms. Tara Ostock, Project Manager
NYC Mayor's Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, NY 10038

Re: Phase I Environmental Site Assessment
MWBE Site C
7 Saratoga Avenue and 1510-1524 Broadway, Brooklyn, New York
AKRF Project Number 20568.03

Dear Ms. Ostock:

AKRF, Inc. (AKRF) 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 met the requirements of American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 unless noted otherwise in Section 9.0: "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.

Marc S. Godick, LEP
Senior Vice President

Deborah Shapiro, QEP
Vice President

Enc.

EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by the New York City Mayor's Office of Environmental Remediation (NYCOER) to perform a Phase I Environmental Site Assessment of the MWBE Site C property located at 7 Saratoga Avenue and 1510-1524 Broadway (Tax Block 1489, Lots 6 and 11-18) (the Property) in the Ocean Hill neighborhood of Brooklyn, New York. The Property consists of an approximately 20,000-square foot undeveloped parcel. The objective of this assessment was to identify any potential environmental concerns associated with the Property resulting from past or current usage of the Property or neighboring properties.

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 9.0. 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.

A Tier 1 Vapor Encroachment Screen was also conducted in accordance with ASTM Standard E2600-15, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*. The term "Vapor Encroachment Condition" means the presence or likely presence of vapors from chemicals of concern (COC) in the subsurface of a property caused by the release of vapors on or near the property.

At the time of AKRF's reconnaissance, the Property included an undeveloped lot secured by a chain link fence. The surrounding area was mixed-use commercial and residential. A summary of the assessment findings is presented below:

Recognized Environmental Conditions (RECs)/Vapor Encroachment Conditions (VECs)

- Historical Sanborn maps and City Directories indicated that a dry cleaner operated at 7 Saratoga Avenue from approximately 1949 to 1965. Additionally, Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949.
- Historical Sanborn maps and electronic Buildings Department (DOB) records indicated that the Property was previously developed with commercial and residential structures. The buildings dated to before 1888 and were demolished by 1985. Buried demolition debris associated with the former buildings may be present at the Property, as could include historical fill of unknown origin and possibly abandoned underground storage tanks (USTs). Electronic DOB records included an oil burner application for 1512 Broadway.
- Industrial, automotive, and dry cleaning uses were also noted in the surrounding area, including garages with gasoline tanks south/west-adjacent to the Property on the 1932 map and approximately 75 feet south of the Property on maps from 1932 to 1962. Auto repair was shown with one of the garages 75 feet south of the Property and approximately 195 feet southwest of the Property on the 1962 map. Potential auto repair was identified in the City Directories on the east-adjacent block from

1965 to 1985. Substations were identified on the south- and northwest-adjacent blocks from 1908 to 2006 and 1976 to 2007 maps, respectively. A chemical and bleach bottling facility was noted approximately 250 feet northwest of the Property on maps from 1951 and 1962, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979. Nearby PBS, Spills, and RCRA listings with limited potential to have affect the Property subsurface were identified in the regulatory database search.

Other On-site Environmental Concern (items outside the scope of ASTM E1527-13 such as asbestos containing material [ACM], lead-based paint [LBP] and/or polychlorinated biphenyls [PCBs] in building materials or fill/debris)

- Potential fill materials and/or demolition debris beneath the Property could contain ACM, LBP, and/or PCBs.

RECOMMENDATIONS

- Prior to any future development of the Property that involves subsurface disturbance, a subsurface (Phase II) investigation (e.g., sampling of soil, soil vapor, and groundwater) is recommended prior to such activities to ensure that soil excavation and/or groundwater dewatering activities are conducted in accordance with applicable regulations and to determine if vapor mitigation and/or additional remediation is warranted for the future use of the Property.
- During any future subsurface disturbance, excavated soil should be handled and disposed of properly in accordance with all applicable regulatory requirements. Any evidence of a petroleum spill must be reported to the NYSDEC and addressed in accordance with applicable requirements. If any USTs are encountered, they should be properly assessed, closed, and removed in accordance with state, and local regulations. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering is required during potential future construction activities, water must be discharged in accordance with the New York City Department of Environmental Protection (NYCDEP) and/or New York State Department of Environmental Conservation (NYSDEC) requirements.

TABLE OF CONTENTS

Executive Summary i
1.0 Introduction 1
2.0 Physical Site Description 2
2.1 General Site Conditions 2
2.2 Topography and Hydrogeology 2
2.3 Storage Tanks 3
2.3.1 Underground Storage Tanks (USTs) 3
2.3.2 Aboveground Storage Tanks (ASTs) 3
2.4 Polychlorinated Biphenyls (PCBs) 3
2.5 Lead-Based Paint (LBP) 3
2.6 Utilities 3
2.7 Waste Management and Chemical Handling 3
2.8 Radon 4
3.0 Asbestos-Containing Materials (ACM) 4
4.0 Adjacent Land Use 4
5.0 Property History and Records Review 4
5.1 Prior Ownership and Usage 4
5.1.1 Historical Land Use Maps 4
5.1.2 Historical Aerial Photographs 8
5.1.3 Property Tax Files and Zoning Records 8
5.1.4 Recorded Land Title Records 8
5.1.5 Local Street Directories 8
5.2 Regulatory Review 9
5.2.1 Federal 9
5.2.2 State 10
5.2.3 Local Agency File Review 14
5.2.4 Additional Environmental Record Sources 16
6.0 User-Provided Information 17
7.0 Previous Studies 17
8.0 Vapor Encroachment Screening 18
9.0 Limitations and Data Gaps 18
10.0 Conclusions and Recommendations 19
11.0 Signature Page 21
12.0 Qualifications 22
13.0 References 23

FIGURES

Figure 1 - Property Location
Figure 2 - Property Detail

APPENDICES

Appendix A — Photographic Documentation
Appendix B — Historical Sanborn Maps
Appendix C — City Directories
Appendix D — Regulatory Records Review
Appendix E — Local Records and FOILs

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by the New York City Mayor's Office of Environmental Remediation (NYCOER) to perform a Phase I Environmental Site Assessment of the MWBE Site C property located at 7 Saratoga Avenue and 1510-1524 Broadway (Tax Block 1489, Lots 6 and 11-18) (the Property) in the Ocean Hill neighborhood of Brooklyn, New York. The Property consists of an approximately 20,000-square foot undeveloped parcel. The objective of this assessment was to identify any potential environmental concerns associated with the Property resulting from past or current usage of the Property or neighboring properties. Figure 1 shows the Property location.

The scope of services for this assessment was in conformance with ASTM Standard E1527-13 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice)* and ASTM Standard E2600-15 (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions)*. Any exceptions to, or deletions from, this practice are described in Section 9.0. 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; 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 land use 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

Visual inspection of the Property was performed on January 11, 2017 by Ms. Margo Davis of AKRF. Mr. James Edgeworth III of New York City Housing Preservation and Development (HPD) provided access to the Property. At the time of the inspection, the weather was mostly sunny and approximately 45 ºF with good visibility. The Property was inspected for the presence of stained surfaces and soil, evidence of storage tanks, drums, leaking pipes, transformers, and any other evidence of hazardous material usage and storage on-site. Neighboring properties were also viewed, but only from public rights-of-way. Photographs documenting the inspection are included in Appendix A. The Property detail is shown as Figure 2.

2.1 General Site Conditions

The Property occupied an area of approximately 20,000 square feet and consisted of partially vegetated land, a roll-off dumpster, a metal storage shed, and a portable toilet. The Property was enclosed with a chain-link fence with green privacy screening and a locking entryway on Saratoga Avenue. Concrete-paved sidewalks bounded the Property to the north, east, portions of the western side of the Property, and a brick and cinder-block apparent vacant building bounded the Property to the south and west.

Sparse overgrown vegetation, including trees, grass, shrubs, and weeds, was noted at the Property, primarily around the perimeter. Non-vegetated portions of the Property were gravel and sand covered. Some stockpiles of gravel were noted on the Property. Concrete blocks were observed on the southern portion of the Property. According to Property personnel, the blocks were left on-site by a previous occupant using the area for construction staging and storage. Property personnel indicated that removal of the materials was in the process of being coordinated. Miscellaneous trash was noted across the Property. At the time of the reconnaissance, contractors were conducting work at the Property. Four small (less than 1 gallon) containers of motor oil were observed at the Property, but appeared to be associated with the on-site work. No other debris associated with petroleum or chemical use or storage was observed. The on-site workers were using a roll-off dumpster on the northwestern portion of the Property. A metal shed and a portable toilet was noted on the northwestern perimeter of the Property.

2.2 Topography and Hydrogeology

Regional surface topography slopes slightly down to the west. Based on the U.S. Geological Survey – Brooklyn, New York 2013 Quadrangle map, the Property is approximately 40 feet above the North American Datum of 1983 (an approximation of mean sea level).

Based USGS reports, groundwater is anticipated to be encountered approximately 30 feet below ground surface and flow in a westerly direction toward the East River, located approximately 3 miles west of the Property. However, actual groundwater flow direction can be affected by many

factors, including subsurface openings or obstructions such as basements, utilities, current or past pumping of groundwater, past filling, bedrock geology, tidal fluctuations, and other factors beyond the scope of this assessment. Groundwater in Brooklyn is not used as a source of potable water.

2.3 Storage Tanks

2.3.1 Underground Storage Tanks (USTs)

No evidence of current or former on-site underground storage tanks (USTs) was noted during the site reconnaissance. The Property was not registered with USTs in the New York State Petroleum Bulk Storage (PBS) database. Off-site USTs are discussed in Section 5.2.2.

2.3.2 Aboveground Storage Tanks (ASTs)

No evidence of current or former on-site aboveground storage tanks (ASTs) was noted during site reconnaissance. The Property was not registered with ASTs in the New York State PBS database. 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.

PCBs may be present in buried demolition debris from historical structures or in fill material.

2.5 Lead-Based Paint (LBP)

Lead-based paint (LBP) was generally not used inside residential buildings after 1960 in NYC. 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.

Given the ages of the Property's former buildings, they may have LBP. As such, the Property's subsurface could include LBP.

Activities 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

The Property was not provided with utilities at the time of the reconnaissance.

2.7 Waste Management and Chemical Handling

The Property had no evidence of current solid waste generation. Miscellaneous debris (including food wrappers, bottles, and paper products) was observed during the site inspection. Four small (less than 1 gallon) containers of motor oil were observed at the Property, but appeared to be associated with on-site contracting work occurring at the Property during the reconnaissance.

The roll-off dumpster observed on-site was filled with gravel bags, empty boxes, and other miscellaneous supplies. Mr. Edgeworth indicated it was used for storage for a nearby property.

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 level of radon found in basements in Brooklyn is 2.29 picocuries/liter, 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).

Based on the ages of the former buildings there is a potential that ACM are contained within demolition debris/historic fill. Any suspect ACM encountered during excavation should be sampled and disposed of in accordance with applicable requirements.

4.0 ADJACENT LAND USE

The Property is abutted to the north by Jefferson Avenue, followed by a transit system substation; to the east by Broadway and elevated subway (J and Z line) tracks, followed by commercial uses; to the south by a brick and cinder block apparent vacant building and Hancock Street, followed by a medical center and residences; and to the west a brick building and Saratoga Avenue, followed by residences. The surrounding neighborhood was mixed-use residential and commercial.

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 materials generation, usage or disposal on or near the Property. Specifically, Sanborn Fire Insurance Maps from 1888, 1907, 1908, 1932, 1951, 1962, 1965, 1976, 1978-1980, 1982, 1987, 1988, 1991-1993, 1995, and 2001-2007 were available. Copies of the maps are provided in Appendix B.

1888

The northern portion of the Property was developed with four small three-story structures, shown as offices and storefronts. A shed was also shown on the western perimeter of the Property. The southern and eastern portions of the Property were undeveloped.

The surrounding area was densely developed, primarily with residences, to the east, south, and west. Commercial buildings were noted east of the Property on the

eastern side of Broadway. North of the Property was sparsely developed with commercial uses. A car stable was shown on the south-adjacent block, across Hancock Street. A brass foundry was noted approximately 290 feet north of the Property, fronting Broadway.

1907

The Property was not shown on the 1907 map.

The surrounding area to the north and east was densely developed with residences on side-streets and unlabeled storefronts on Broadway. The brass foundry noted on the 1888 map was not shown. The surrounding area to the west and the south was not shown on the 1907 map.

1908

The Property was developed with nine four-story storefront buildings (in addition to the four three-story buildings noted on the 1888 map).

The surrounding area to the south and west was densely developed with residences and storefronts. A livery was shown on the Property block, west- and south-adjacent to the Property, on the corner of Hancock Street and Saratoga Avenue. A laundry was noted on the west-adjacent block (across Saratoga Avenue). The northeastern corner of the car stable facility noted on the 1888 map was shown as a transformer substation, approximately 70 feet south of the Property. The surrounding area to the north and the east was not shown on the 1908 map.

1932

1522 Broadway was labeled as a paints and oils store. Two additional storefront buildings were shown along Saratoga Avenue. No further significant changes from the 1908 map were noted for the Property.

The livery noted on the Property block on the 1908 map was replaced with a garage with a gasoline tank. The laundry noted on the 1908 map across Saratoga Avenue was no longer shown. The car stables noted on the 1888 and 1908 maps were no longer shown. The transformer substation noted on the south-adjacent block on the 1908 map was labeled a transit substation. An elevated subway station was shown east-adjacent to the Property on Broadway. Two garage facilities with gasoline tanks were shown on the southeast corner of Hancock Street and Saratoga Avenue, approximately 75 feet south of the Property. The garage further east on Hancock Street also included auto repair.

1951

The paints and oils store noted on the 1932 map was no longer shown. No further significant changes from the 1932 map were noted for the Property.

The garage with a gasoline tank noted on the Property block on the 1932 map was replaced with a wholesale auto glass facility (the tank was no longer shown). A household chemical bottling facility was shown approximately 250 feet northwest of the Property. Paints facilities were noted across Hancock Street, approximately 85 feet south of the Property, and on the northern side of Broadway, approximately

215 feet southeast of the Property. A mattress manufacturer was shown approximately 370 feet north of the Property on Broadway.

1962

A dry cleaner was shown on the eastern portion of 7 Saratoga Avenue, fronting Broadway. Unspecified manufacturing was shown on the southwestern portion of 1510 Broadway, fronting Saratoga Avenue. No further significant changes from the 1951 map were noted for the Property.

The mattress manufacturer noted on Broadway on the 1951 map was no longer shown, but a smaller mattress manufacturing facility was shown on the northwest-adjacent block, approximately 310 feet northwest of the Property. The garage noted on the southeast corner of Hancock Street and Saratoga Avenue on the 1932 to 1951 maps was replaced with a warehouse. An auto repair center was shown south-adjacent to the warehouse, approximately 195 feet southwest of the Property. The eastern portion of the chemical bottling facility noted on the 1951 map was labeled as a bleach bottling facility, while the western portion was re-labeled as a furniture refinishing business. A paper goods manufacturer and a tape recorder manufacturer were noted two blocks south of the Property block.

1965

The manufacturing use noted along Saratoga Avenue on the 1962 map was no longer shown. No further significant changes from the 1962 map were noted for the Property.

The western portion of the south-adjacent block was developed with a housing development with a playground and parking lot, replacing the garage and auto repair noted on maps from 1932 to 1962 and the warehouse and auto repair noted on the 1962 map. The paints facility noted across Hancock Street on the 1951 and 1962 maps was shown as a furniture store. A dry cleaner was shown on the eastern perimeter of the south-adjacent block, approximately 250 feet south-southeast of the Property. The bleach bottling facility noted on the 1962 map was replaced with a paint manufacturer.

1976-1978

The dry cleaner noted at 7 Saratoga Avenue on the 1962 and 1965 maps was no longer shown and the building appeared to have been demolished. Three four-story mixed-used residential and commercial buildings were shown fronting Broadway, with all other buildings noted on the 1908 to 1965 maps apparently demolished.

An NYC Transit Authority substation was shown on the northwest-adjacent block, approximately 95 feet northeast of the Property. The paper goods and tape recorder manufacturers noted two blocks south of the Property on the 1962 and 1965 maps were no longer shown. No further significant changes from the 1965 map were noted for the surrounding area.

1979

The northernmost Property building on the 1978 map was apparently demolished and the lot appeared undeveloped. One of the remaining buildings was shown as vacant, while the other appeared to be residential.

No significant changes from the 1978 map were noted for the surrounding area.

1980-1982

No significant changes from the 1979 map were noted for the Property.

The dry cleaner noted on the south-adjacent block on maps from 1965 to 1979 was no longer shown. Poor resolution on the 1980 map obscured some site features.

1987-1992

The Property appeared undeveloped, with remaining on-site buildings apparently demolished.

The west-adjacent block appeared primarily undeveloped and vacant, with one structure on the northeast corner remaining. No further significant changes from the 1982 map were noted for the surrounding area.

1993-2006

No significant changes from the 1992 map were noted for the Property.

The west-adjacent block was densely developed with two-story residential buildings. No further significant changes from the 1992 map were noted for the surrounding area.

2007

No significant changes from the 2006 map were noted for the Property.

The substation noted on the south-adjacent block on maps from 1908 to 2006 was replaced with a residential building. No further significant changes from the 2006 map were noted for the surrounding area.

To summarize, historical Sanborn maps indicated that by 1888, the Property was developed with four three-story buildings used as offices and storefronts. Nine additional four-story commercial buildings were developed by 1908. By 1932, two additional buildings were shown. A paints and oils store was noted at 1522 Broadway on the 1932 map. A dry cleaner was shown on the eastern portion of 7 Saratoga Avenue on the 1962 and 1965 maps. Unspecified manufacturing was noted on the southwestern portion of 1510 Broadway on the 1962 map. Property buildings appeared to begin undergoing demolition in 1976, at which point only three buildings on Broadway remained. By 1987, the remaining Property buildings were apparently demolished. The Property has remained undeveloped since 1987. Historical on-site dry cleaner and manufacturing operations have the potential to affect the Property subsurface and are considered RECs. Additionally, buried demolition debris associated with the former buildings may be present, and could include historical fill of unknown origin and potentially abandoned USTs and/or ASTs.

Historically, the surrounding area was mixed use residential and commercial, with some automotive, utility, and light industrial uses. A garage with a gasoline tank was shown

abutting the Property on the south on the 1932 map. A brass foundry was noted approximately 290 feet north of the Property on the 1888 map. Substations were noted on the south-adjacent block from 1908 to 2006 and on the northwest-adjacent block from 1976 to 2007. Garages with gasoline tanks (one of which also included auto repair) were shown on the south-adjacent block on maps from 1932 to 1962, with an additional auto repair shown on the 1962 map. A chemical/bleach bottling facility was shown northwest of the Property on 1951 and 1962 maps, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979. Additional light manufacturing (mattress, tape recorder, and paper goods) and paints facilities were also noted in the greater surrounding area. Historical nearby automotive, dry cleaning, and manufacturing uses have the potential to affect the Property subsurface and are considered RECs.

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 NYC Department of City Planning's Primary Land Use Tax Output (PLUTO) information provided by Toxics Targeting, Inc. of Ithaca, New York, the Property tax lots are zoned as R6 (residential) with a C1-3 commercial overlay. Tax parcel information provided by the New York City Buildings Department online Buildings Information System (BIS) indicated that the occupancy code for the Property is V1 (vacant land).

5.1.4 Recorded Land Title Records

Copies of title records were not provided to AKRF for review. A review of computerized New York City Automated City Register Information System (ACRIS) records, which included records of financial transactions involving the Property, identified no environmental liens for the Property. Available electronic deed information is summarized 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 1928.

A review of on-site listings indicated that the Property was occupied historically by commercial uses with limited residential tenants. An apparent cleaning and dying facility was identified at 1520 Broadway in 1928. Auto sales were listed at 1504 Broadway (alternate address for 7 Saratoga Avenue) in 1928. A printer was identified at 1516 Broadway and a distributing company was identified at 1514 Broadway in 1934. A dress house/dress manufacturer was listed at 1520 Broadway in 1934. Dry cleaning uses were identified at 1506 Broadway (alternate address for 7 Saratoga Avenue) in 1949 (Traina

Bros Dry Cleaning) and in 1960 and 1965 (World French Cleaners). Watch and jewelry repair was identified at 1510 Broadway in 1949 and shoe repair was identified at 1504 Broadway (alternate address for 7 Saratoga Avenue) in 1960 and 1965. Broadway Tire Company, a potential automotive listing, was listed at 1520 Broadway in 1965. Restaurants, clothing shops, grocery stores, stationary stores, a realty company, a trophy company, television and radio service, and flooring companies were also identified at the Property. With the exception of a single (apparent erroneous) listing of a medical doctor in 1997, no on-site listings were identified after 1976.

The surrounding area was listed with predominantly commercial uses, with some residential listings. A plumbing and heating company was listed at 10 Saratoga Avenue from 1940 to 1960. Broadway Car Service (which may have referred to a limousine service or an auto service station) was identified at 12 Saratoga Avenue from 1965 to 1985, with an auto glass company also noted in 1980. No other automotive, dry cleaning, or industrial uses were listed in the surrounding area. The City Directory search results are included in Appendix C.

5.2 Regulatory Review

Toxics Targeting, Inc. of Ithaca, New York, was contracted to obtain information regarding the regulatory status of the property and the surrounding area. This information included records from databases maintained by the USEPA and New York State Department of Environmental Conservation (NYSDEC). AKRF reviewed these records to identify the use, generation, storage, treatment and/or disposal of hazardous material and chemicals, or releases of such materials which may impact the project site. All applicable regulatory databases meet ASTM guidelines requesting utilization of information within 90 days' receipt from the appropriate agency. Copies of the pertinent sections of the Toxics Targeting, Inc. report are included in Appendix D.

5.2.1 Federal

The federal records reviewed 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); 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.

National Priority List (NPL)

The NPL is the USEPA's database of some of the most serious uncontrolled or abandoned hazardous waste sites identified for probable remedial action under the Superfund Program. These sites may constitute an immediate threat to human health and the environment. Due to the amount of public attention focused on NPL sites, they pose a significant risk of stigmatizing surrounding properties and potentially impacting property values.

One NPL site was identified within a one-mile radius of the Property. Based on its distance over 4,700 feet from the Property and the reported nature and extent of the contamination, this facility is not expected to affect the Property subsurface.

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

CERCLIS is a compilation of known or suspected, uncontrolled or abandoned hazardous waste sites which the USEPA has investigated, or plans to investigate, for a release, or threatened release, of hazardous substances pursuant to the Superfund Act of 1980 (CERCLA). Some of these sites may constitute a potential threat to human health and the environment. While it has been determined by the USEPA that some CERCLIS sites require no action, others could pose a real or perceived environmental threat to neighboring properties, thus affecting property values.

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 reported releases of petroleum and other potentially hazardous substances.

No on-site or potentially on-site ERNS listings were reported.

Toxic Chemical Release Inventory System (TRIS)

The TRIS contains information reported to the USEPA and/or NYSDEC by a variety of industries on their annual estimated releases of certain chemicals to the environment. The TRIS was mandated by Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986. Available information includes the maximum amount of chemicals stored on-site; the estimated quantity emitted into the air, discharged into bodies of water, injected underground, or released to land; methods used in waste treatment and their efficiency; and data on the transfer of chemicals off-site.

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

Permit Compliance System of Toxic Wastewater Discharge (WWD)

This federal- and state-maintained database contains a listing of sites which discharge wastewater containing potentially hazardous chemicals.

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

United States Environmental Protection Agency Civil Enforcement Docket

This database is the USEPA's system for tracking civil judiciary cases filed on behalf of the agency by the Department of Justice.

No USEPA Civil Enforcement Docket facilities were identified within an ⅛-mile radius of the Property.

5.2.2 State

The state records reviewed included the listings of hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS) Sites; Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS) Sites; State Inactive Hazardous Waste Disposal Sites (SHWS); State Hazardous Substance Waste Disposal Sites (SHSWDS); Major Oil Storage Facilities (MOSF); Air Discharge

Facilities (ADF); Brownfields Cleanup Program (BCP) Sites; and Historic Utility Facilities.

New York SPILLS Database

The New York SPILLS database includes a list of releases reported to the NYSDEC, including those attributed to tank test failures and tank failures. The tank test failures list only covers tanks that are below ground, while the tank failures list includes those that are either below or above ground. This database also lists spills that occur during the transportation of chemicals.

The Property was not listed in the Spills database. Two hundred releases were reported within a ½-mile of the Property, including 11 spills within an ⅛-mile of the Property. The spill listings with limited potential to affect the Property are summarized below.

- Spill No. 8702940 was reported in July 1987 at the corner of Jefferson Avenue and Broadway, north-adjacent to the Property. According to the listing, a 55-gallon drum was leaking. The drum reportedly contained unknown petroleum and lacquer thinner. The listing indicated that the spill was cleaned up by the Fire Department, but no specific details were provided. The spill was closed the day it was reported.
- Spill No. 1500493 was reported in April 2015 at 940 Hancock Street, approximately 120 feet southwest of the Property. The listing indicated that soil with a petroleum-like odor was encountered during excavation near a remote fill line. A subsequent inspection identified low-level photoionization detector (PID) readings. According to the listing, the on-site UST had not been in use for approximately 10 years. The spill was closed the day it was reported. This facility is also listed in the PBS database.

Based on listing details, status, and/or the anticipated groundwater flow direction, the remaining listings are not likely to have significantly affected subsurface conditions at the Property. Details from all listed spills are included in Appendix D.

Resource Conservation and Recovery Act (RCRA) Notifiers Listings

The NYSDEC's Bureau of Hazardous Waste Facility Compliance regulates hazardous waste from the point of generation to the point of disposal. The identified sites tracked on this list are those which have filed notification forms in accordance with the Resource Conservation and Recovery Act requirements regarding their hazardous waste activity. These sites include treatment, storage and disposal facilities (TSDs); small-quantity and large-quantity generators; and transporters of hazardous waste regulated under RCRA. The discussion below includes any CORRACTS listings of facilities which are subject to corrective action under RCRA.

No TSD or CORRACTs facilities were identified within their respective search radii.

The Property was not listed in the RCRA database. Fifty RCRA generators were listed within an ⅛-mile radius of the Property. Of these, the following facility has the potential to affect the Property:

- Syk Cleaners, located at 1561 Broadway, approximately 360 feet southeast of the Property, was identified as a small quantity generator (SQG) and historical large quantity generator (LQG) and conditionally exempt small quantity generator

(CESQG) of spent halogenated solvents and tetrachloroethlene (PCE) from 1993 to 2016.

Based on their locations and listing details, the remaining facilities are not anticipated to affect the Property (potential releases within utility vaults tend to be contained within the vaulted structures).

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 an ⅛-mile radius of the Property.

Solid Waste Facilities (SWF)

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

No Solid Waste Facilities (SWFs) were listed within a ½-mile radius of the Property.

Petroleum Bulk Storage (PBS) Database

The New York State PBS lists commercial facilities with registered petroleum tanks located either above or below ground in excess of 1,100 gallons and less than 400,000 gallons.

The Property was not listed in the PBS database. Four PBS facilities were listed within an ⅛-mile radius of the Property. Details of PBS facilities with some potential to affect environmental conditions at the Property based on their proximity and/or listing details are included in Table 1.

Table 1
On-Site and Area Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Status	Approximate Distance/Direction from Property
10 Saratoga Avenue	2,000 unknown	Fuel Oil	Unknown	60 feet west
940 Hancock Avenue	15,000 UST 5,000 UST	No. 2 Fuel Oil No. 2 Fuel Oil	Closed – Removed In Service	120 feet southwest

Note: UST - underground storage tank

A closed-status spill was reported for the 940 Hancock Avenue site. The 10 Saratoga Avenue site was identified in the archived Fire Department records and limited information was available. Reported and potential undetected releases may have affected subsurface conditions at the Property. Based on their distance and the anticipated groundwater flow direction, the remaining listings are unlikely to have affected the Property. Details of the PBS facilities located within a ⅛-mile radius of the Property are included in Appendix D.

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This database maintains information and aids decision-making regarding the investigation and clean-up of hazardous sites. The Registry's information includes the clean-up status, type of clean-up, types and quantities of contaminants involved, and the assessment of health and environmental concerns. SHWS records are the state's equivalent to CERCLIS. These sites may or may not also be listed on the federal CERCLIS list.

Two SHWSs were identified within a one-mile radius of the Property. Based on their location and/or inferred hydraulic gradient, these facilities are not expected to affect the Property subsurface.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks waste disposal sites that may pose threats to public health or the environment, but that cannot be remediated using monies from the Hazardous Waste Remediation Fund.

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

Major Oil Storage Facilities (MOSF) Database

These facilities may be on-shore facilities or vessels with petroleum storage capacities of 400,000 gallons or more.

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

Air Discharge Facilities Index (ADF)

This listing of sites tracked by the New York State Regulatory Compliance Information System includes address information on each facility and the source of its associated air emissions.

No ADFs were reported within an ⅛-mile radius of the Property.

Environmental Restoration Program (ERP)

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 (VCP)

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. The state program no longer accepts applications, but the New York City Office of Environmental Remediation (OER) maintains its own Voluntary Cleanup Program.

One NYSDEC VCP site and three NYCOER VCP sites were identified within a ½-mile radius of the Property. Based on the listing details, including the distance and findings of

the remedial investigations, these facilities are unlikely to have affected to the Property subsurface.

Brownfield Cleanup Program (BCP) Sites

In 2003, a New York State law established this successor to the Voluntary Cleanup Program. In addition to liability releases, it established a variety of tax credits for sites remediated through the program. Some sites in this program have known extensive contamination, whereas others have more limited contamination or have not had sufficient investigation to determine whether or not contamination is present.

One BCP site was identified within a ½-mile radius of the Property. Based on its location over 2,500 feet from the Property in an inferred downgradient groundwater flow direction, this facility would not be expected to affect the Property subsurface.

Historic Utility Facilities

This is 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 from 1898 to 1950.

No Historic Utility Sites were listed within an ⅛-mile radius 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 D (Fire Department Records) and E (Buildings and Finance Department Records).

Fire Department (FDNY)

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. The Property was not identified in the FDNY database. Two FDNY facilities were listed off-site within an ⅛-mile radius, as discussed in Section 5.2.2.

Buildings Department (DOB)

Computerized Buildings Department records for the Property tax lots identified the following:

- A demolition permit in 1906 for Lot 6.
- A demolition permit in 1910 for Lot 11.
- A demolition permit in 1911 for Lot 15.
- An oil burner application in 1912 for Lot 12.
- A demolition permit in 1915 for Lot 12.
- A construction permit in 1964 for Lot 12.

- A demolition permit in 1915 for Lot 13.
- A new building permit in 1950 for Lot 16.
- A 1960 Certificate of Occupancy at 1520 Broadway (Lot 16) for a four-story building (plus cellar) with storage in the cellar, a store on the first-floor, and residences on the second through fifth floors.
- A demolition permit in 1971 for Lot 17.
- A demolition permit in 1985 for Lot 16.
- A DOB elevator violation in 2005 for Lot 13.

Electronic Buildings Department records indicated that the Property historically was developed with buildings, which were demolished between 1906 and 1985. The elevator violation in 2005 appears to be an erroneous listing. Files pertaining to the oil burner application and demolition permits were not available for review. Potential buried demolition debris associated with the former on-site structures may be present at the Property, and could include historic fill of unknown origin and/or abandoned USTs and/or ASTs.

Land Title Records and Tax Records

Electronic property transaction records for the Property Block and Lots were reviewed from the New York City Department of Finance Office of the City Register Automated City Register Information System (ACRIS). Deed information obtained from the ACRIS files is summarized in Table 2:

Table 2
Title Information

Year	Grantor/Grantee Listed on Deed
1966	Grantor is: Bertha Spindel; Grantee is: The 100 Broadway Realty Corp. (Lot 12)
1966	Grantor is: The 100 Broadway Realty Corp.; Grantee is: Hugh N. Williams and Inez Williams (Lot 12)
1966	Grantor is: Narrad Realty Corp.; Grantee is: Peter Ciaccio and Natalie Ciaccio (Lots 17 and 18)
1968	Grantor is: Hugh N. Williams and Inez Williams; Grantee is: The 100 Broadway Corp. (Lot 12)
1968	Grantee is: Michele Maffucci; Grantee is: Angel R. Torres (Lot 13)
1969	Grantee is: Dorothy G. Burke; Grantee is: Arthur Thomas (Lot 6)
1969	Grantee is: The 100 Broadway Realty Corp.; Grantee is: J X Realty Corp. (Lot 12)
1975	Grantor is: Edward J. Manning; Grantee is: 702 Crown St. Corp. (Lot 16)
1975	Grantor is: Ivan E. Irizarry, Finance Administrator of the City of New York; Grantee is: The City of New York (Lots 6 and 14)
1976	Grantor is: Ivan E. Irizarry, Finance Administrator of the City of New York; Grantee is: The City of New York (Lots 17 and 18)
1977	Grantor is: Harry S. Tishelman, Commissioner of Finance of the City of New York; Grantee is: The City of New York (Lot 13)
1979	Grantor is: Samuel Matthews; Grantee is: Joseph Menkes, Alexander Grossman, J X Realty Corp., First National City Bank, Manufacturers Hanover Trust Company, United States of America, Chemical Bank New York Trust Co., Prudential Savings Bank, Bell

	Sales Co., State of New York, City of New York, Jakes Hamilton, Neas Williams, Elsie Vargas, and Anna Diaz (Lot 12)
1979	Grantor is: Harry S. Tishelman, Commissioner of Finance of the City of New York; Grantee is: The City of New York (Lots 11 and 16)
1982	Grantor is: Philip R. Michael, Commissioner of Finance of the City of New York; Grantee is: The City of New York (Lots 6, 14, 15, and 18)

The title information search did not indicate evidence of RECs in connection with the Property.

New York City Department of Health (NYCDOH)

AKRF sent a Freedom of Information Law (FOIL) request to the NYCDOH on January 4, 2017. At the time of this report, NYCDOH had not sent a response to the request. If issues of potential concern are noted upon receipt of the information, an addendum to this report will be created to discuss relevant findings.

New York City Department of Environmental Protection (NYCDEP)

AKRF sent a FOIL request to the NYCDEP on January 4, 2017. At the time of this report, NYCDEP had not sent a response to the request. If issues of potential concern are noted upon receipt of the information, an addendum to this report will be created to discuss relevant findings.

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; 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)

In addition to the Local Agency File Review, AKRF sent a FOIL request to the NYSDEC Region 2 on January 4, 2017 for the Property to determine whether pertinent environmental records for the Property could be obtained for further review. At the time of this report, the NYSDEC confirmed receipt of the request but had not sent a response. If issues of potential concern are noted upon receipt of information, an addendum to this report will be created to discuss relevant findings.

AKRF sent a FOIL request to the New York State Department of Health (NYSDOH) on January 4, 2017 for the Property to determine whether pertinent environmental records for the Property could be obtained for further review. At the time of this report, NYSDOH confirmed receipt of the request but had not sent a response. If issues of potential concern are noted upon receipt of information, an addendum to this report will be created to discuss relevant findings.

In AKRF's judgment, no further additional local records meeting the ASTM criteria are pertinent for the Property or any adjoining properties, and a review of additional records would not likely add significant pertinent information or affect the conclusions of this report.

6.0 USER-PROVIDED INFORMATION

In preparing this Phase I ESA, AKRF requested that the client 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?

Ms. Tara Ostock of OER submitted a user questionnaire for the Property. Ms. Ostock 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.

7.0 PREVIOUS STUDIES

No previous studies were provided to AKRF.

8.0 VAPOR ENCROACHMENT SCREENING

A Tier 1 Vapor Encroachment Screening was conducted in accordance with ASTM Standard E2600-15, Standard Guide for Vapor Encroachment Screening on a Property Involved in Real Estate Transactions. The tern "Vapor Encroachment Condition" means the presence or likely presence of vapors from chemicals of concern (COC) in the subsurface of a property caused by the release of vapors on or near the Property.

Based on AKRF's review of historical and regulatory database records, vapor encroachment conditions (VECs) were identified at the Property, as follows:

- Historical Sanborn maps and City Directories indicated that a dry cleaner operated at 7 Saratoga Avenue from approximately 1949 to 1965. Additionally, Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949.
- Historical Sanborn maps and electronic Buildings Department (DOB) records indicated that the Property was previously developed with commercial and residential structures. The buildings dated to before 1888 and were demolished by 1985. Buried demolition debris associated with the former buildings may be present at the Property, as could include historical fill of unknown origin and possibly abandoned underground storage tanks (USTs). Electronic DOB records included an oil burner application for 1512 Broadway.
- Industrial, automotive, and dry cleaning uses were also noted in the surrounding area, including garages with gasoline tanks south/west-adjacent to the Property on the 1932 map and approximately 75 feet south of the Property on maps from 1932 to 1962. Auto repair was shown with one of the garages 75 feet south of the Property and approximately 195 feet southwest of the Property on the 1962 map. Potential auto repair was identified in the City Directories on the east-adjacent block from 1965 to 1985. Substations were identified on the south- and northwest-adjacent blocks from 1908 to 2006 and 1976 to 2007 maps, respectively. A chemical and bleach bottling facility was noted approximately 250 feet northwest of the Property on maps from 1951 and 1962, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979. Nearby PBS, Spills, and RCRA listings with limited potential to have affect the Property subsurface were identified in the regulatory database search.

9.0 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.
- User-provided information was not provided for the Property at the time of the report. 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, 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), as well as FOIL requests submitted to NYSDEC, NYCDEP, NYSDOH, and NYCDOH. 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.

10.0 CONCLUSIONS AND RECOMMENDATIONS

AKRF, Inc. (AKRF) was retained by the New York City Mayor's Office of Environmental Remediation to perform a Phase I Environmental Site Assessment of the MWBE Site C property at 7 Saratoga Avenue and 1510-1524 Broadway (Tax Block 1489, Lots 6 and 11-18) (the Property) in the Ocean Hill neighborhood of Brooklyn, New York. The Property consists of an approximately 20,000-square foot landscaped parcel. The objective of this assessment was to identify any potential environmental concerns associated with the Property resulting from past or current usage of the Property or neighboring properties.

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 9.0. 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.

A Tier 1 Vapor Encroachment Screen was also conducted in accordance with ASTM Standard E2600-15, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*. The term "Vapor Encroachment Condition" means the presence or likely presence of vapors from chemicals of concern (COC) in the subsurface of a property caused by the release of vapors on or near the property.

At the time of AKRF's reconnaissance, the Property included an undeveloped lot secured by a chain link fence. The surrounding area was mixed-use commercial and residential. A summary of the assessment findings is presented below:

Recognized Environmental Conditions (RECs)/Vapor Encroachment Conditions (VECs)

- Historical Sanborn maps and City Directories indicated that a dry cleaner operated at 7 Saratoga Avenue from approximately 1949 to 1965. Additionally, Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949.

- Historical Sanborn maps and electronic Buildings Department (DOB) records indicated that the Property was previously developed with commercial and residential structures. The buildings dated to before 1888 and were demolished by 1985. Buried demolition debris associated with the former buildings may be present at the Property, as could include historical fill of unknown origin and possibly abandoned underground storage tanks (USTs) and/or aboveground storage tanks (ASTs). Electronic DOB records included an oil burner application for 1512 Broadway.
- Industrial, automotive, and dry cleaning uses were also noted in the surrounding area, including garages with gasoline tanks south/west-adjacent to the Property on the 1932 map and approximately 75 feet south of the Property on maps from 1932 to 1962. Auto repair was shown with one of the garages 75 feet south of the Property and approximately 195 feet southwest of the Property on the 1962 map. Potential auto repair was identified in the City Directories on the east-adjacent block from 1965 to 1985. Substations were identified on the south- and northwest-adjacent blocks from 1908 to 2006 and 1976 to 2007 maps, respectively. A chemical and bleach bottling facility was noted approximately 250 feet northwest of the Property on maps from 1951 and 1962, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979. Nearby PBS, Spills, and RCRA listings with limited potential to have affect the Property subsurface were also identified in the regulatory database search.

Other On-site Environmental Concern (items outside the scope of ASTM E1527-13 such as asbestos containing material [ACM], lead-based paint [LBP] and/or polychlorinated biphenyls [PCBs] in building materials or fill/debris)

- Potential fill materials and/or demolition debris beneath the Property could contain ACM, LBP, and/or PCBs.

RECOMMENDATIONS

- Prior to any future development of the Property that involves subsurface disturbance, a subsurface (Phase II) investigation (e.g., sampling of soil, soil vapor, and groundwater) is recommended prior to such activities to ensure that soil excavation and/or groundwater dewatering activities are conducted in accordance with applicable regulations and to determine if vapor mitigation and/or additional remediation is warranted for the future use of the Property.
- During any future subsurface disturbance, excavated soil should be handled and disposed of properly in accordance with all applicable regulatory requirements. Any evidence of a petroleum spill must be reported to the NYSDEC and addressed in accordance with applicable requirements. If any USTs are encountered, they should be properly assessed, closed, and removed in accordance with state, and local regulations. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering is required during potential future construction activities, water must be discharged in accordance with the New York City Department of Environmental Protection (NYCDEP) and/or New York State Department of Environmental Conservation (NYSDEC) requirements.

11.0 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.

Marc S. Godick, LEP
Senior Vice President

Deborah Shapiro, QEP
Vice President

12.0 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 9.0. 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 to the surrounding area, as well as a visual reconnaissance of current conditions.

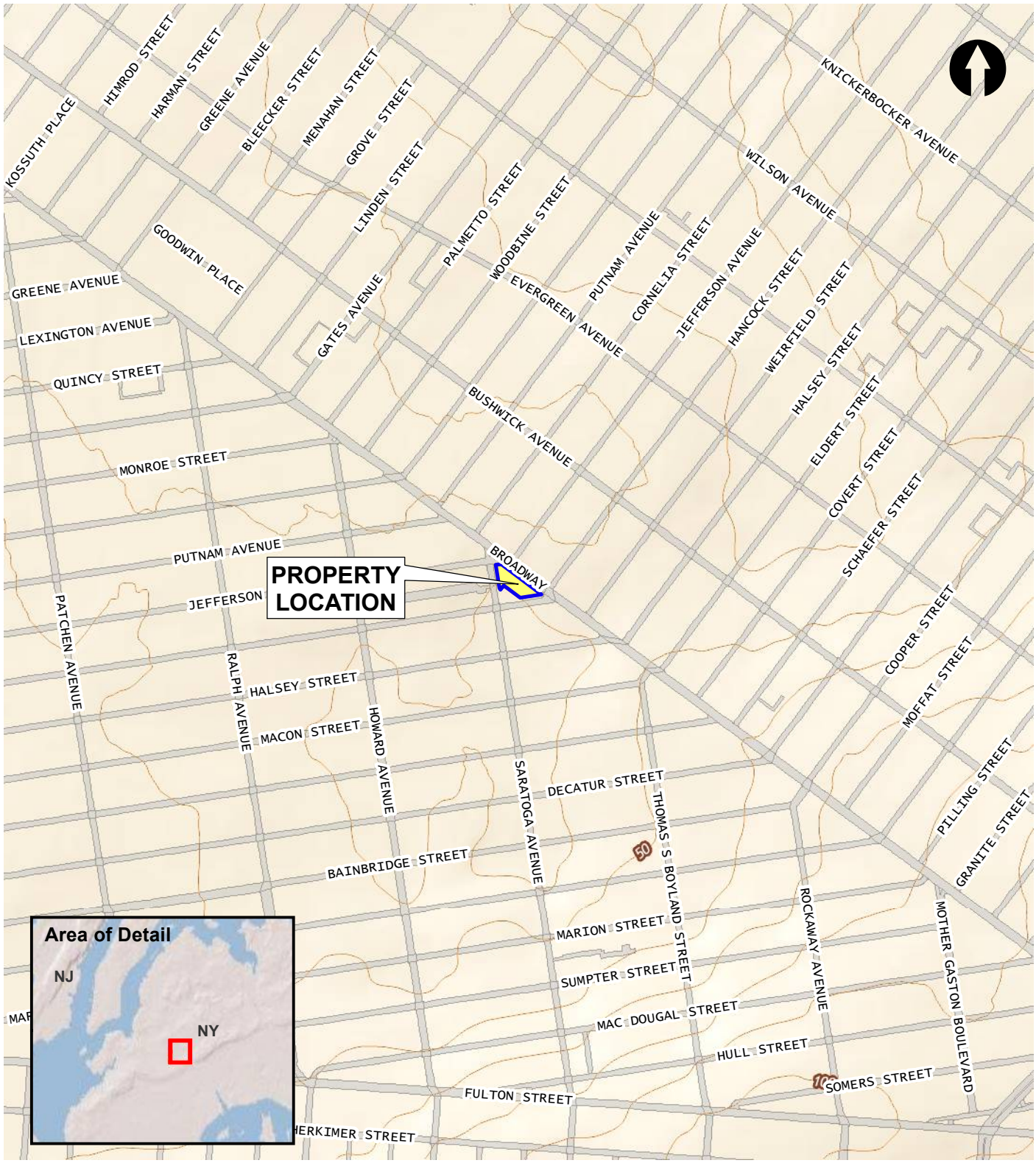
This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances 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 Mayor's Office of Environmental Remediation 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.

13.0 REFERENCES

1. Toxics Targeting, Inc., MWBE Site C – Brooklyn, NY 11233, Regulatory Radius Search, January 3, 2017.
2. *U.S. Geological Survey – Brooklyn, New York 2013 Quadrangle*, 7.5 minute Series (Topographic), Scale 1:24,000, 2013.
3. New York State Department of Health: Office of Public Health - Environmental Radiation Section, Basement Radon Screening Data, October 2016.
4. Historical Sanborn maps dated 1888, 1907, 1908, 1932, 1951, 1962, 1965, 1976, 1978-1980, 1982, 1987, 1988, 1991-1993, 1995, and 2001-2007.
5. Environmental Data Resources, Inc., MWBE Site C, 7 Saratoga Avenue and 1510-1524 Broadway – Brooklyn, NY 11233, City Directory Abstract, December 30, 2016.

FIGURES



Map Source: USGS Topo base map service from The National Map

0 800 1,600

SCALE IN FEET

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

MWBE Site C
7 Saratoga Avenue and 1150-1524 Broadway
Brooklyn, New York

PROPERTY LOCATION

DATE
1/17/2017

PROJECT NO.
20568.03

FIGURE
1

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database

LEGEND

- ELEVATED SUBWAY TRACKS
- PROJECT SITE BOUNDARY
- 11 LOT BOUNDARY
- 1489 BLOCK NUMBER

0 60 120
SCALE IN FEET

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

MWBE Site C
7 Saratoga Avenue and 1150-1524 Broadway
Brooklyn, New York

PROPERTY DETAIL

DATE
1/17/2017
PROJECT NO.
20568.03
FIGURE
2

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Photograph 1: The Property, view southwest from Broadway and Jefferson Avenue.

Photograph 2: The Property, view west from southeastern portion of the Property.

Photograph 3: Western perimeter of the Property, view north from southern/central portion of the Property.

Photograph 4: Remnants of construction materials stored by a past occupant on southern portion of the Property.

Photograph 5: Eastern perimeter of the Property, view west from central portion of the Property.

Photograph 6: Miscellaneous debris noted at the Property.

Photograph 7: Southeastern corner of the Property, view south from the eastern perimeter of the Property.

Photograph 8: Northeastern corner of the Property, view northeast from central portion of the Property.

APPENDIX B
HISTORICAL SANBORN MAPS

MWBE Site C

7 Saratoga Avenue and 1510-1524 Broadway

Brooklyn, NY 11233

Inquiry Number: 4817268.1

December 30, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

12/30/16

Site Name:

MWBE Site C
7 Saratoga Avenue and 1510-1
Brooklyn, NY 11233
EDR Inquiry # 4817268.1

Client Name:

AKRF, Inc.
440 Park Avenue, South 7th Floor
New York, NY 10016
Contact: Margo Davis

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AKRF, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 84AD-4F5A-B5E7

PO # NA

Project OER Phase Is

Maps Provided:

2007	1993	1978	1888
2006	1992	1976	
2005	1991	1965	
2004	1988	1962	
2003	1987	1951	
2002	1982	1932	
2001	1980	1908	
1995	1979	1907	

Sanborn® Library search results

Certification #: 84AD-4F5A-B5E7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

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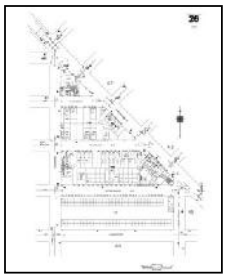
Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

2007 Source Sheets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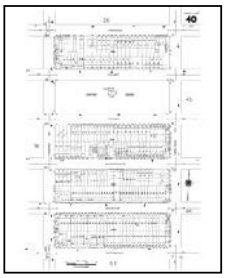
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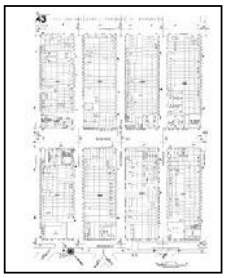
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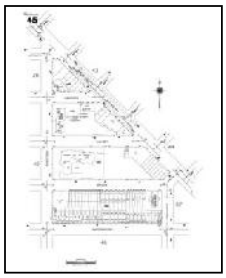
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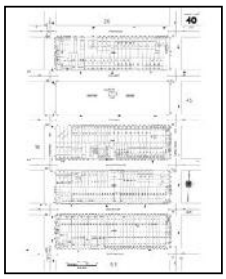
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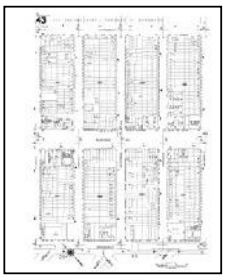
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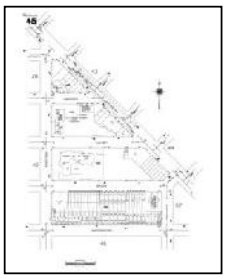
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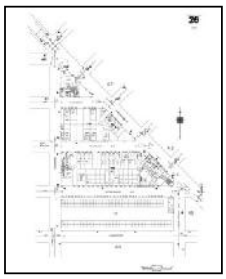
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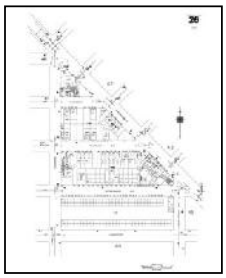
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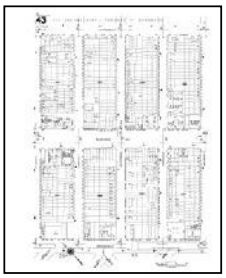
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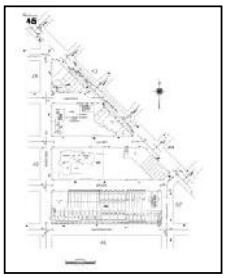
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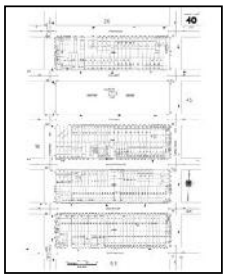
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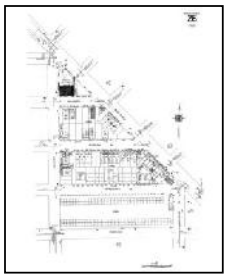
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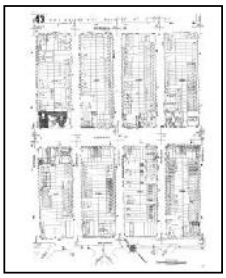
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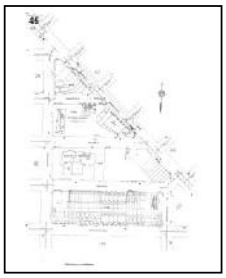
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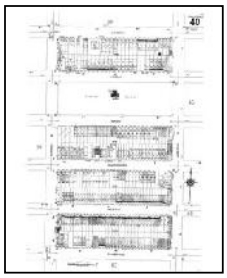
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Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

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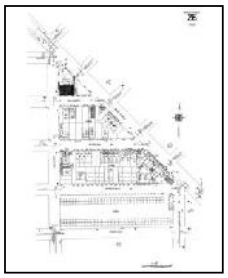
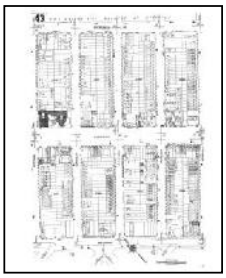
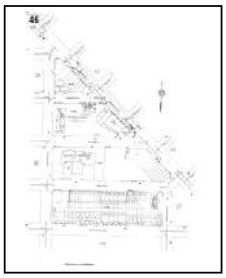
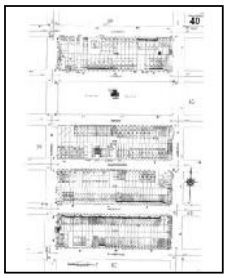
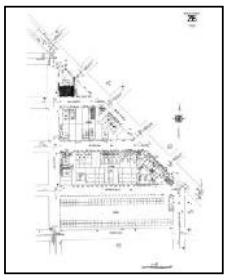

Volume 5, Sheet 26
2003

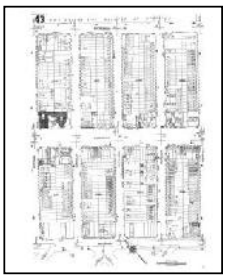

Volume 5, Sheet 43
2003

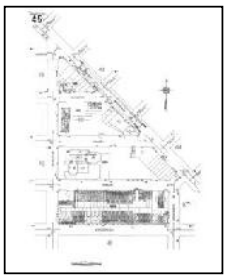

Volume 5, Sheet 45
2003


Volume 5, Sheet 40
2003

2002 Source Sheets


Volume 5, Sheet 26
2002


Volume 5, Sheet 43
2002


Volume 5, Sheet 45
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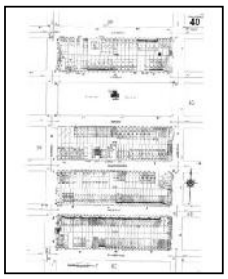
Volume 5, Sheet 40
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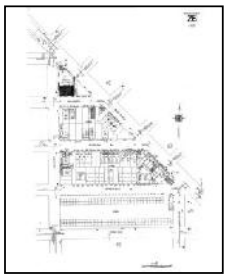
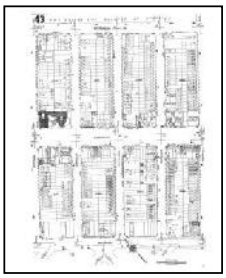

Volume 5, Sheet 26
2001


Volume 5, Sheet 43
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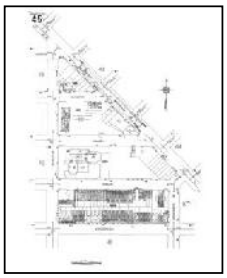
Volume 5, Sheet 45
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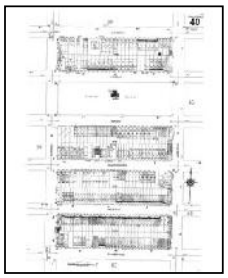
Volume 5, Sheet 40
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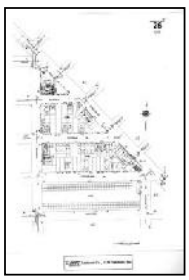
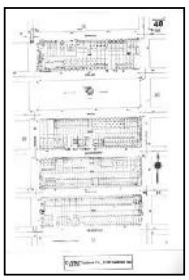

Volume 5, Sheet 26
1995-Nov


Volume 5, Sheet 40
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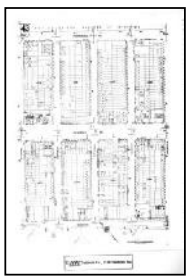
Volume 5, Sheet 43
1995-Nov


Volume 5, Sheet 45
1995-Nov

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

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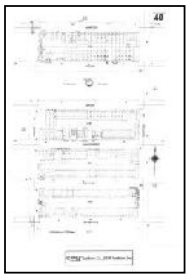
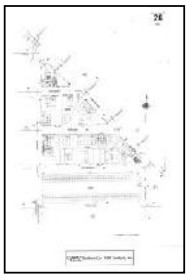
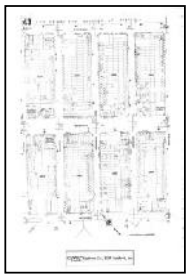
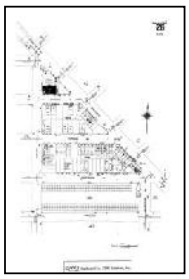

Volume 5, Sheet 40
1995-Jan

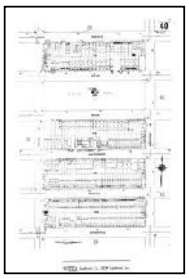

Volume 5, Sheet 26
1995-Jan


Volume 5, Sheet 43
1995-Jan


Volume 5, Sheet 45
1995-Jan

1993 Source Sheets


Volume 5, Sheet 26
1993


Volume 5, Sheet 40
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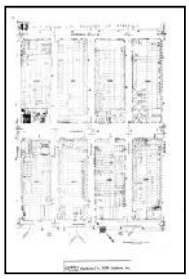
Volume 5, Sheet 43
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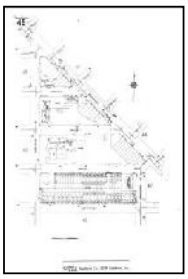
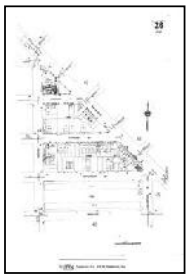

Volume 5, Sheet 45
1993

1992 Source Sheets


Volume 5, Sheet 26
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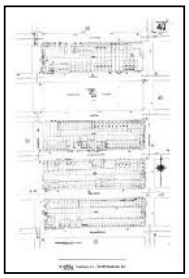
Volume 5, Sheet 40
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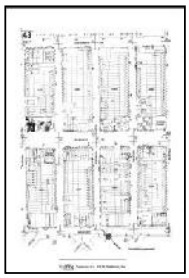
Volume 5, Sheet 43
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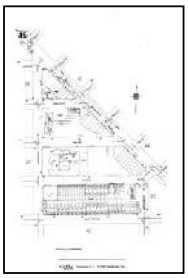
Volume 5, Sheet 45
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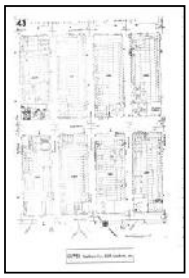
1991 Source Sheets


Volume 5, Sheet 43
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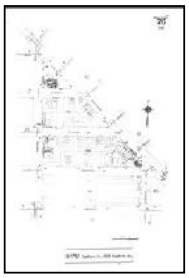
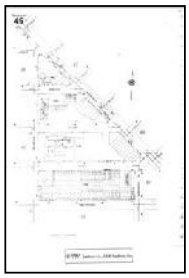

Volume 5, Sheet 26
1991


Volume 5, Sheet 45
1991


Volume 5, Sheet 40
1991

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1988 Source Sheets


Volume 5, Sheet 43
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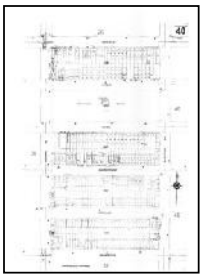
Volume 5, Sheet 40
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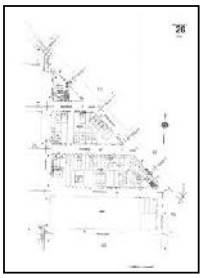
Volume 5, Sheet 26
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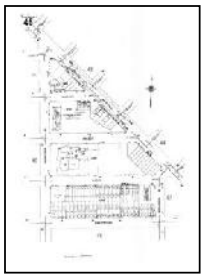
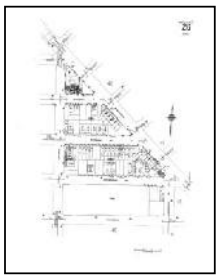

Volume 5, Sheet 45
1988

1987 Source Sheets


Volume 5, Sheet 26
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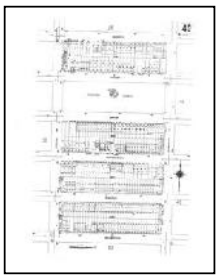
Volume 5, Sheet 40
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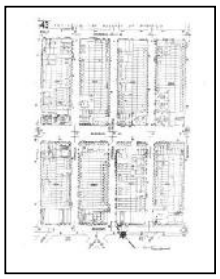
Volume 5, Sheet 43
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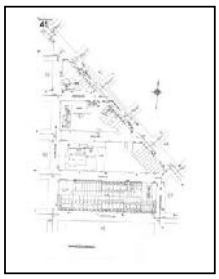
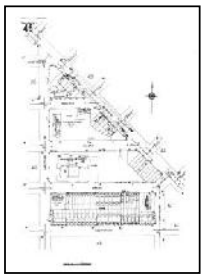
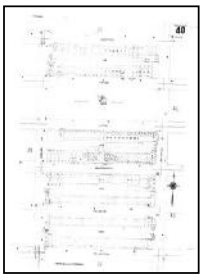

Volume 5, Sheet 45
1987

1982 Source Sheets


Volume 5, Sheet 45
1982


Volume 5, Sheet 26
1982


Volume 5, Sheet 40
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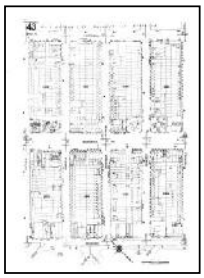
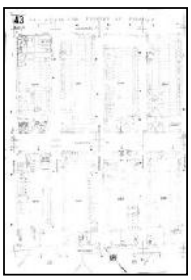

Volume 5, Sheet 43
1982

1980 Source Sheets


Volume 5, Sheet 26
1980


Volume 5, Sheet 40
1980


Volume 5, Sheet 43
1980


Volume 5, Sheet 45
1980

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

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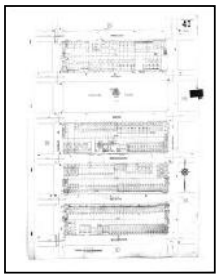
Volume 5, Sheet 40
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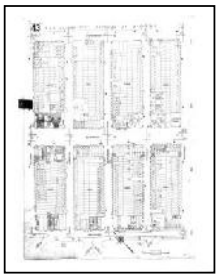
Volume 5, Sheet 43
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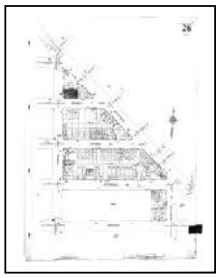
Volume 5, Sheet 26
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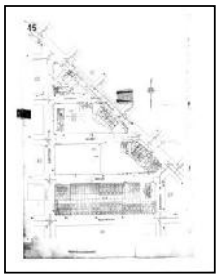
Volume 5, Sheet 45
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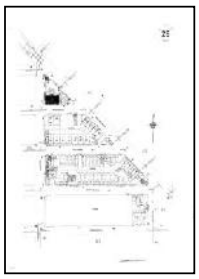
Volume 5, Sheet 26
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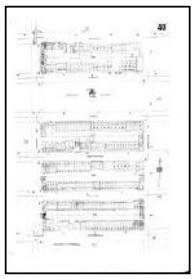
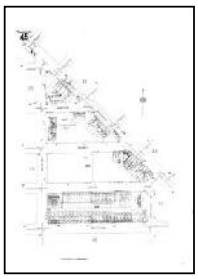
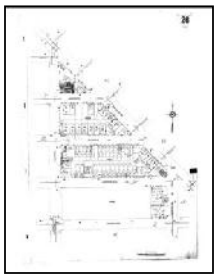

Volume 5, Sheet 40
1978


Volume 5, Sheet 43
1978


Volume 5, Sheet 45
1978

1976 Source Sheets


Volume 5, Sheet 26
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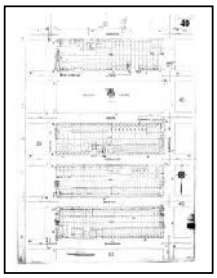
Volume 5, Sheet 40
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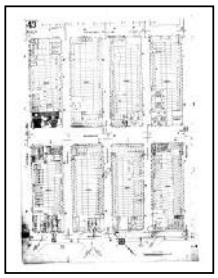
Volume 5, Sheet 43
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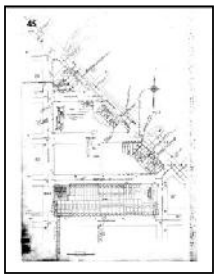
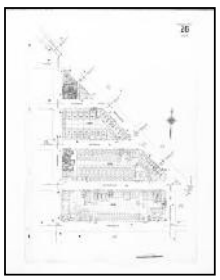

Volume 5, Sheet 45
1976

1965 Source Sheets


Volume 5, Sheet 26
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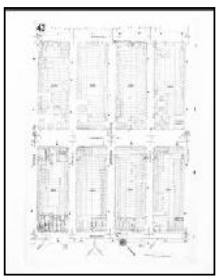
Volume 5, Sheet 43
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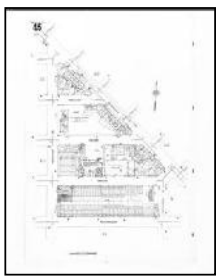
Volume 5, Sheet 45
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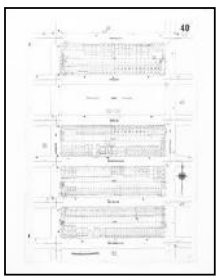
Volume 5, Sheet 40
1965

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

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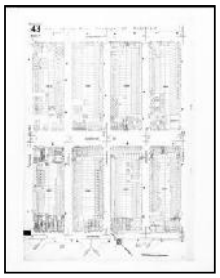
Volume 5, Sheet 43
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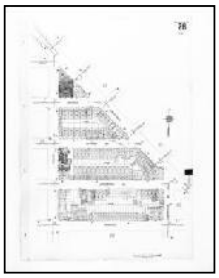
Volume 5, Sheet 26
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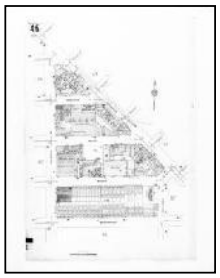
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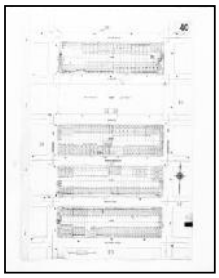
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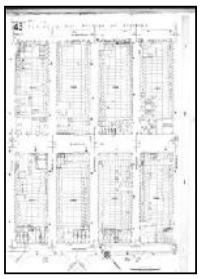
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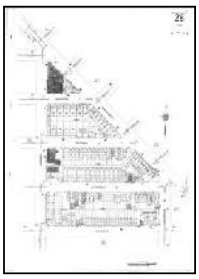
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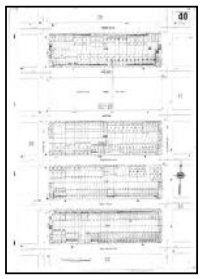
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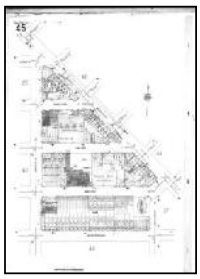
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1932 Source Sheets


Volume 5, Sheet 26
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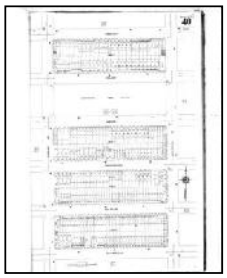
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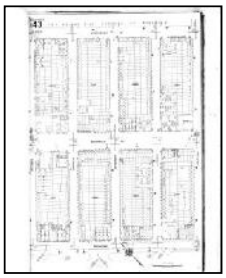
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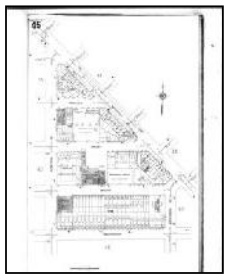
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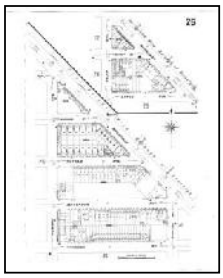
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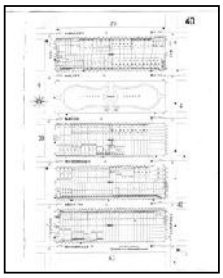
Volume 5, Sheet 40
1908


Volume 5, Sheet 41
1908

Sanborn Sheet Key

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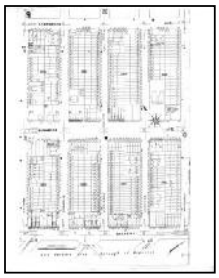
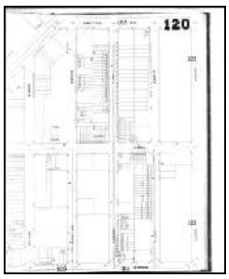


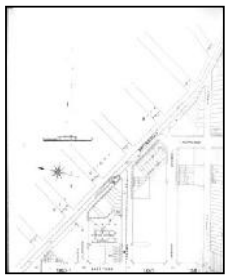
Volume 9, Sheet 9
1907

1888 Source Sheets

Volume 9, Sheet 262
1888



Volume 5, Sheet 120
1888



Volume 5, Sheet 122
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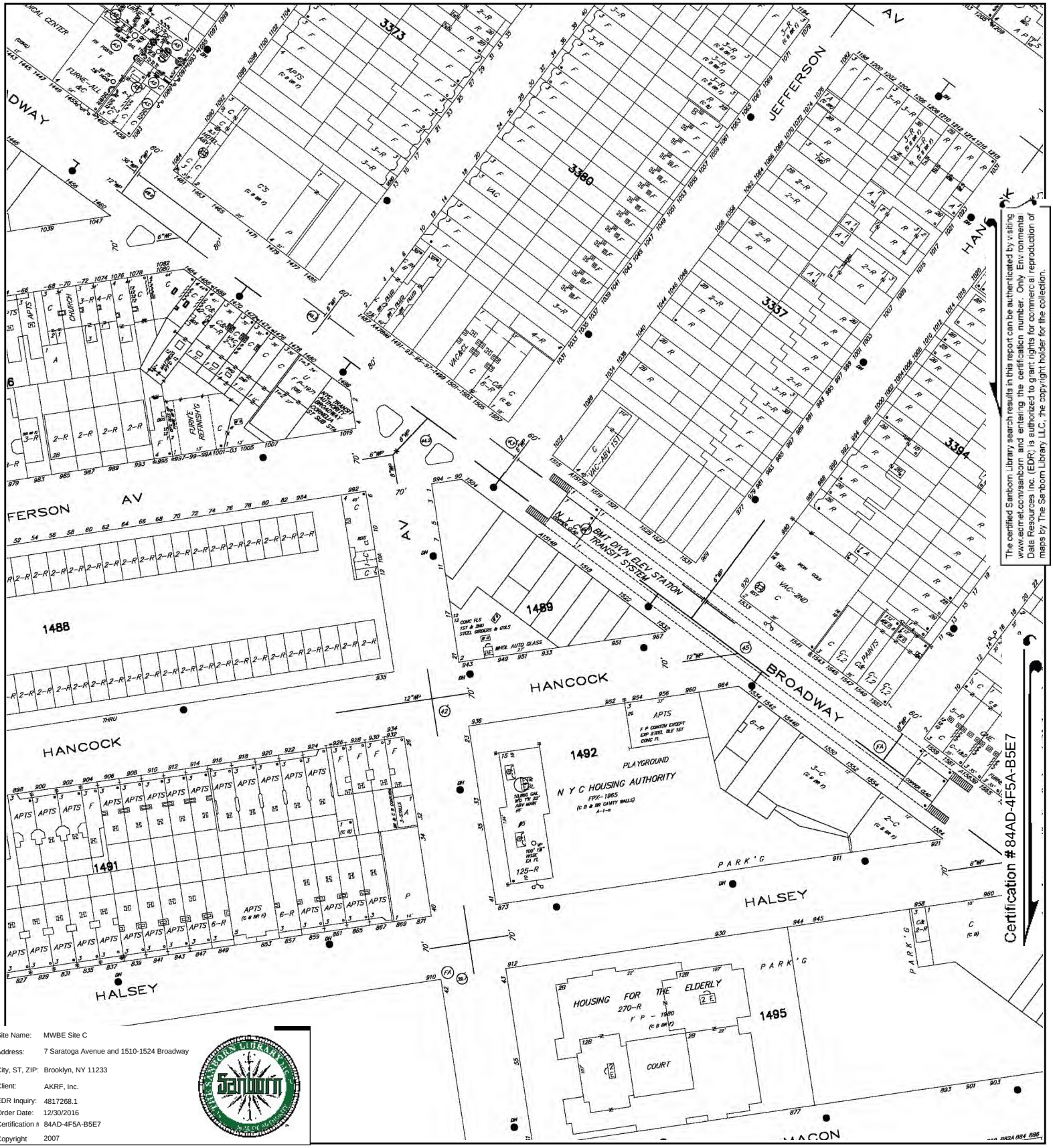

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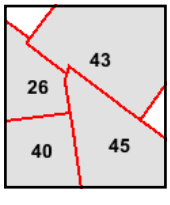
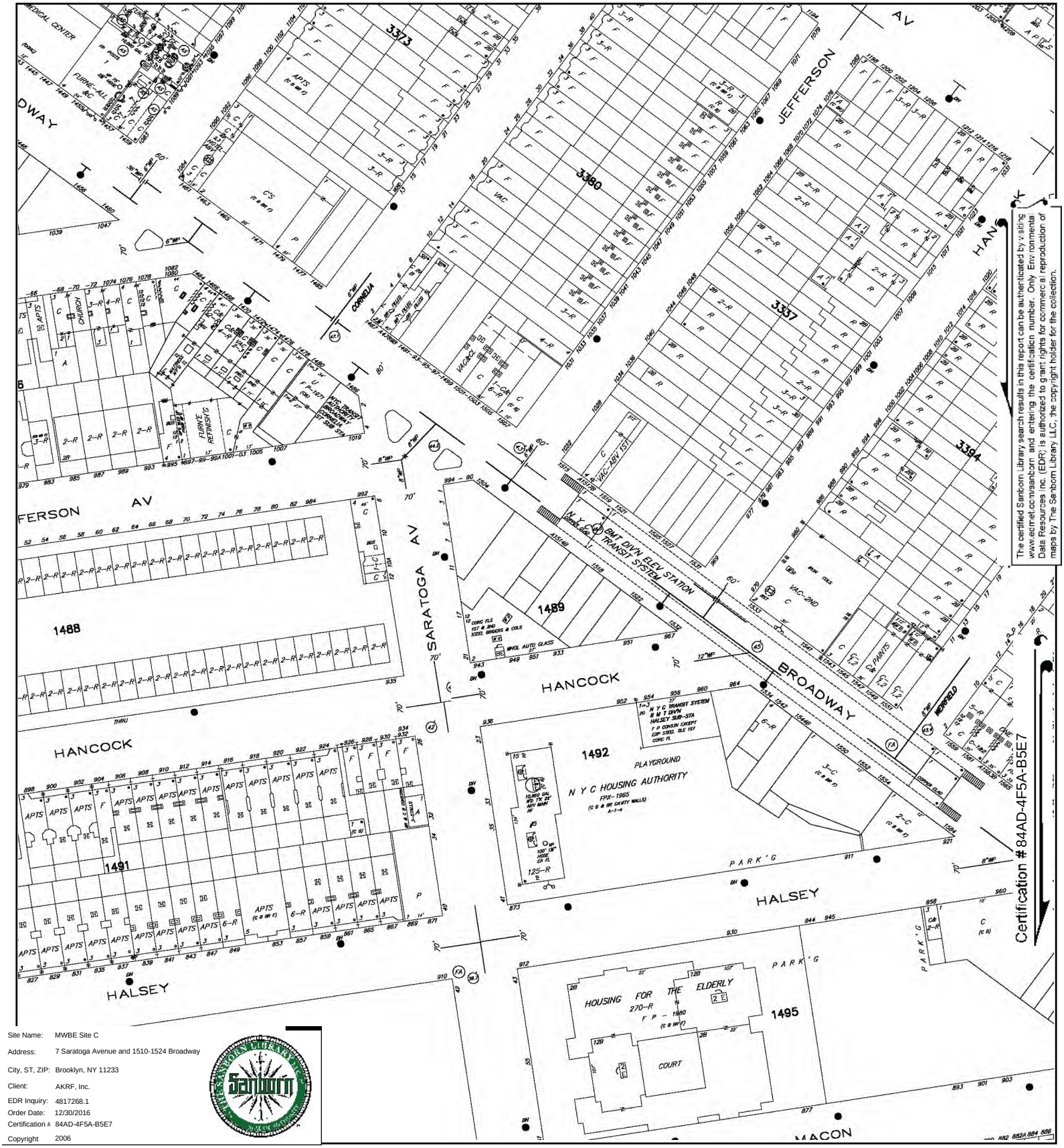


Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26



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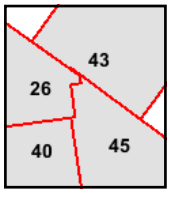

Volume 5, Sheet 26
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40

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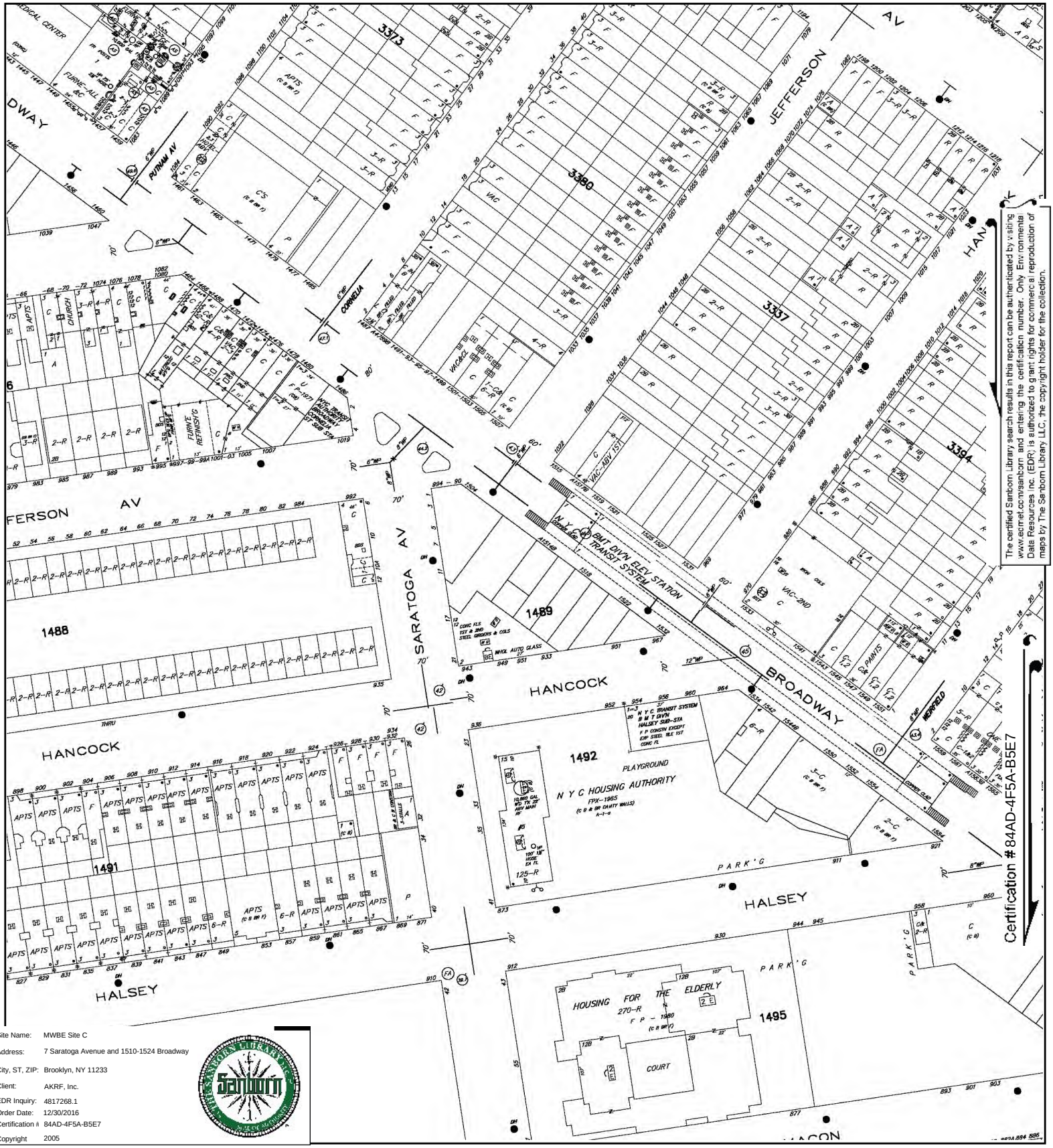

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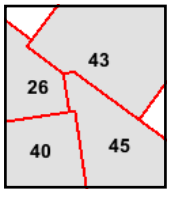

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

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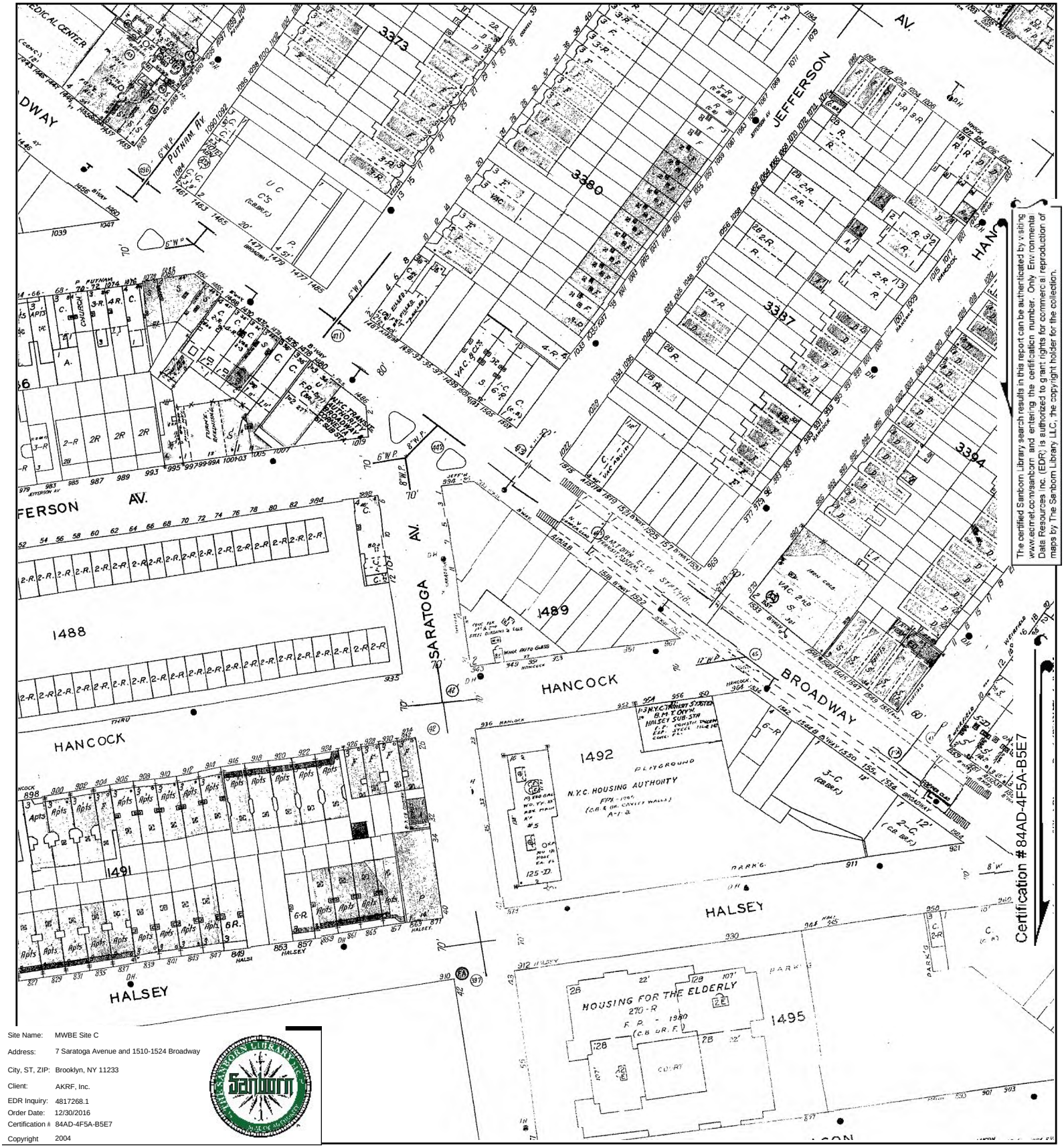

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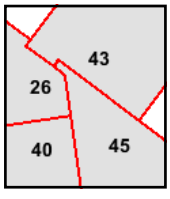

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

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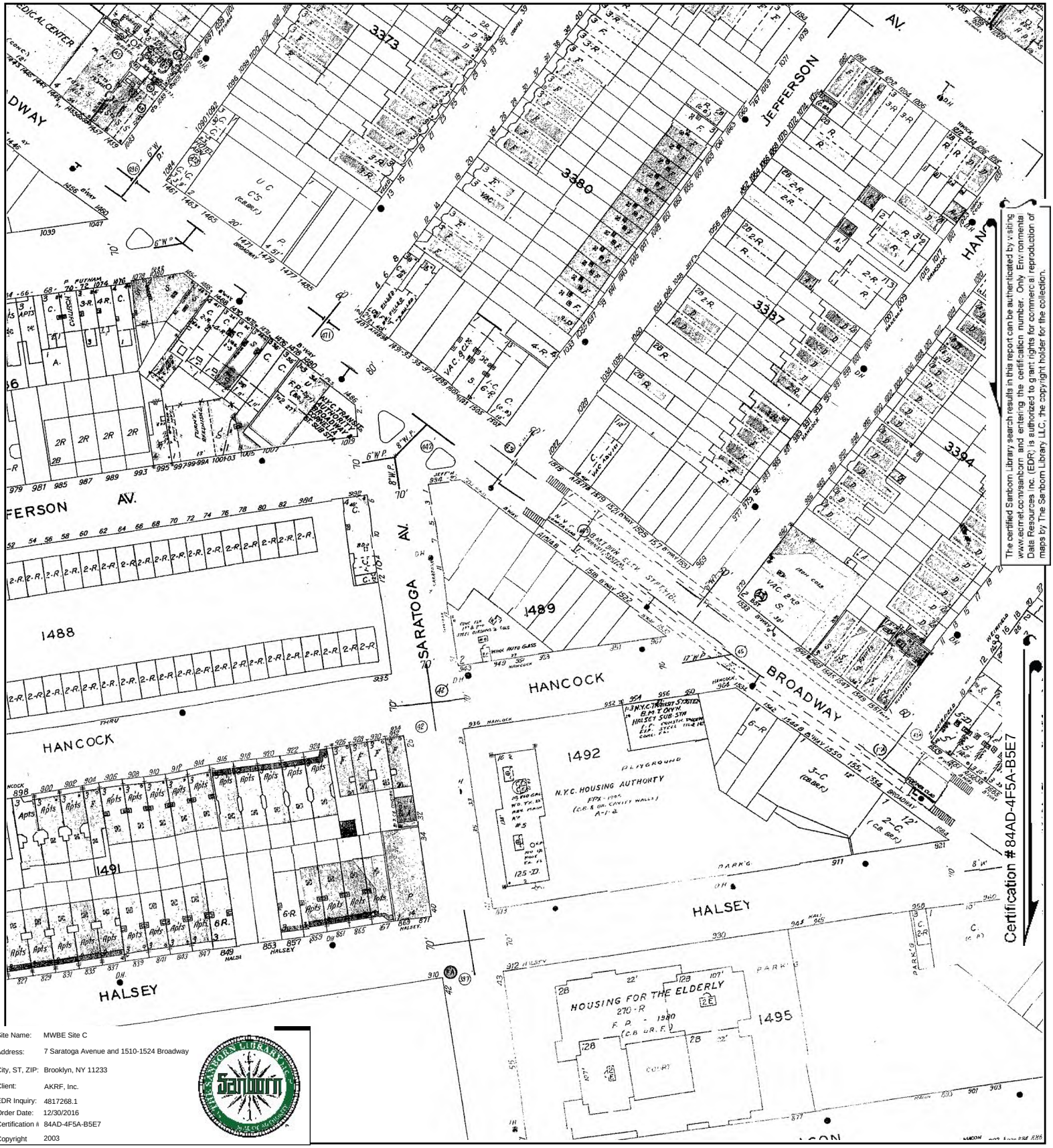

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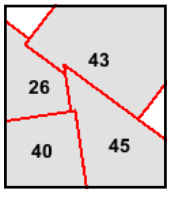

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

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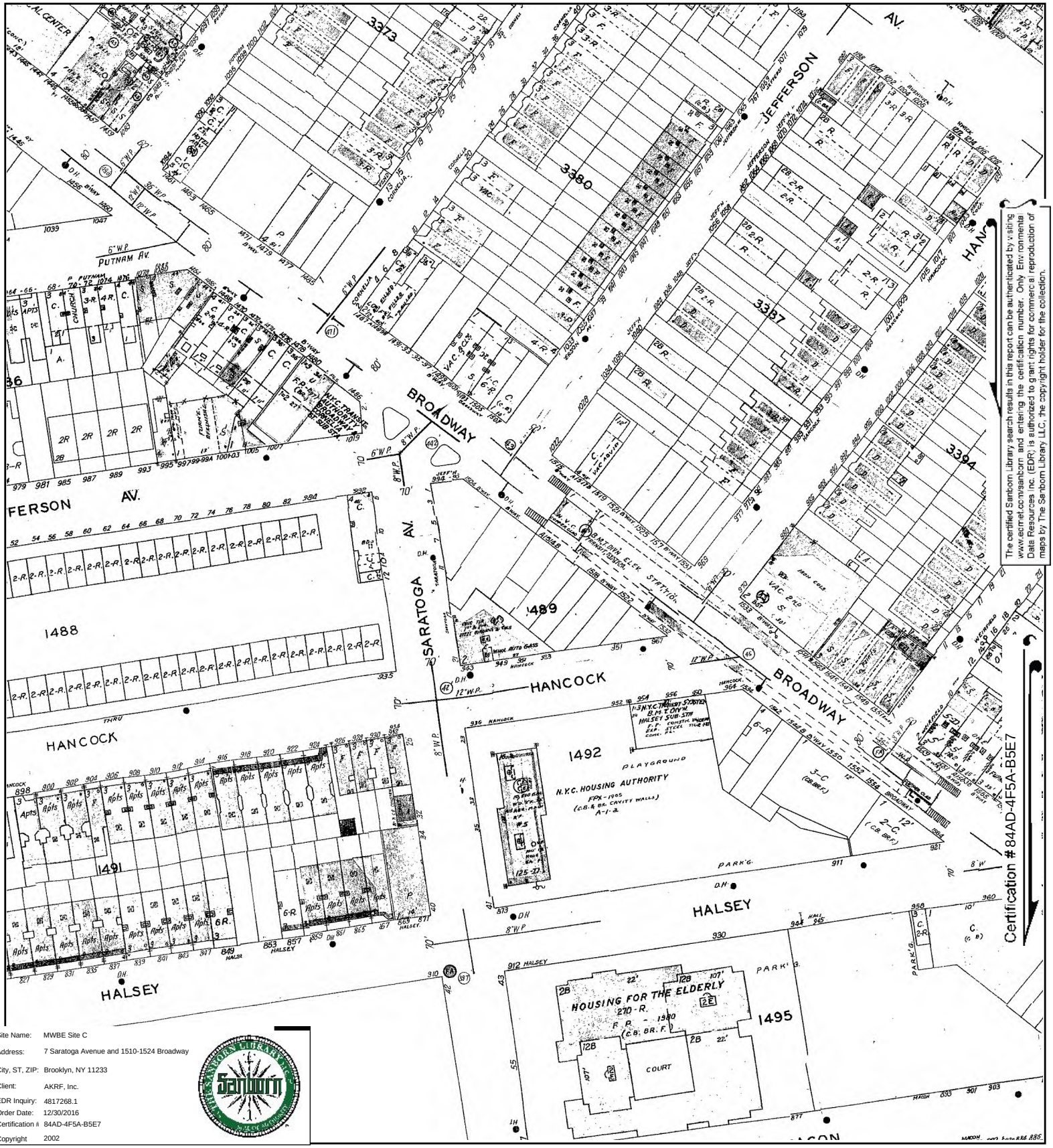

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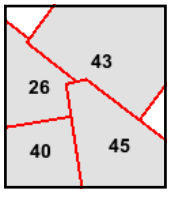

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

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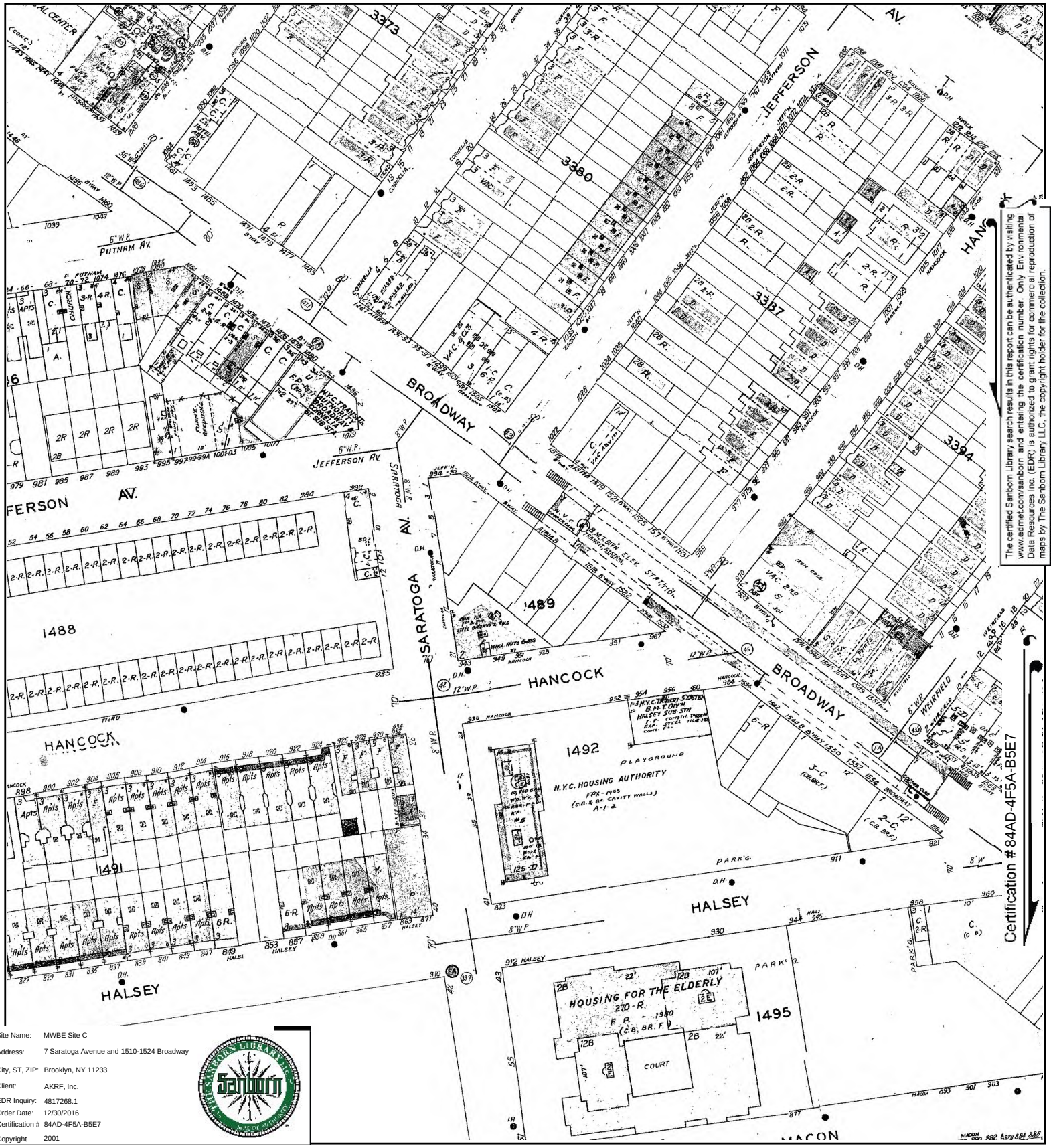

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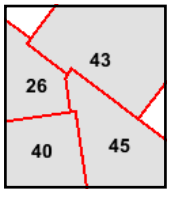

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

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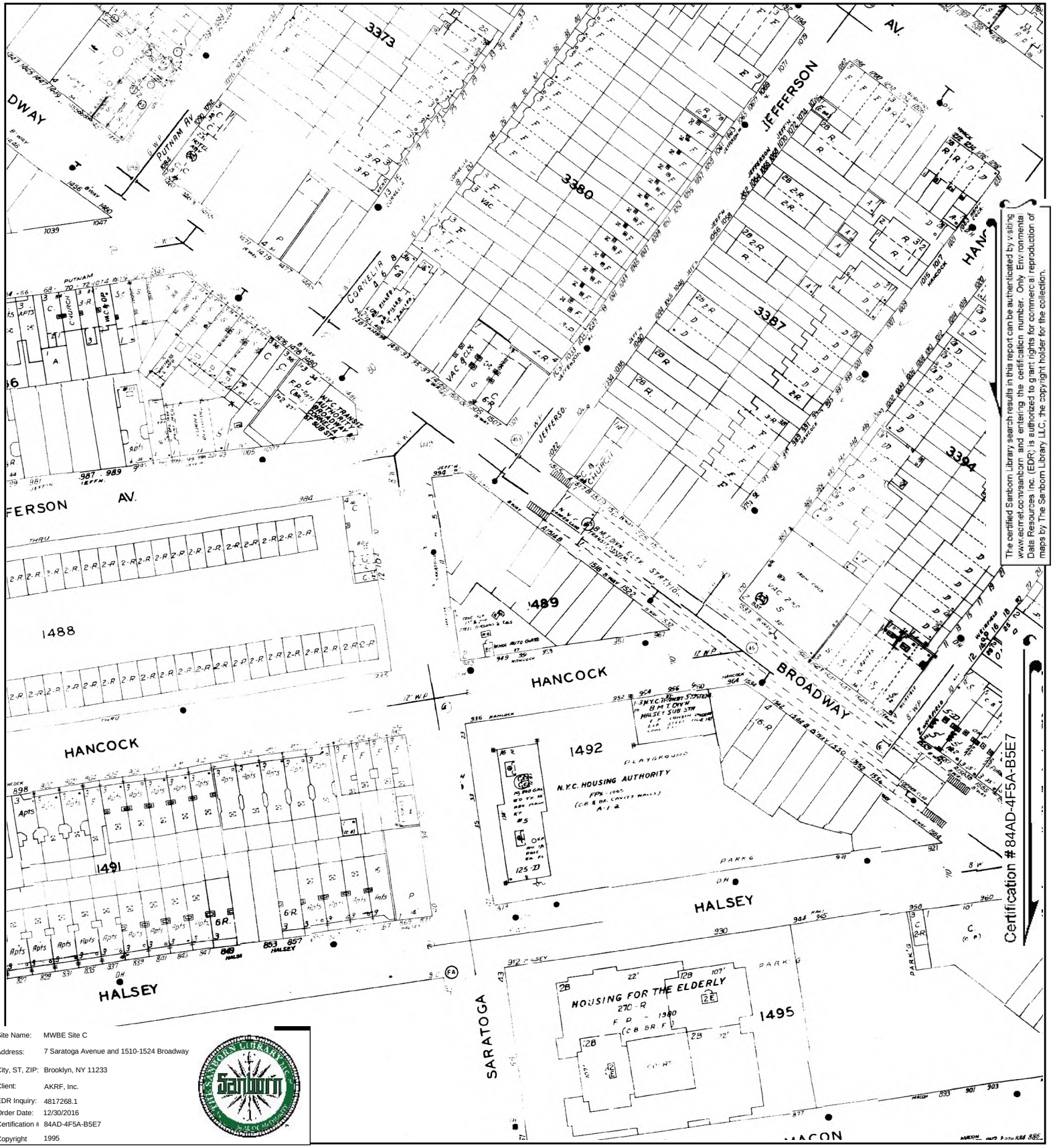

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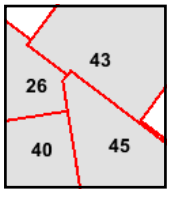

Volume 5, Sheet 45
Volume 5, Sheet 43
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Volume 5, Sheet 40
Volume 5, Sheet 26

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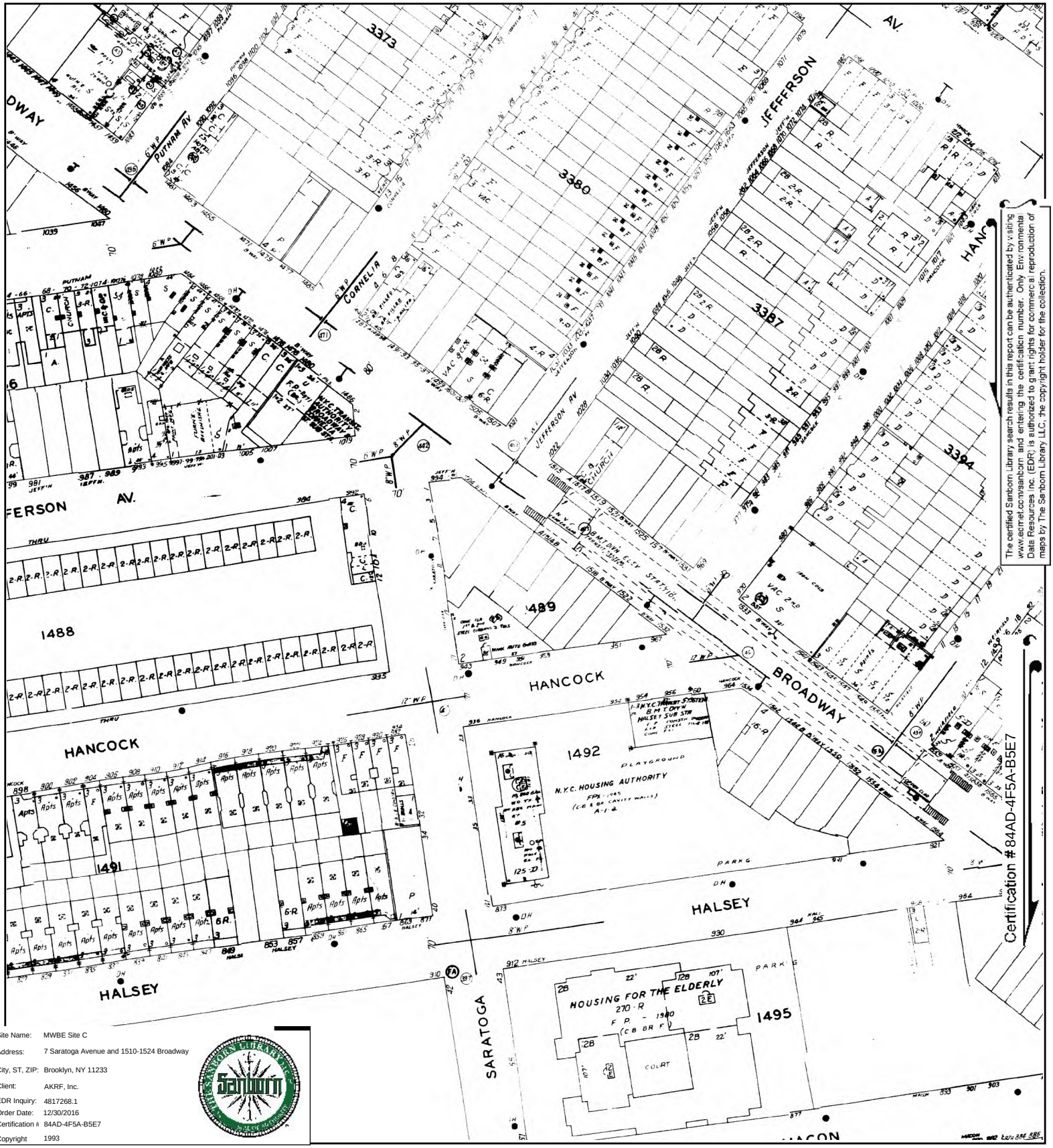

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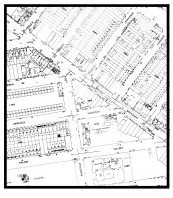

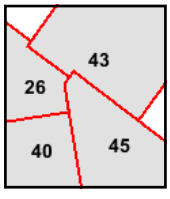

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

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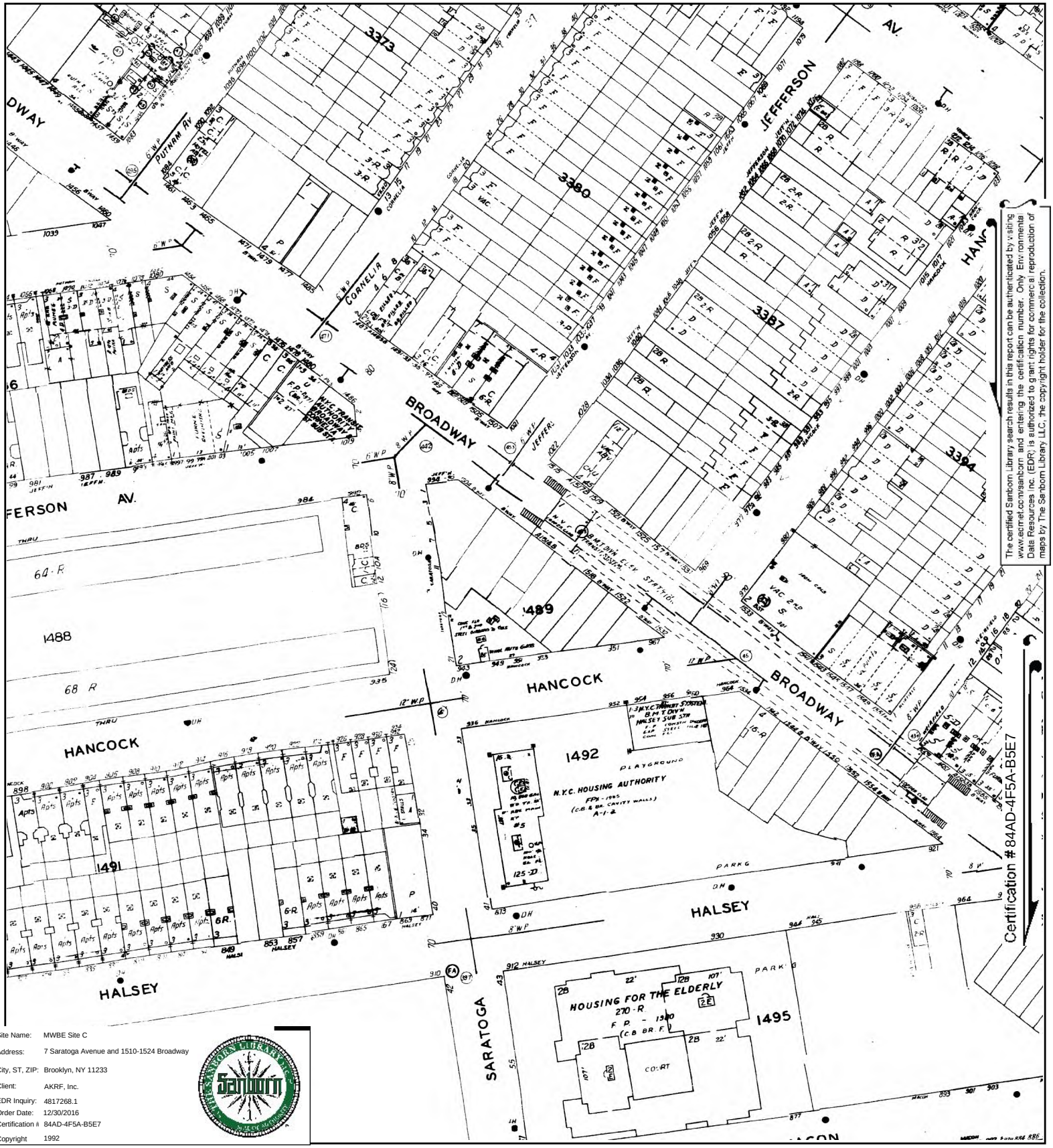

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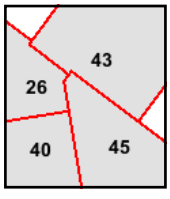

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

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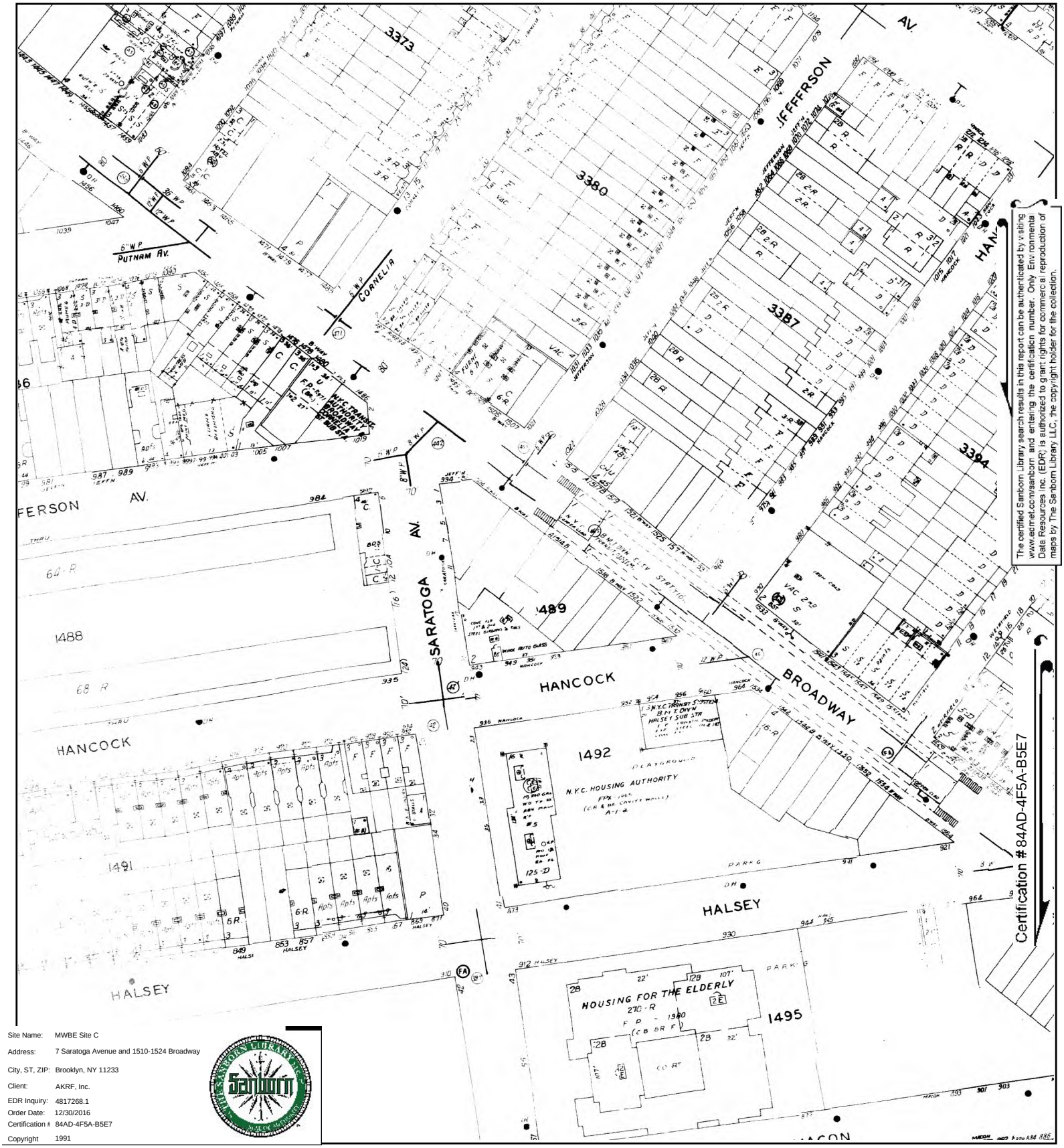

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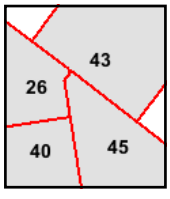

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 26
Volume 5, Sheet 43

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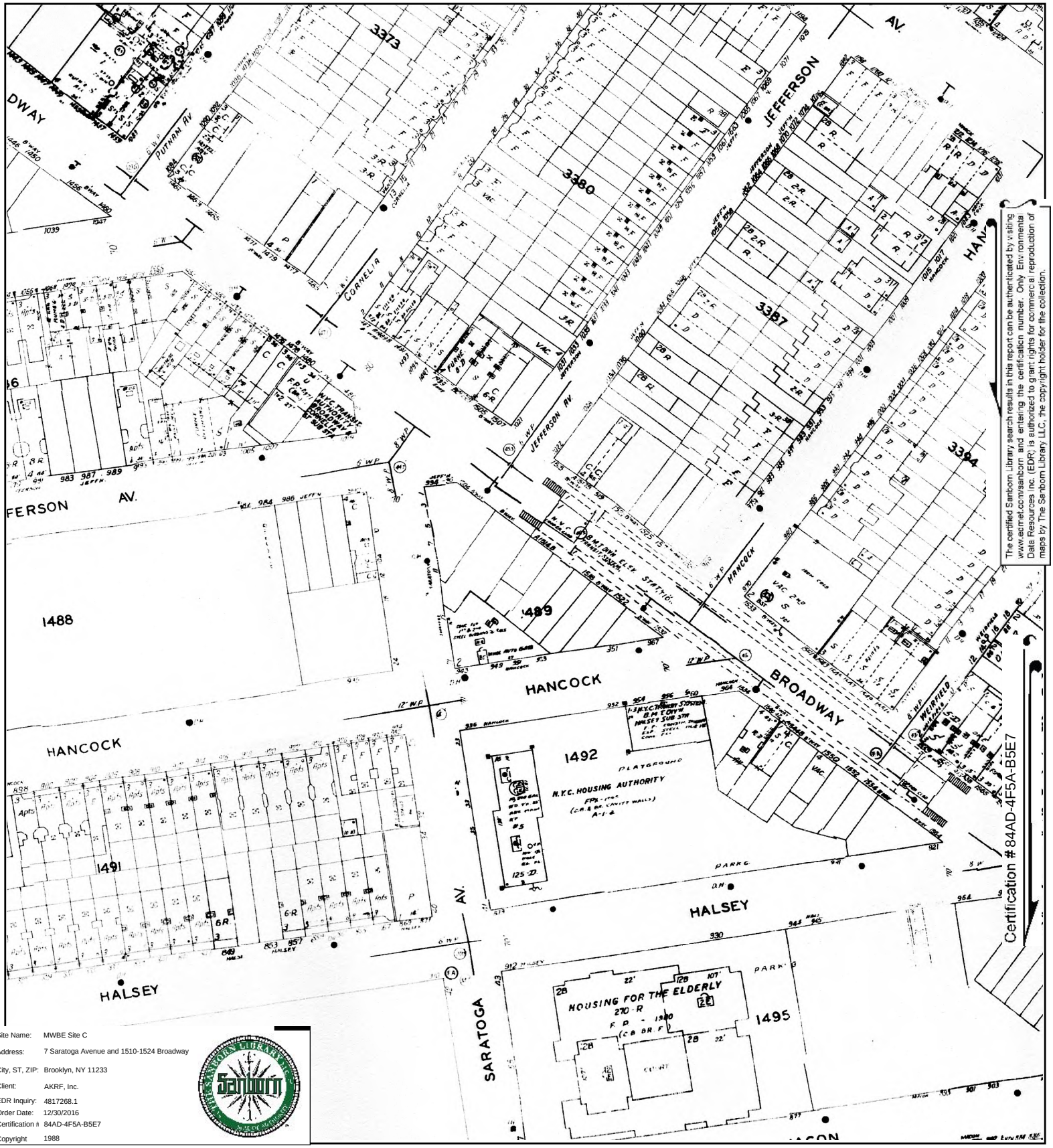

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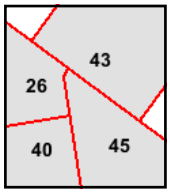

Volume 5, Sheet 45
Volume 5, Sheet 26
Volume 5, Sheet 40
Volume 5, Sheet 43

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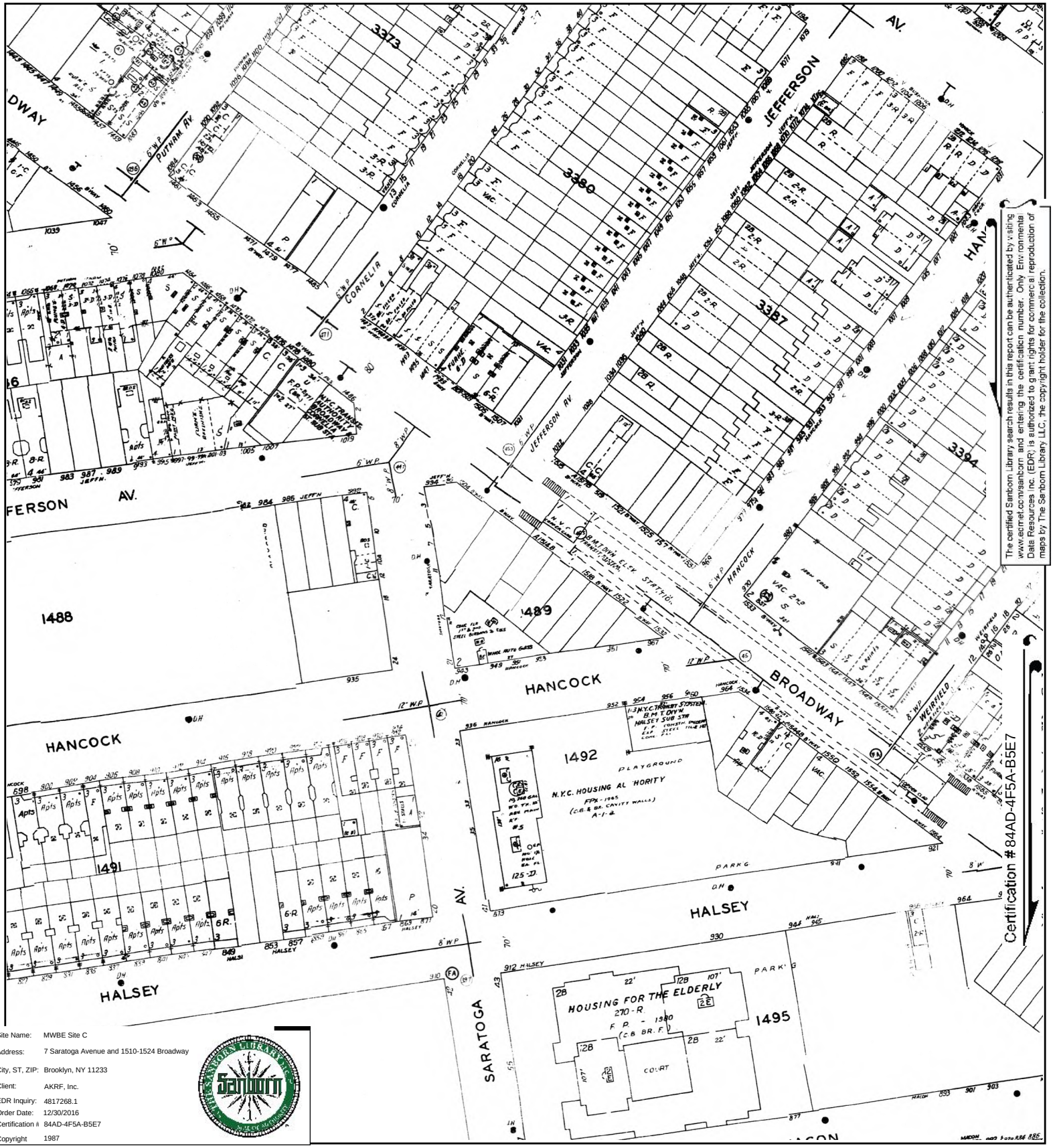

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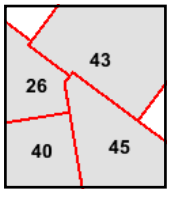

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

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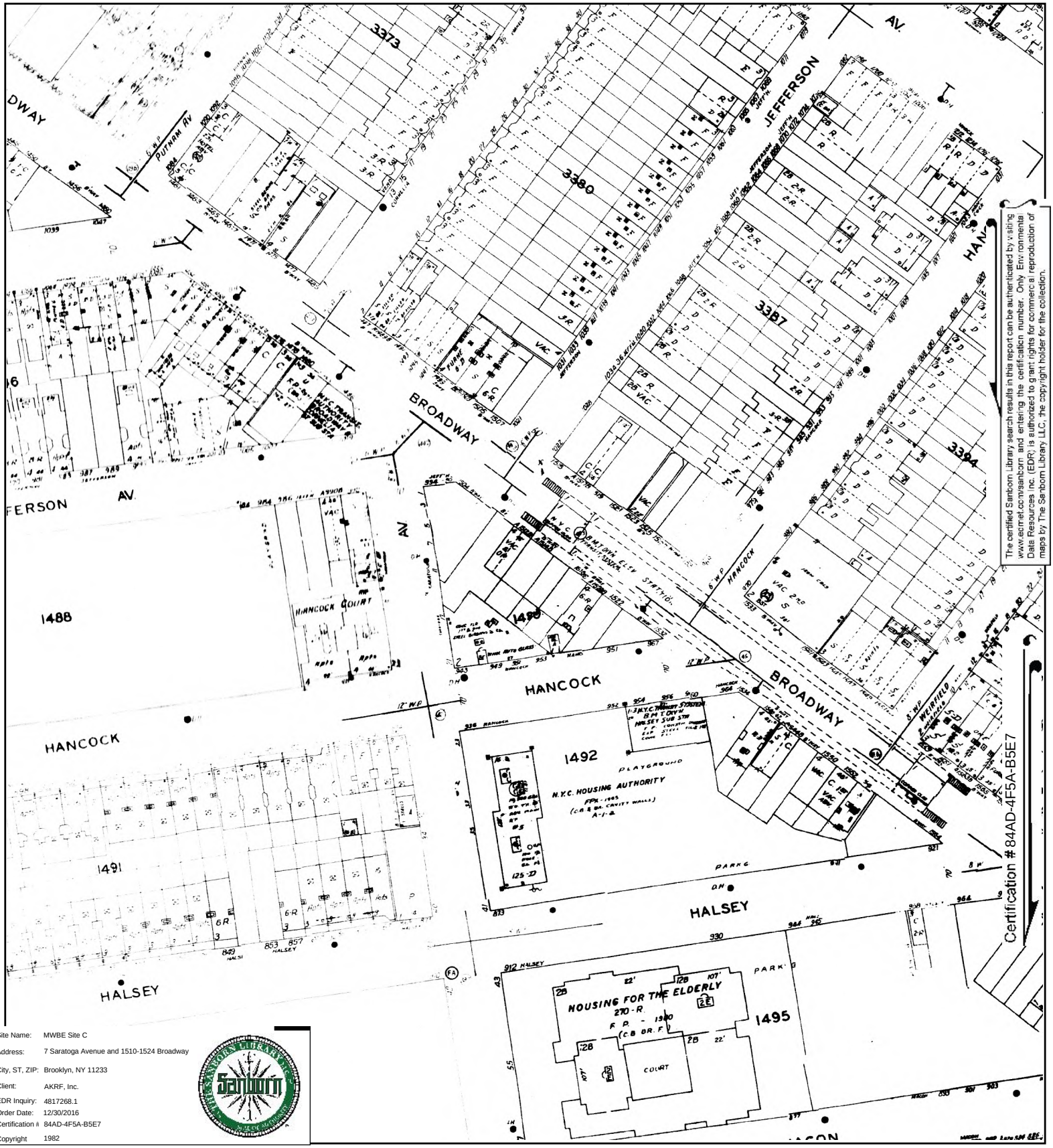

Site Name: MWBE Site C
Address: 7 Saratoga Avenue and 1510-1524 Broadway
City, ST, ZIP: Brooklyn, NY 11233
Client: AKRF, Inc.
EDR Inquiry: 4817268.1
Order Date: 12/30/2016
Certification #: 84AD-4F5A-B5E7
Copyright 1982

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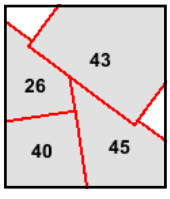

Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26
Volume 5, Sheet 45

0 Feet 150 300 600

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Certified Sanborn® Map

1980

Site Name: MWBE Site C
Address: 7 Saratoga Avenue and 1510-1524 Broadway
City, ST, ZIP: Brooklyn, NY 11233
Client: AKRF, Inc.
EDR Inquiry: 4817268.1
Order Date: 12/30/2016
Certification #: 84AD-4F5A-B5E7
Copyright: 1980

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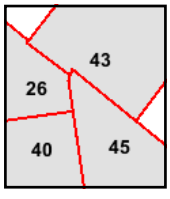
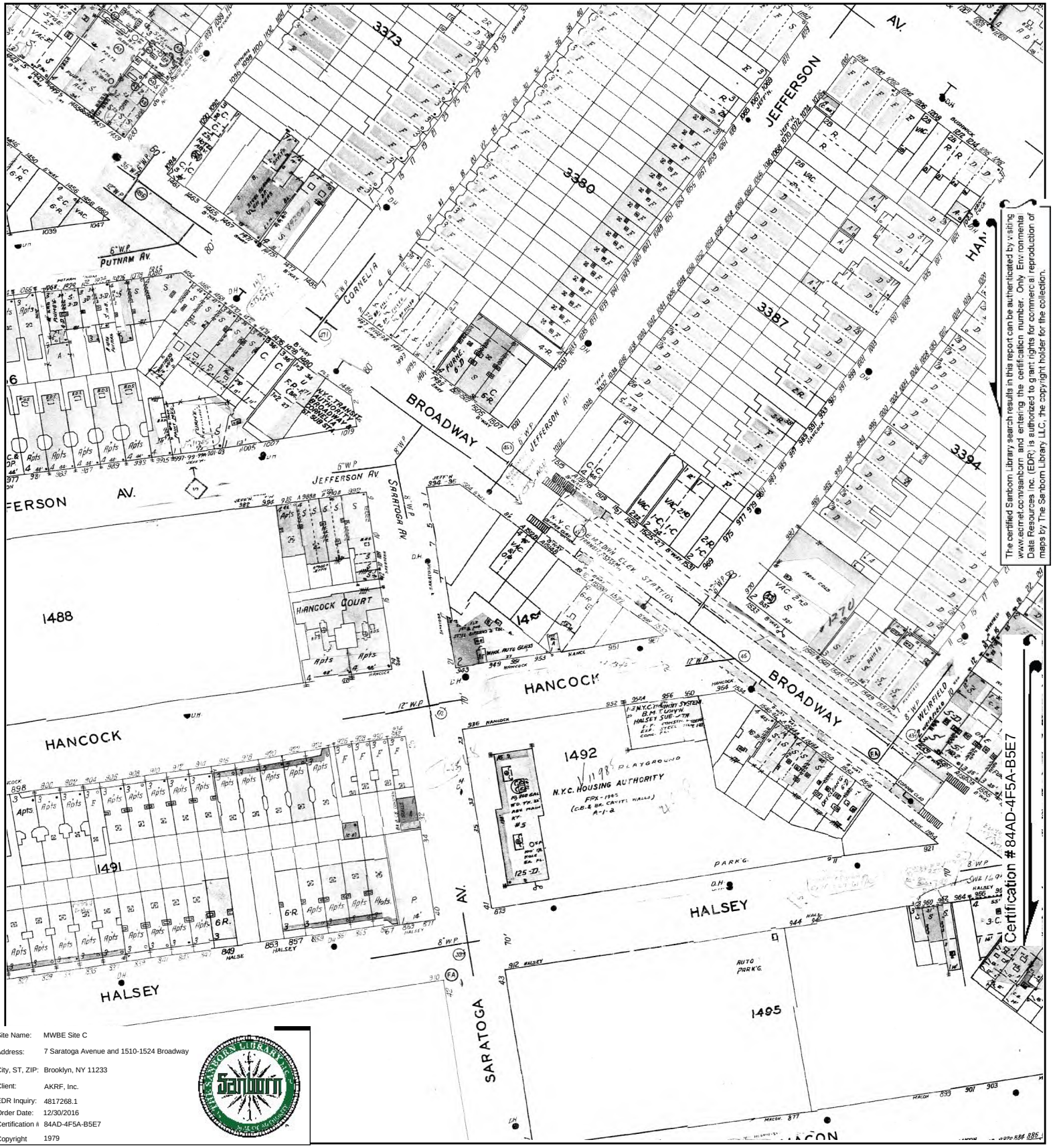


Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

0 Feet 150 300 600



Certification #84AD-4F5A-B5E7

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Client:	AKRF, Inc.
EDR Inquiry:	4817268.1
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Certification #:	84AD-4F5A-B5E7
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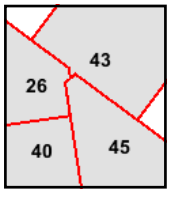

Volume 5, Sheet 45
Volume 5, Sheet 26
Volume 5, Sheet 43
Volume 5, Sheet 40

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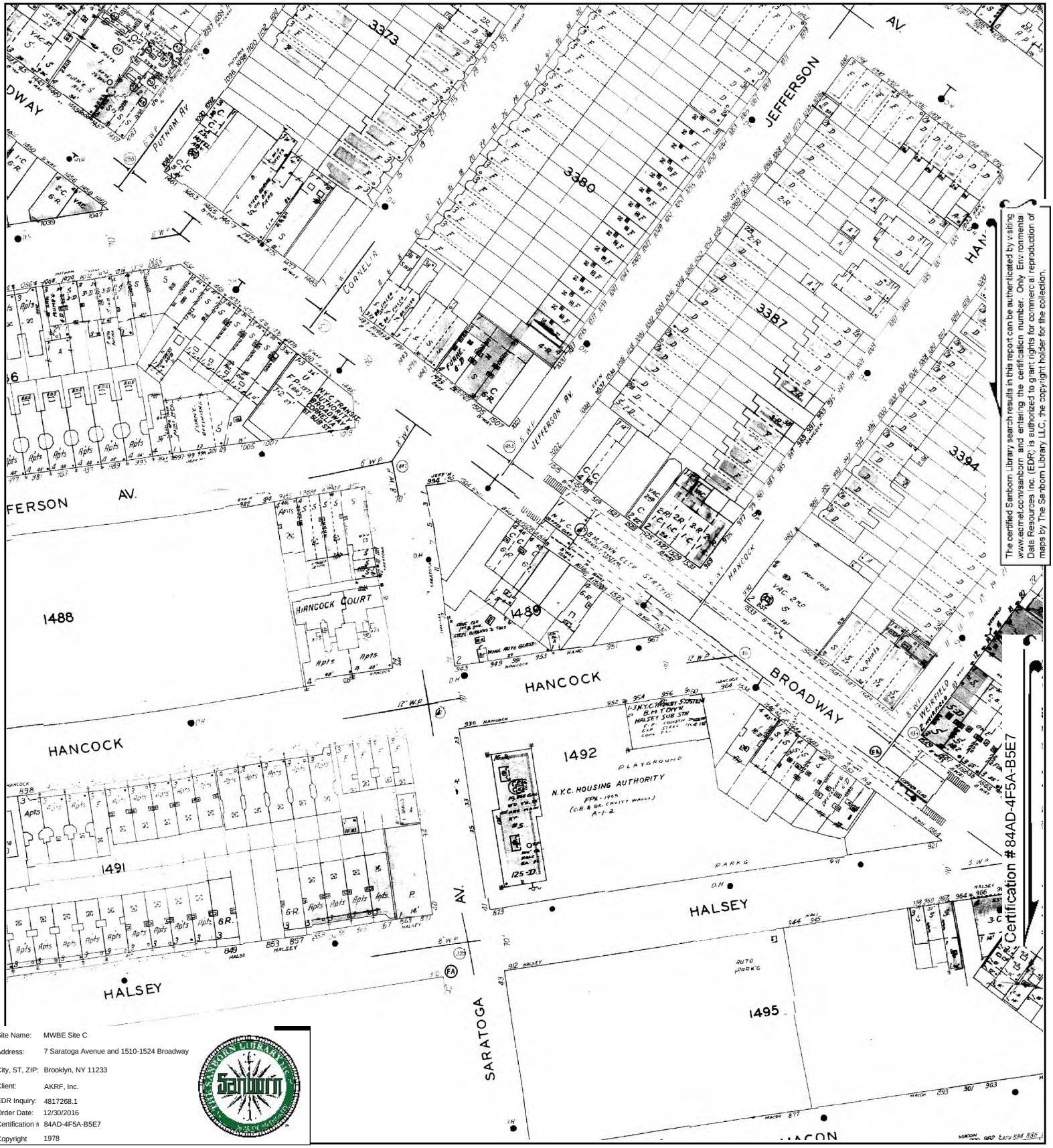

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City, ST, ZIP: Brooklyn, NY 11233
Client: AKRF, Inc.
EDR Inquiry: 4817268.1
Order Date: 12/30/2016
Certification #: 84AD-4F5A-B5E7
Copyright: 1978

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Outlined areas indicate map sheets within the collection.

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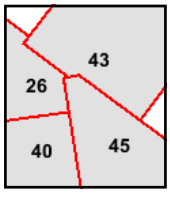

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

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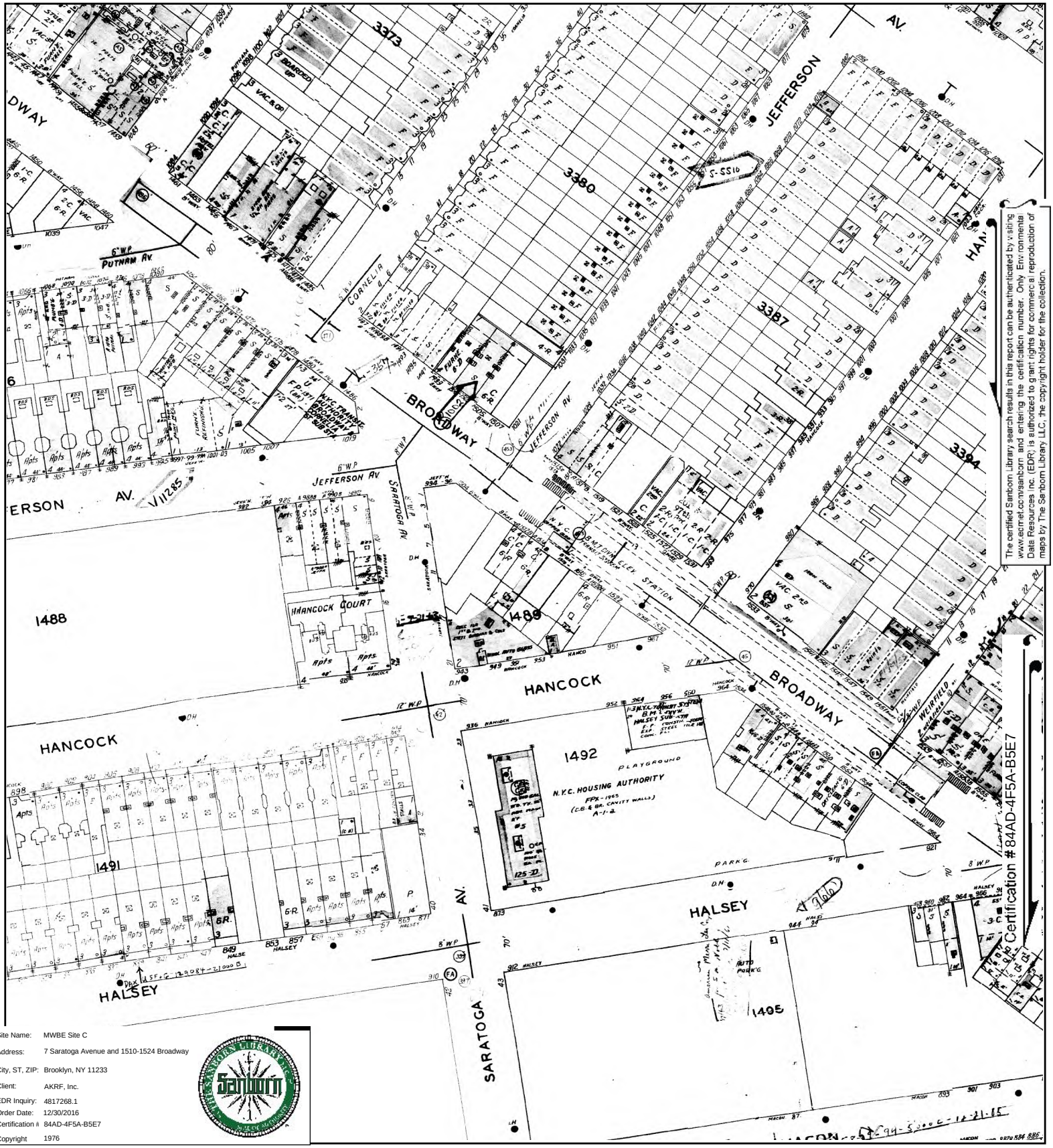

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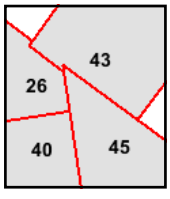

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

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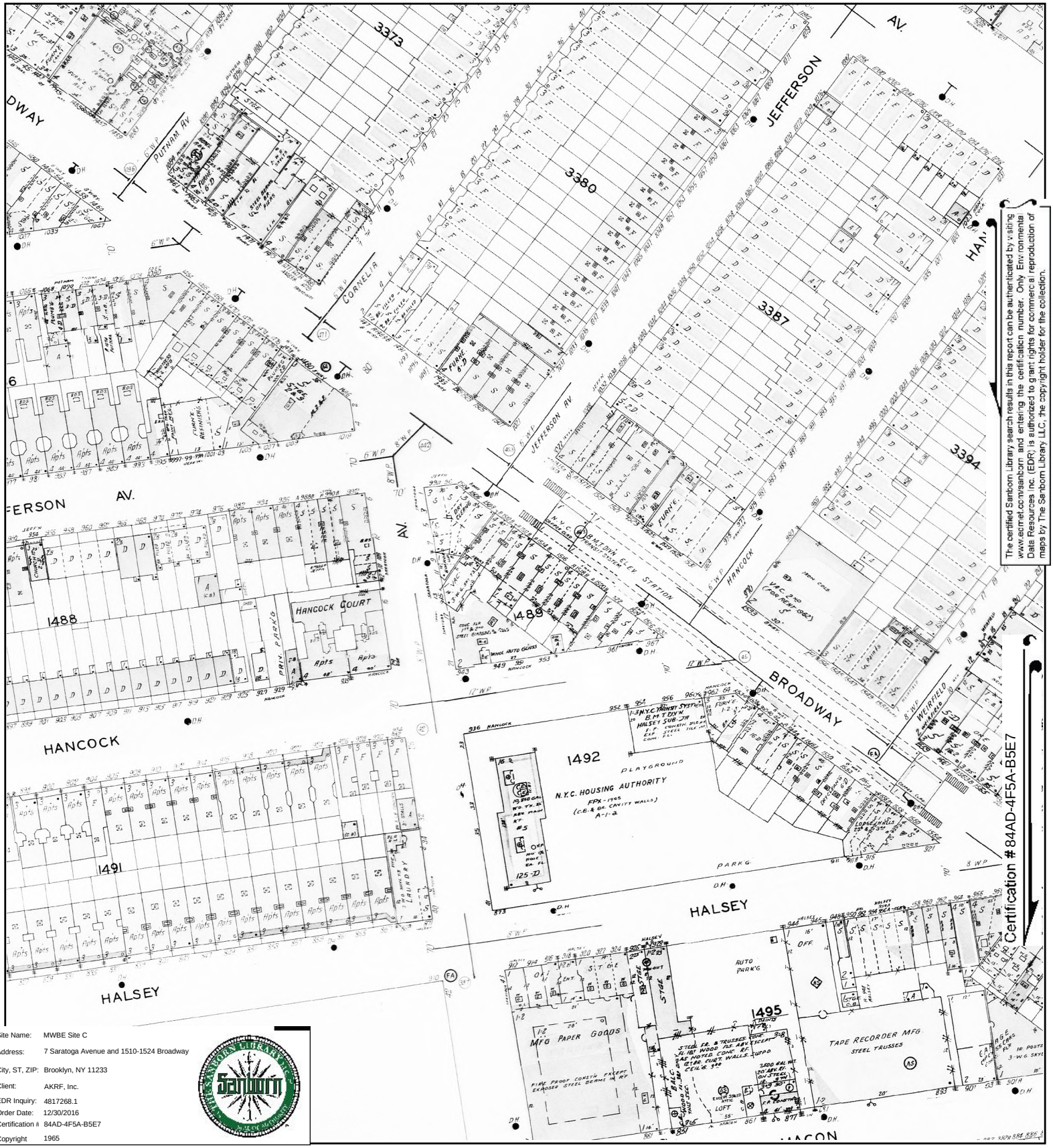

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City, ST, ZIP:	Brooklyn, NY 11233
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EDR Inquiry:	4817268.1
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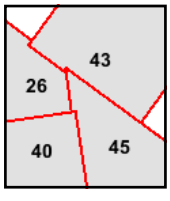

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 26

0 Feet 150 300 600

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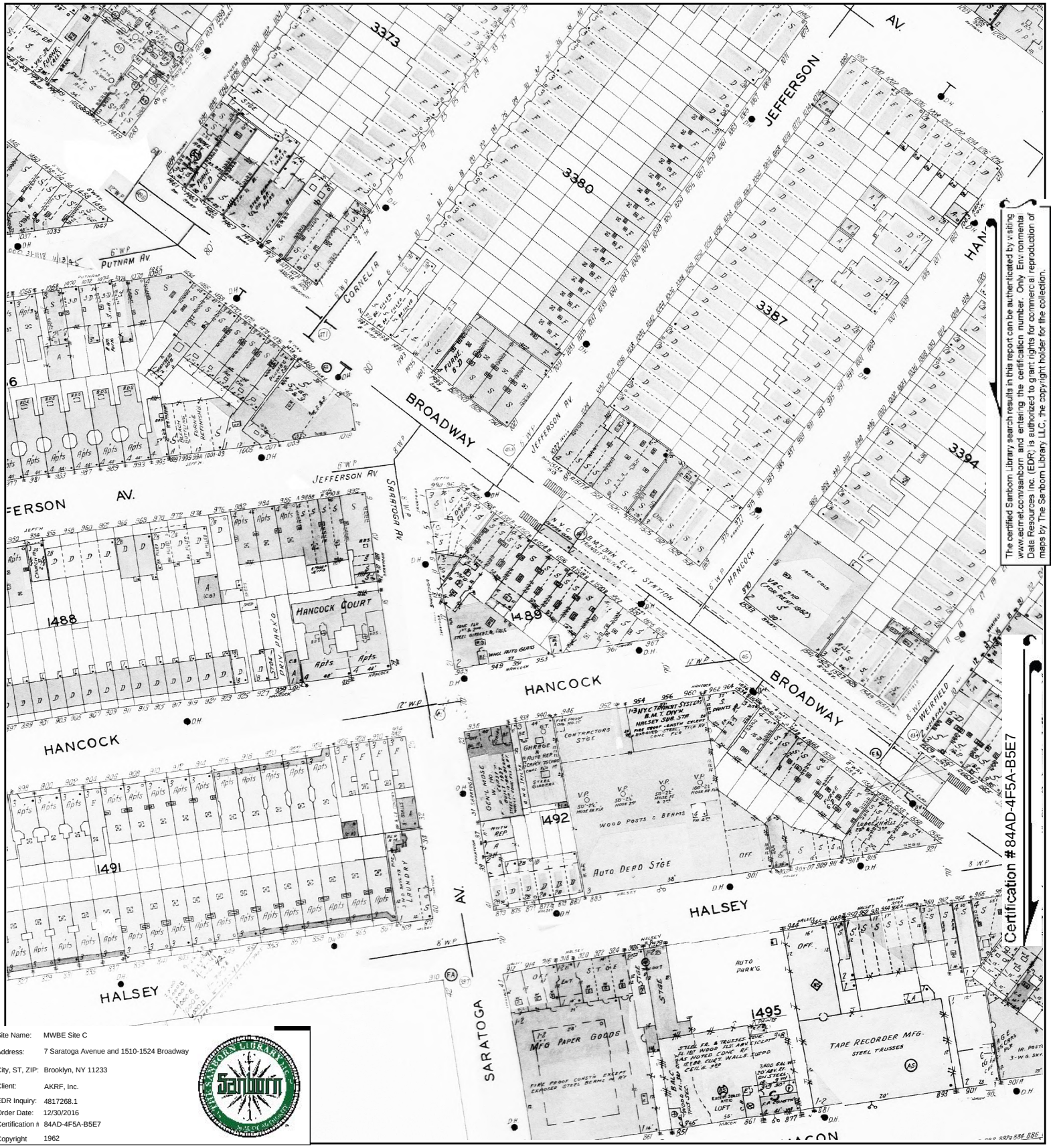

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City, ST, ZIP:	Brooklyn, NY 11233
Client:	AKRF, Inc.
EDR Inquiry:	4817268.1
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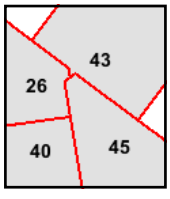

Volume 5, Sheet 40
Volume 5, Sheet 45
Volume 5, Sheet 26
Volume 5, Sheet 43

0 Feet 150 300 600

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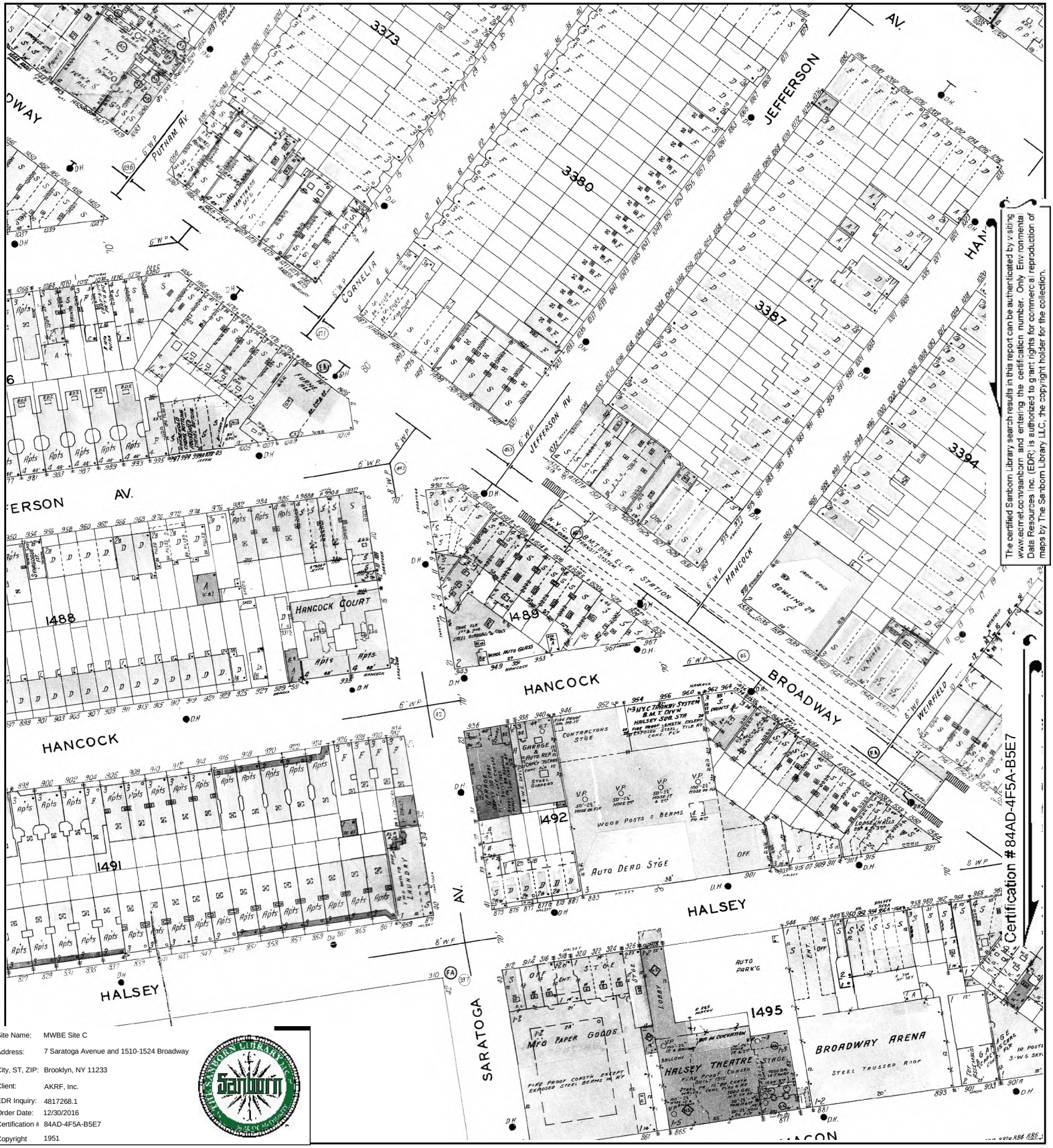

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City, ST, ZIP:	Brooklyn, NY 11233
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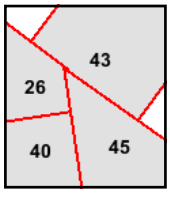

Volume 5, Sheet 45
Volume 5, Sheet 40
Volume 5, Sheet 26
Volume 5, Sheet 43

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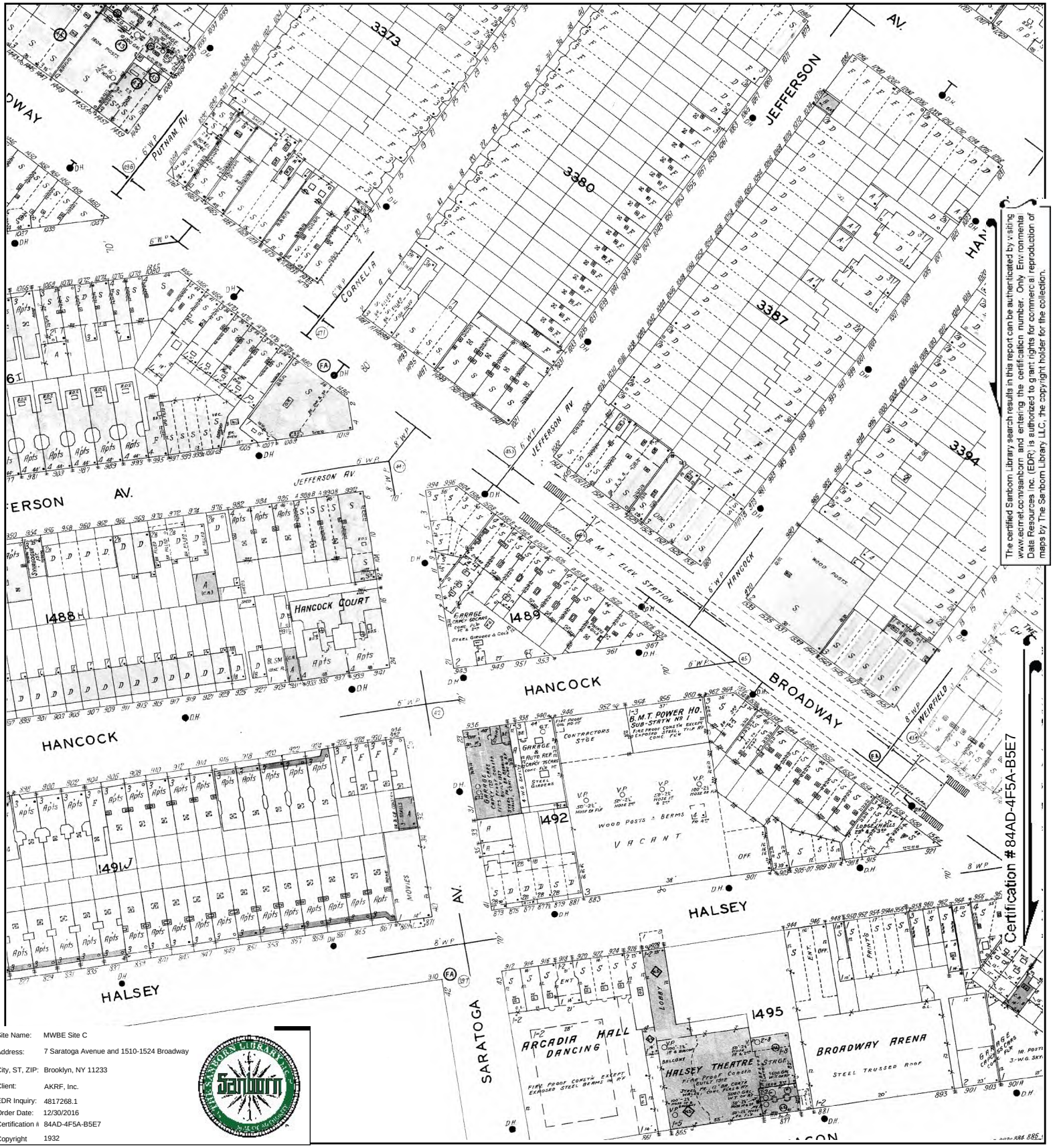

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Site Name:	MWBE Site C
Address:	7 Saratoga Avenue and 1510-1524 Broadway
City, ST, ZIP:	Brooklyn, NY 11233
Client:	AKRF, Inc.
EDR Inquiry:	4817268.1
Order Date:	12/30/2016
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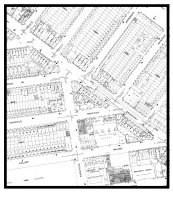

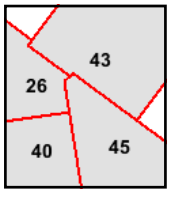

Volume 5, Sheet 45
Volume 5, Sheet 43
Volume 5, Sheet 40
Volume 5, Sheet 26

0 Feet 150 300 600

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Address: 7 Saratoga Avenue and 1510-1524 Broadway
City, ST, ZIP: Brooklyn, NY 11233
Client: AKRF, Inc.
EDR Inquiry: 4817268.1
Order Date: 12/30/2016
Certification #: 84AD-4F5A-B5E7
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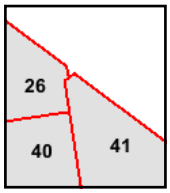

Volume 5, Sheet 41
Volume 5, Sheet 40
Volume 5, Sheet 26

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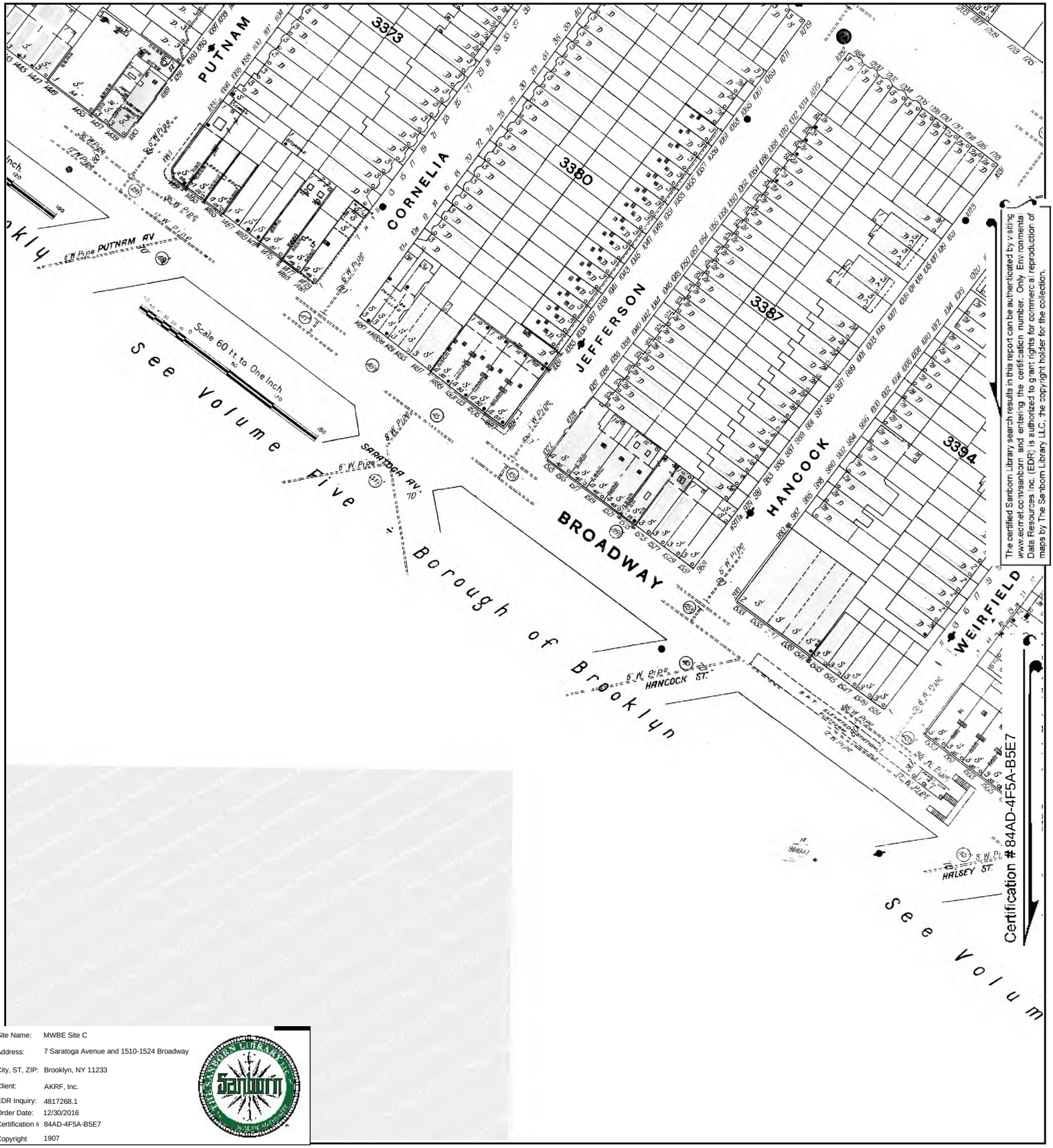

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City, ST, ZIP:	Brooklyn, NY 11233
Client:	AKRF, Inc.
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Order Date:	12/30/2016
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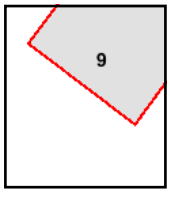

Volume 9, Sheet 9

0 Feet 150 300 600

Site Name:	MWBE Site C
Address:	7 Saratoga Avenue and 1510-1524 Broadway
City, ST, ZIP:	Brooklyn, NY 11233
Client:	AKRF, Inc.
EDR Inquiry:	4817268.1
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Copyright	1888

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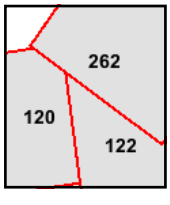

Volume 5, Sheet 122
Volume 5, Sheet 120
Volume 9, Sheet 262

0 Feet 150 300 600

N

APPENDIX C
CITY DIRECTORIES

MWBE Site C
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, NY 11233

Inquiry Number: 4817268.3
December 30, 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

Executive Summary

Findings

City Directory Images

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 1928 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 Corporation	-	X	X	-
2000	Cole Information Services	-	X	X	-
1997	NYNEX	-	X	X	-
	NYNEX	X	X	X	-
1992	NYNEX Informantion Resource Co.	-	X	X	-
1985	NYNEX Information Resources Company	-	X	X	-
1980	New York Telephone	-	X	X	-
1976	New York Telephone	-	X	X	-
	New York Telephone	X	X	X	-
1973	New York Telephone	X	X	X	-
1970	New York Telephone	X	X	X	-
1965	New York Telephone	X	X	X	-
1960	New York Telephone	X	X	X	-
	New York Telephone Company	X	X	X	-
1949	New York Telephone Company	X	X	X	-
1945	New York Telephone	X	X	X	-
1940	New York Telephone	X	X	X	-
1934	R. L. Polk & Co.	X	X	X	-
1928	New York Telephone	X	X	X	-

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***
7 Saratoga Avenue	Client Entered	X
1510 Broadway	Client Entered	X
1512 Broadway	Client Entered	X
1514 Broadway	Client Entered	X
1516 Broadway	Client Entered	X
1518 Broadway	Client Entered	X
1520 Broadway	Client Entered	X
1522 Broadway	Client Entered	X
1524 Broadway	Client Entered	X

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, NY 11233

FINDINGS DETAIL

Target Property research detail.

Broadway

1510 Broadway

Year	*Uses*	*Source*
1973	Lee John candy	New York Telephone
1970	Cruz Frances	New York Telephone
	Lee John candy	New York Telephone
	Taylor Don b	New York Telephone
1965	Jacks Candy Store	New York Telephone
	Taylor Don b	New York Telephone
1960	ADVANCE ONYX TROPHIES INC	New York Telephone
	ECKERLEIN OTTO STATNRY	New York Telephone
	Advance Onyx Trophies Inc	New York Telephone Company
	Eckerlein Otto Statnry	New York Telephone Company
1949	Daves Watch & Jwlry Repr	New York Telephone Company
	New Onxy & Plastic Novelty Co Inc	New York Telephone Company
	PPel Max statnry	New York Telephone Company
	Stieglitz Louis b	New York Telephone Company
1945	Poppel Max statnry	New York Telephone
1940	Poppel Max statnry	New York Telephone
1934	BEITEL SAM STATIONER	R. L. Polk & Co.
	PARTRIDGE ELIZ J H	R. L. Polk & Co.
1928	BEITEL SAML STATY CGRS	New York Telephone
	UMINA BROS FRTS VEGS	New York Telephone

1512 Broadway

Year	*Uses*	*Source*
1997	Jupiter Barry MD	NYNEX
1970	Blount Essie B	New York Telephone
	Johnson Caroline	New York Telephone
	Nicholson Bertha	New York Telephone

FINDINGS

Year	Uses	Source
1970	Sardis Fish & Chips	New York Telephone
	Williams Arnette	New York Telephone
1965	Mrs House Salon of Beauty	New York Telephone
	Thote Francisco	New York Telephone
	Turriciano V pizza	New York Telephone
1960	A M TELVISN & RADIO SVCE	New York Telephone
	MITOLA WILBUR	New York Telephone
	RUGGERI JACK PIZZA	New York Telephone
	SORRENTO PIZZERIA	New York Telephone
	TAYLOR JENNIE	New York Telephone
	A M TELVISN & RADIO SVCE	New York Telephone Company
	Mitola Wilbur	New York Telephone Company
	Ruggeri Jack pizza	New York Telephone Company
	Sorrento Pizzeria	New York Telephone Company
	Taylor Jennie	New York Telephone Company
1949	Spindel Max mts	New York Telephone Company
1940	Spindel Max butchr	New York Telephone
1934	CHINESE STAR INDRY	R. L. Polk & Co.
	ELIAS ISIDORE MEATS	R. L. Polk & Co.
	FLETCHER GERTRUDE H	R. L. Polk & Co.
	PHILLIPS ROBT BR MGR MURPHY HAT STORE H	R. L. Polk & Co.
	TAGGART EDW H	R. L. Polk & Co.
	WAU SAM R	R. L. Polk & Co.
1928	ARNCKE WM BUTR & EGGS	New York Telephone
	FEINBERG I MEAT MKT	New York Telephone

1514 Broadway

Year	Uses	Source
1970	Maffuccis Restrnt & Bar	New York Telephone
1965	Maffuccis Restrnt & Bar	New York Telephone
1960	HALE E MRS	New York Telephone
	KERN MATTHEW J	New York Telephone
	MAFFUCCI S RESTRNT & BAR	New York Telephone
	Hale E Mrs	New York Telephone Company
	Kern Matthew J	New York Telephone Company
	Maffuccis Restrnt & Bar	New York Telephone Company
1949	Maffucci Michl restrnt	New York Telephone Company
	Parsons K S	New York Telephone Company

FINDINGS

Year	Uses	Source
1949	Seidler Emma Mrs	New York Telephone Company
1945	Maffucci M bar grill	New York Telephone
1940	Maffuccl M bar grill	New York Telephone
1934	BRADY CARRIE H	R. L. Polk & Co.
	CLEVELAND HARRY CLK R	R. L. Polk & Co.
	GIBBONS JAS SEC H	R. L. Polk & Co.
	GIBBONS JOHN JOHN J ACCT THE HALSA WOOD CO INC R	R. L. Polk & Co.
	MOORE HARRY CLK H	R. L. Polk & Co.
	PICCOLA COLGT R	R. L. Polk & Co.
1928	CLEVELAND HARRY R	New York Telephone
	KOEHN EUGENE FURN	New York Telephone
	MFRS DISTRIBUTING CO	New York Telephone

1516 Broadway

Year	Uses	Source
1970	Lan Chan T	New York Telephone
	Yee Au Ngan	New York Telephone
1965	Krieg Lillian Mrs	New York Telephone
	Ping Chin	New York Telephone
1960	PING CHIN	New York Telephone
	Ping Chin	New York Telephone Company
1940	Rastelli A tlr	New York Telephone
1934	ANTHONY TAILOR	R. L. Polk & Co.
	FLOCK RALPH SLSMN R	R. L. Polk & Co.
	HOFFMAN ABR N TAILOR H DO	R. L. Polk & Co.
	KRIEG RUDOLPH PRINTER H	R. L. Polk & Co.
	SCHWARTZ ADOLPH H	R. L. Polk & Co.
1928	VOUDY ALMA MISS R	New York Telephone

1518 Broadway

Year	Uses	Source
1965	Bitman Gerald atty	New York Telephone
	Shrimp Joint	New York Telephone
1960	ASSOCIATED REALTY CO	New York Telephone
	CRONIN JOHN	New York Telephone
	MODERN FLOOR COVERING	New York Telephone
	SCHULMAN BERNARD INS	New York Telephone
	Associated Realty Co	New York Telephone Company

FINDINGS

Year	Uses	Source
1960	Cronin John	New York Telephone Company
	Modern Floor Covering	New York Telephone Company
	Schulman Bernard Ins	New York Telephone Company
1949	Haas Agency The ins	New York Telephone Company
	Stirnweis V Statnry	New York Telephone Company
1945	Haas Agency The ins	New York Telephone
	HAAS See also HAASE HAASS HASS	New York Telephone
1940	Haas Agency The ins	New York Telephone
	Sunshine Frieda sewng mach	New York Telephone
1934	CLARK JOHN PNTR H	R. L. Polk & Co.
	CRAWFORD CATH H	R. L. Polk & Co.
	CRAWFORD CATH CANDY WKR R	R. L. Polk & Co.
	HAAS AGENCY THE INS	R. L. Polk & Co.
	SAUER JOS PHOTO ENGR H	R. L. Polk & Co.
1928	COLLINS WM H R	New York Telephone
	FOX MARTIN R	New York Telephone
	HAAS AGENCY INS	New York Telephone

1520 Broadway

Year	Uses	Source
1976	BELBERG BWAY WINES & LIQUORS INC	New York Telephone
	FISHER A M	New York Telephone
1973	Broadway Tux Makers	New York Telephone
	Bway Wine & Liquor Store	New York Telephone
	Fisher A M	New York Telephone
	Pierses Wine & Liquor Store	New York Telephone
1970	Broadway Window Cing Co of Brooklyn	New York Telephone
	Bway Wine & Liquor Store	New York Telephone
	Melaccio M	New York Telephone
	Pierses Wine & Liquor Store	New York Telephone
1965	BWAY TIRE CO	New York Telephone
	Bway Wine & Liquor Store	New York Telephone
	Manning Edw J	New York Telephone
	Melaccio MI	New York Telephone
	Pierses Wine & Liquor Store	New York Telephone
1960	BWAY WINE & LIQUOR STORE	New York Telephone
	PIERSE S WINE & LIQUOR STORE	New York Telephone
	SHERRIFFS MARY	New York Telephone
	Broadway Theatr	New York Telephone Company

FINDINGS

Year	Uses	Source
1960	Bway Wine & Liquor Store	New York Telephone Company
	Pierses Wine & Liquor Store	New York Telephone Company
	Sherriffs Mary	New York Telephone Company
1949	Broadway Swap Shop	New York Telephone Company
	Bway Wine & Liquor Store	New York Telephone Company
	Pierses Wine & Liquor Store	New York Telephone Company
1945	Pierses Wine & Liquor Store	New York Telephone
1940	Broadway Wine & Liquor Store	New York Telephone
	Pierses Wine & Liquor Store	New York Telephone
1934	EGAN HENRY CHAUF H	R. L. Polk & Co.
	FLEMING DANL PAPER PORTER H	R. L. Polk & Co.
	FREDK WELDER H	R. L. Polk & Co.
	KUPPEL GRACE CHEMIST R	R. L. Polk & Co.
	LOGSIVEN JAS CLK H	R. L. Polk & Co.
	MAFUCCI MICHELO R	R. L. Polk & Co.
	MELLNCEIO GUSSPPL LAB H	R. L. Polk & Co.
	NONO FADE DRESS HOUSE (DAVID RADIN DRESS MFRS	R. L. Polk & Co.
	PONS GEO CLK H	R. L. Polk & Co.
	R	R. L. Polk & Co.
	RADIN DAVID	R. L. Polk & Co.
1928	DEUTSCH SAML CLNG & DYNG	New York Telephone
	GOODINSKY AL MEAT	New York Telephone

1522 Broadway

Year	Uses	Source
1970	Broadway Action Group	New York Telephone
1965	WMSBURG PARQUET FLOORING CO INC	New York Telephone
	Wmsburg Refrigratn Svce	New York Telephone
1960	R & H VOLKENS SVCE	New York Telephone
	VOLKENS ROBT B	New York Telephone
	R & H Volkens Svce	New York Telephone Company
	Volkens Robt b	New York Telephone Company
1949	Reliable Juvenile Centr	New York Telephone Company
1934	WESTREICH ALBERT PNTS	R. L. Polk & Co.
1928	GOLLENDER D PNTRS SUPLS	New York Telephone

FINDINGS

1524 Broadway

Year	*Uses*	*Source*
1970	Sal & Carls Fish Mkt	New York Telephone
1965	Sal & Carls Fish Mkt	New York Telephone
1960	SAL & CARL S FISH MKT	New York Telephone
	Sal & Carls Fish Mkt	New York Telephone Company

SARATOGA AVE

7 SARATOGA AVE

Year	*Uses*	*Source*
1970	Bit O Glamour buccuns	New York Telephone

Saratoga Avenue

7 Saratoga Avenue

Year	*Uses*	*Source*
1970	Bit O Glamour buccuns	New York Telephone

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

AV

3 SARATOGA AV

Year	Uses	Source
1934	CHARLES BEAUTY PARLOR	R. L. Polk & Co.

BROADWAY

1500 BROADWAY

Year	Uses	Source
1949	Duckert Harry F	New York Telephone Company
1928	TRACEY GEO R	New York Telephone

1504 BROADWAY

Year	Uses	Source
1965	Traina Orthopedic Shoe Reprng	New York Telephone
1960	Traina Augustino shoe repr	New York Telephone Company
	TRAINA AUGUSTINO SHOE REPR	New York Telephone
1949	Mazzola Jack frt veg mkt	New York Telephone Company
1928	FORD DEALER	New York Telephone
	ECONOMY STORE THE DRY GOODS	New York Telephone
	CURTH AUTO SALES CO	New York Telephone

1506 BROADWAY

Year	Uses	Source
1965	World French Cleaners	New York Telephone
1960	World French Cleaners	New York Telephone Company
	WORLD FRENCH CLEANERS	New York Telephone
1949	Traina Bros dry Clng	New York Telephone Company
1934	AYRES JANE R	R. L. Polk & Co.
	HEATH JENNIE R	R. L. Polk & Co.
1928	ROBT FURRIER	New York Telephone
	GOODWIN RICHARD REALTY CO	New York Telephone
	GOODWIN RICHD RL EST	New York Telephone
	BURKE EDMUND A RL EST & INS	New York Telephone

FINDINGS

1507 BROADWAY

Year	Uses	Source
2013	WAN SHUEN	Cole Information Services
2008	1507 BROADWAY LAUNDROMAT INC	Cole Information Services
1970	LEOPOLD RUTH INC drses	New York Telephone
1965	LEOPOLD RUTH INC drses	New York Telephone
	Payne Luther	New York Telephone
1960	ENGERT EDW	New York Telephone
	LEOPOLD RUTH INC DRSES	New York Telephone
	NEWMAN LILLIAN	New York Telephone
	Engert Edw	New York Telephone Company
	LEOPOLD RUTH INC drses	New York Telephone Company
	Newman Lillian	New York Telephone Company
1949	Elmendorf Frank E	New York Telephone Company
	London Womens Wearing Apparel Inc	New York Telephone Company
	Murrys London Dress Shop Inc	New York Telephone Company
	Prinz Wm	New York Telephone Company
	Strickler Chas drses	New York Telephone Company
1945	London Womens Wearing Apparel Inc	New York Telephone
	Murrys London Dress Shop Inc	New York Telephone
	Strickler Chas drses	New York Telephone
1940	Murrys London Dress Shop Inc	New York Telephone
	Schmitt L Mrs	New York Telephone
	Strickler Chas drses	New York Telephone
1934	SAVERY WM J HLPR H	R. L. Polk & Co.
	REISS HENRY H	R. L. Polk & Co.
	MURRY S FASHION SHOP (BR) DAVID STRICKLER MGR	R. L. Polk & Co.
	MORSEH WM H	R. L. Polk & Co.
	MEYER KATH MRS R	R. L. Polk & Co.
	ENGEBRETSEN MAY R	R. L. Polk & Co.
	ENGEBRETSEN ELNAR H	R. L. Polk & Co.
1928	MURRY S FASHION SHOP	New York Telephone
	MEYER HERBERT W DDS OFF	New York Telephone
	STRICKLER SAML-	New York Telephone

1508 BROADWAY

Year	Uses	Source
1970	Jefferson Restrnt	New York Telephone
1965	Jefferson Restrnt	New York Telephone

FINDINGS

Year	Uses	Source
1960	JEFFERSON RESTRNT	New York Telephone
	Jefferson Restrnt	New York Telephone Company
1949	Jefferson Restrnt	New York Telephone Company
1945	Menikons & Naim lunch	New York Telephone
1940	Cort Peter lunch	New York Telephone
1934	UMANO CATETINA R	R. L. Polk & Co.
	UMANO BARTOLO R	R. L. Polk & Co.
	LINDNER ANNA HSAKOR H	R. L. Polk & Co.
1928	PRUDENTIAL DENTAL LAB	New York Telephone

1511 BROADWAY

Year	Uses	Source
1934	GIBBONS MICHL PLMBR R	R. L. Polk & Co.

E SARTGA AVE

14 E SARTGA AVE

Year	Uses	Source
1960	BARTHEL MARY	New York Telephone
	Barthel Mary	New York Telephone Company

JEFFERSON AVE

1012 JEFFERSON AVE

Year	Uses	Source
1928	HEATH CHAS I R	New York Telephone

1021 JEFFERSON AVE

Year	Uses	Source
1973	Brown Eunice	New York Telephone

JEFRERSON AVE

1005 JEFRERSON AVE

Year	Uses	Source
1992	PELHAM J	NYNEX Informantion Resource Co.
	HARDY JESSE	NYNEX Informantion Resource Co.
1960	GUTHOFF MARGARET	New York Telephone

FINDINGS

1015 JEFRERSON AVE

Year	Uses	Source
1960	ALLISONS CHRISTMAS STOCKINGS	New York Telephone

SARATOGA AVE

5 SARATOGA AVE

Year	Uses	Source
1960	Greco Anthony G rl est	New York Telephone Company
	Greco Anthony G lwyr	New York Telephone Company
1949	Lutsky Meyer	New York Telephone Company
1940	Vanderhyde Harry statnry	New York Telephone
1934	VAN S CANDY SHOPPE	R. L. Polk & Co.

8 SARATOGA AVE

Year	Uses	Source
2013	8 STAR FOOD CORP	Cole Information Services
2008	8 SARATOGA SUPERMARKET	Cole Information Services
2005	8 Saratoga Supermarket	Hill-Donnelly Corporation
1997	Outlaws Athletic Club	NYNEX
1973	Jukes Lounge	New York Telephone
1970	Jokes Lounge	New York Telephone
	Jukes Jas J	New York Telephone
1965	Jaillet Raymond F tavrn	New York Telephone
	Rays Bar & Grill	New York Telephone
1960	Rays Bar & Grill	New York Telephone Company
1949	Rays Bar & Grill	New York Telephone Company
1945	Highland Bar & Grill	New York Telephone
1940	Highland Bar & Grill	New York Telephone
1934	SARATOGA FURNITURE EXCHANGE FURN USED	R. L. Polk & Co.

9 SARATOGA AVE

Year	Uses	Source
2005	H Thornton E L A	Hill-Donnelly Corporation
	H Moore Naseera	Hill-Donnelly Corporation
	Leary C	Hill-Donnelly Corporation
1949	Orenstein Harold B MD ofc	New York Telephone Company
	Orenstein Harold B MD ofc	New York Telephone Company

FINDINGS

10 SARATOGA AVE

Year	*Uses*	*Source*
2005	Dang Que Minh 7 0 o	Hill-Donnelly Corporation
	h Un Hui o	Hill-Donnelly Corporation
	h Un Mel	Hill-Donnelly Corporation
	Un Pi Yu	Hill-Donnelly Corporation
	Uu 81 Qing 0 o	Hill-Donnelly Corporation
	Wang Hiua Xian	Hill-Donnelly Corporation
2000	APARTMENTS	Cole Information Services
	MERCEDES ACEVDO	Cole Information Services
	BAYSHON CULLER	Cole Information Services
	7 LEON HARRIS	Cole Information Services
	SERENE MARTINEZ	Cole Information Services
	5C FRANCIS POLONIO	Cole Information Services
	SUSAN SYLVESTER	Cole Information Services
1997	CULLER CULLER Bayshon	NYNEX
	HARRIS Leon	NYNEX
1973	Barnaby Cecilia	New York Telephone
	Kenny Henry	New York Telephone
	Variety Candy Store	New York Telephone
1970	Kenny Fienry	New York Telephone
	Variety Candy Store	New York Telephone
1965	Kenny Henry	New York Telephone
	Zito Eliz	New York Telephone
1960	Auslander Gustav plumbg & heatg	New York Telephone Company
	Demmerle Walter	New York Telephone Company
	Feldman Harry	New York Telephone Company
	Frecentese Wm	New York Telephone Company
	Leading Plumbing & Heating Corp	New York Telephone Company
	Schultz John	New York Telephone Company
	Zito Eliz	New York Telephone Company
	AUSLANDER GUSTAV PLUMBG & HEATG	New York Telephone
1949	Feldman Harry	New York Telephone Company
1945	Auslander Gustav plumbg & heatg	New York Telephone
1940	Auslander Gustav plumbg & heatg	New York Telephone
1934	JASALAEK CARL SUPT H	R. L. Polk & Co.
	JASOLNIK CARL PASTEURIZER H	R. L. Polk & Co.
	LADAGE JOHN AGT H	R. L. Polk & Co.
	LADAGE WM STUDENT R	R. L. Polk & Co.

FINDINGS

Year	Uses	Source
1934	MCDONALD DANL CHAUF H	R. L. Polk & Co.
	MCDONALD DANL L CHAUF R	R. L. Polk & Co.
	MURRAY EVELYN H CLK R	R. L. Polk & Co.
	MURRAY FLORENCE CLK R	R. L. Polk & Co.
	MURRAY MARGT T TEL OPR R	R. L. Polk & Co.
	POWERS HENRY FCTYWKR H	R. L. Polk & Co.
	SMITH ALBERT D PAPER CTR H	R. L. Polk & Co.
	SMITH LOUIS FCTYWKR R	R. L. Polk & Co.
	H STUDENT R	R. L. Polk & Co.
1928	SCHEUFEL CLARA MRS R	New York Telephone

12 SARATOGA AVE

Year	Uses	Source
2005	Fremla Castillo	Hill-Donnelly Corporation
1973	Broadway Beautv Fixt & Eqiiip	New York Telephone
	Bway Svce	New York Telephone
1970	Bway Car Svce	New York Telephone
	Broadway Candy Store	New York Telephone
1965	Bway Car Svce	New York Telephone
	BWAY BEAUTY FIXTS & EQP	New York Telephone

13 SARATOGA AVE

Year	Uses	Source
1934	FISHER FRANK L FRUIT H DO	R. L. Polk & Co.

14 SARATOGA AVE

Year	Uses	Source
2005	Top Cats Barbershop	Hill-Donnelly Corporation
1997	Top Cats Barber Shop	NYNEX
1973	Johnsons Beauty Salon	New York Telephone
1970	Johnsons Beauty Salon	New York Telephone
1965	Johnsons Beauty Salon	New York Telephone
1960	Lytle Esther bty plr	New York Telephone Company

1O SARATOGA AVE

Year	Uses	Source
1934	J IRONWKR H	R. L. Polk & Co.

FINDINGS

SARTGA AVE

5 SARTGA AVE

Year	Uses	Source
1960	GRECO ANTHONY G RL EST	New York Telephone
	GRECO ANTHONY G LWYR	New York Telephone

8 SARTGA AVE

Year	Uses	Source
1992	OUTLAWS ATHELIC CLUB	NYNEX Informantion Resource Co.
1985	JUKE S LOUNGE	NYNEX Information Resources Company
1960	RAY S BAR & GRILL	New York Telephone

10 SARTGA AVE

Year	Uses	Source
1992	HARRIS LEON	NYNEX Informantion Resource Co.
1985	PICKERING M	NYNEX Information Resources Company
	DECNY ANNABELLE	NYNEX Information Resources Company
1980	WALLACE MAVIS	New York Telephone
1976	BENNETT M G	New York Telephone
	BENNETT M G	New York Telephone
	HACKETT DORIS	New York Telephone
	KENNY HENRY	New York Telephone
	LODGE I	New York Telephone
	VARIETY CANDY STORE	New York Telephone
	PATTERSON KENNETH	New York Telephone
1960	DEMMERLE WALTER	New York Telephone
	FELDMAN HARRY	New York Telephone
	FRECENTESE WM	New York Telephone
	LEADING PLUMBING & HEATING CORP	New York Telephone
	SCHULTZ JOHN	New York Telephone
	ZITO ELIZ	New York Telephone

12 SARTGA AVE

Year	Uses	Source
1985	BWAY CAR SVCE	NYNEX Information Resources Company
1980	DIAMOND AUTO GLASS CORP	New York Telephone
1976	BWAY CAR SVCE	New York Telephone

FINDINGS

14 SARTGA AVE

Year	*Uses*	*Source*
1992	STICKY BOY VIDEO	NYNEX Informantion Resource Co.
1985	JOHNSON DAVID B	NYNEX Information Resources Company
1976	JOHNSON S BEAUTY SALON	New York Telephone
1960	LYTLE ESTHER BTY PLR	New York Telephone

SARTGA CIR

4 SARTGA CIR

Year	*Uses*	*Source*
1965	Sacks Melvin	New York Telephone
1949	Sacks Melvin	New York Telephone Company

SARTGA CTR

4 SARTGA CTR

Year	*Uses*	*Source*
1960	Sacks Melvin	New York Telephone Company
	SACKS MELVIN	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
7 Saratoga Avenue and 1510-1524 Broadway	2013, 2008, 2005, 2000, 1992, 1985, 1980

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 SARATOGA AVE	2013, 2008, 1992, 1985, 1980, 1976
10 SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
1005 JEFRERSON AVE	2013, 2008, 2005, 2000, 1997, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
1012 JEFFERSON AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934
1015 JEFRERSON AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
1021 JEFFERSON AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
12 SARATOGA AVE	2013, 2008, 2000, 1997, 1992, 1985, 1980, 1976, 1960, 1949, 1945, 1940, 1934, 1928
12 SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
13 SARATOGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
14 E SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
14 SARATOGA AVE	2013, 2008, 2000, 1992, 1985, 1980, 1976, 1949, 1945, 1940, 1934, 1928
14 SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1980, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
1500 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1945, 1940, 1934
1504 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1945, 1940, 1934
1506 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1945, 1940
1507 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973
1507 BROADWAY	2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
1508 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973

FINDINGS

Address Researched	Address Not Identified in Research Source
1511 BROADWAY	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
1O SARATOGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
3 SARATOGA AV	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
4 SARTGA CIR	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1960, 1945, 1940, 1934, 1928
4 SARTGA CTR	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
5 SARATOGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1945, 1928
5 SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
8 SARATOGA AVE	2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
8 SARATOGA AVE	2013, 2008, 2000, 1992, 1985, 1980, 1976, 1928
8 SARTGA AVE	2013, 2008, 2005, 2000, 1997, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
9 SARATOGA AVE	2013, 2008, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1945, 1940, 1934, 1928

APPENDIX D
REGULATORY RECORDS REVIEW

TOXICS TARGETING

Phase I
Environmental Database Report

MWBE Site C
Brooklyn, NY 11233

January 03, 2017

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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..... **1**

- *The Three Sections of Your Report*
- *How to Use Your Report*
- *Toxic Site Databases Analyzed In Your Report*
- *Limitations Of the Information In Your Report*

Section One: Your Report Summary..... **7**

- *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*

Section Two: Toxic Site Profiles

Section Three: Appendices

- *USEPA ERNS Check*
- *Unmappable Sites*
- *Hazardous Waste Codes*
- *Information Source Guide*

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 

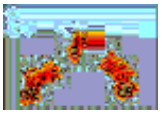
4) ***New York Inactive Hazardous Waste Disposal Site Registry Qualifying****:* a state listing of sites that qualify for possible inclusion to the NYS DEC Inactive Haz. Waste Disposal Site Registry.

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	1	1
NYS Inactive Hazardous Waste Disposal Site Registry	0	0	0	1	1	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	1	Not searched	1
Environmental Restoration Program	0	0	0	0	Not searched	0
Brownfield Cleanup Program	0	0	0	1	Not searched	1
NYC Voluntary Cleanup Program	0	0	0	3	Not searched	3
NYSDEC Solid Waste Facilities / Landfills	0	0	0	0	Not searched	0
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	0	0	Not searched	0
Active Spills − Unknown / Other Causes	0	0	0	1	Not searched	1
Active Spills − Miscellaneous Causes	0	0	0	1(1)	Not searched	1(1)
Closed Tank Failures	0	0	4	10	Not searched	14
Closed Tank Test Failures	0	1	2	6	Not searched	9
Closed Spills − Unknown / Other Causes	0	5	14	52	Not searched	71
Closed Spills − Miscellaneous Causes	0	5	1(15)	10(72)	Not searched	16(87)
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	4	Not searched	Not searched	Not searched	4
RCRA Hazardous Waste Generators & Transporters	0	50	Not searched	Not searched	Not searched	50
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**	**65**	**21(15)**	**86(73)**	**2**	**174(88)**

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***	***65***	***21(15)***	***86(73)***	***2***	***174(88)***

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

MWBE Site C
Brooklyn, NY 11233

* 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
132	CON EDISON	1041 JEFFERSON AVE	357 feet to the N	Hazardous Waste Generator/Transporter
159	CON EDISON	40 CORNELIA ST	600 feet to the N	Hazardous Waste Generator/Transporter
127	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
128	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
129	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
152	CON EDISON	FRONT OF 1066 JEFFERSON AV	540 feet to the NNE	Hazardous Waste Generator/Transporter
137	CON EDISON	999 HANCOCK AVE	409 feet to the NE	Hazardous Waste Generator/Transporter
148	CON EDISON	1015 HANCOCK ST	533 feet to the NE	Hazardous Waste Generator/Transporter
158	CON EDISON	FO 1019 HANCOCK ST	585 feet to the NE	Hazardous Waste Generator/Transporter
169	CON EDISON	1216 BUSHWICK AV	647 feet to the NE	Hazardous Waste Generator/Transporter
136	CON EDISON	FO 996 HANCOCK ST	402 feet to the ENE	Hazardous Waste Generator/Transporter
156	CON EDISON	33 WEIRFIELD ST	564 feet to the ENE	Hazardous Waste Generator/Transporter
133	CON EDISON	1547 BROADWAY	382 feet to the E	Hazardous Waste Generator/Transporter
123	HENRYS HARDWARE	1547 BROADWAY	383 feet to the E	Petroleum Bulk Storage Site
145	CON EDISON	17 WEIRFIELD ST	449 feet to the E	Hazardous Waste Generator/Transporter
163	CON EDISON	O/F 33 WEIRFIELD	617 feet to the E	Hazardous Waste Generator/Transporter
168	CONSOLIDATED EDISON	28 WEIRFIELD	637 feet to the E	Hazardous Waste Generator/Transporter
126	CONSOLIDATED EDISON	BROADWAY & HANCOCK ST	246 feet to the ESE	Hazardous Waste Generator/Transporter
139	NYNEX	BROADWAY & WEIRFIELD	435 feet to the ESE	Hazardous Waste Generator/Transporter
140	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD − MH 2327	435 feet to the ESE	Hazardous Waste Generator/Transporter
141	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD ST	435 feet to the ESE	Hazardous Waste Generator/Transporter
142	CON EDISON	SEC BROADWAY & WEIRFIELD ST	435 feet to the ESE	Hazardous Waste Generator/Transporter
149	SYK CLEANERS	1561 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter
150	S Y K CLEANERS INC	1561 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter
151	CON EDISON	1563 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter

170	NYNEX	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
171	CONSOLIDATED EDISON	MH2328−HALSEY ST & BROAWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
172	CON EDISON	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
173	CON ED	OPP 1573 BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
174	MTA NYCT − HALSEY ST STATION J−LINE	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
25	SARATOGA SQUARE APTS −NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Tank Test Failure
36	NYC HOUSING AUTHORITY − NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Spill (Unk/Other Cause)
107	SARATOGA SQUARE HOUSES −NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Spill (Misc. Spill Cause)
35	EXCAVATION	940 HANCOCK ST	230 feet to the SSE	Closed Status Spill (Unk/Other Cause)
122	SARATOGA VILLAGE (OCEAN HILL APTS)	940 HANCOCK STREET	243 feet to the SSE	Petroleum Bulk Storage Site
130	NYCHA − OCEAN HILL HOUSES	33−35 SARATOGA AVE	297 feet to the SSE	Hazardous Waste Generator/Transporter
161	CON EDISON	930 HALSEY AVENUE	606 feet to the SSE	Hazardous Waste Generator/Transporter
162	NYCHA − OCEAN HILL SARATOGA SQUARE	930 HALSEY ST	606 feet to the SSE	Hazardous Waste Generator/Transporter
134	CON EDISON	FO 912 HALSEY ST	383 feet to the S	Hazardous Waste Generator/Transporter
124	NYCHA TRIBOROUGH PRESERVATION	930 HALSEY STREET (AKA 55 SARATOGA AVENUE)	516 feet to the S	Petroleum Bulk Storage Site
155	CON EDISON	55 SARATOGA AVE	547 feet to the S	Hazardous Waste Generator/Transporter
138	CON EDISON	FRONT OF 869 HALSEY ST	422 feet to the SSW	Hazardous Waste Generator/Transporter
143	CON EDISON	48 SARATOGA AVE	440 feet to the SSW	Hazardous Waste Generator/Transporter
146	CON EDISON	FRONT O 865 HALSEY ST	450 feet to the SSW	Hazardous Waste Generator/Transporter
37	APARTMENT BLDG	839 HALSEY STREET	574 feet to the SW	Closed Status Spill (Unk/Other Cause)
38	839 HALSEY STREET	839 HALSEY STREET	574 feet to the SW	Closed Status Spill (Unk/Other Cause)
160	CON EDISON	F/O 841 HALSEY ST	601 feet to the SW	Hazardous Waste Generator/Transporter
135	CON EDISON	917 HANCOCK ST	384 feet to the WSW	Hazardous Waste Generator/Transporter
157	CON EDISON	899 HANCOCK ST	566 feet to the WSW	Hazardous Waste Generator/Transporter
165	CON EDISON	898 HANCOCK ST	622 feet to the WSW	Hazardous Waste Generator/Transporter
105	DRUM RUN	976 JEFFERSON AVE	312 feet to the W	Closed Status Spill (Misc. Spill Cause)
153	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W	Hazardous Waste Generator/Transporter
154	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W	Hazardous Waste Generator/Transporter
121	SING KIT WONG	10 SARATOGA AVE	186 feet to the WNW*	Petroleum Bulk Storage Site
166	CON EDISON	1064 PUTNAM AV	626 feet to the WNW	Hazardous Waste Generator/Transporter
167	CON EDISON	1064 PUTNAM AVE	626 feet to the WNW	Hazardous Waste Generator/Transporter
131	NYCTA − BROADWAY CORNALIA SUBSTATION	1482 BROADWAY	301 feet to the NW	Hazardous Waste Generator/Transporter
106	KINKED FUEL LINE IN BASEMENT OF HOME	1015 JEFFERSON AVE	327 feet to the NW	Closed Status Spill (Misc. Spill Cause)
34	JEFFERSON AVE. & BROADWAY	JEFFERSON AVE / BROADWAY	128 feet to the NNW*	Closed Status Spill (Unk/Other Cause)
125	CONSOLIDATED EDISON	MH37688−W BROADWAY & JEFFERSON	152 feet to the NNW*	Hazardous Waste Generator/Transporter
144	CON EDISON	FRONT OF 15 CORNELIA ST	449 feet to the NNW	Hazardous Waste Generator/Transporter
147	CON EDISON	1475 BROADWAY	471 feet to the NNW	Hazardous Waste Generator/Transporter
164	NYCDEP	1102 PUTNAM AVE	619 feet to the NNW	Hazardous Waste Generator/Transporter
108	ABANDONED APT. BUILDING	1102 PUTNAM AVE	626 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
109	PRIVATE RESD ABANDON	1102 PUTNAM AVE	626 feet to the NNW	Closed Status Spill (Misc. Spill Cause)

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
62	556 EVERGREEN AVE	556 EVERGREEN AVE	1502 feet to the N	Closed Status Spill (Unk/Other Cause)
19	491 EVERGREEN AVE/BKLYN	491 EVERGREEN AVENUE	1685 feet to the N	Closed Status Tank Failure
56	MANHOLE #2361	CONELIA ST & EVERGREEN AVE	1450 feet to the NNE	Closed Status Spill (Unk/Other Cause)
57	MANHOLE # 2361	EVERGREEN AV/CORNELOUS ST	1450 feet to the NNE	Closed Status Spill (Unk/Other Cause)
86	SPILL NUMBER 0101053	CENTRAL AVE/PUTNAM AVE	2166 feet to the NNE	Closed Status Spill (Unk/Other Cause)
40	MANHOLE TM569	HANCOCK CTR/BUSHWOOD AVE	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
41	MANHOLE 569	HANCOCK ST & BUSHWICK AV	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
42	MANHOLE #2340	BUSHWICK AVE & HANCOCK ST	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
43	TM 569	HANCOCK ST/BUSHWICK AV	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
44	TM569	HANCOCK STREET/BUSHWORK	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
26	1209 BUSHWICK AVE	1209 BUSHWICK AVE	854 feet to the NE	Closed Status Tank Test Failure
12	GREENPOINT SAVINGS BANK	1225 BUSHWICK AVE	887 feet to the NE	Closed Status Tank Failure
47	SERVICE BOX	71 WIERFELD ST	1004 feet to the NE	Closed Status Spill (Unk/Other Cause)
83	MANHOLE 2386	CENTRAL AVE/WEIERFIELD	2120 feet to the NE	Closed Status Spill (Unk/Other Cause)
84	MANHOLE 2386	WEIRFIELD ST/CENTRAL AVE	2120 feet to the NE	Closed Status Spill (Unk/Other Cause)
93	SERVICE BOX 20476	1167 HALSEY ST	2420 feet to the NE	Closed Status Spill (Unk/Other Cause)
80	PS296 SCHOOL	125 COVERT ST	2045 feet to the ENE	Closed Status Spill (Unk/Other Cause)
3	WOLFF−ALPORT CHEMICAL COMPANY	1127−1129 IRVING AVENUE	4695 feet to the ENE	NYSDEC Inactive Haz Waste Disposal Site
1	WOLFF−ALPORT CHEMICAL COMPANY	1125−1139 IRVING AVENUE	4746 feet to the ENE	National Priority List(NPL) Site
51	SPILL NUMBER 0104561	63 ELDERT ST	1230 feet to the E	Closed Status Spill (Unk/Other Cause)
15	SPILL NUMBER 9713231	1311−A BUSHWICK AVE	1420 feet to the E	Closed Status Tank Failure
69	SERVICE BOX 41972 IFO	63 SCHAEFER ST	1676 feet to the E	Closed Status Spill (Unk/Other Cause)
45	MANHOLE 63289	ELDERT ST/BROADWAY	949 feet to the ESE	Closed Status Spill (Unk/Other Cause)
60	SB 41971	35 SCHAFFER ST	1486 feet to the ESE	Closed Status Spill (Unk/Other Cause)
78	MANHOLE # 112	BROADWAY & COPPER AVE	1995 feet to the ESE	Closed Status Spill (Unk/Other Cause)
82	30 COOPER ST	30 COOPER ST	2103 feet to the ESE	Closed Status Spill (Unk/Other Cause)
116	BASEMENT	1419 BUSHWICK AVE	2484 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
98	DRUM RUN	76 MOFFAT ST	2532 feet to the ESE	Closed Status Spill (Unk/Other Cause)
119	STOLEN VAN	76 MOFFAT ST	2532 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
102	SPILL NUMBER 0030010	1435 BUSHWICK AVE	2602 feet to the ESE	Closed Status Spill (Unk/Other Cause)
4	1674−1684 BROADWAY	1674−1684 BROADWAY	1550 feet to the SE	Brownfields Site
6	THE HENRY APARTMENTS	768 DECATUR STREET	1770 feet to the SE	Brownfields Site
79	561 CHAUNCEY STREET	561 CHAUNCEY STREET	2031 feet to the SE	Closed Status Spill (Unk/Other Cause)
21	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE	Closed Status Tank Failure
30	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE	Closed Status Tank Test Failure
112	DRUM RUN	25 ROCKAWAY AVE	2181 feet to the SE	Closed Status Spill (Misc. Spill Cause)
87	SERVICE BOX 1673	498 CHAUNCEY ST	2190 feet to the SE	Closed Status Spill (Unk/Other Cause)
54	RESIDENCE	702 DECATUR ST	1385 feet to the SSE	Closed Status Spill (Unk/Other Cause)
58	RESIDENTIAL BUILDING	555 BAINBRIDGE STREET	1466 feet to the SSE	Closed Status Spill (Unk/Other Cause)
74	RESIDENCE	333 MARION STREET	1921 feet to the SSE	Closed Status Spill (Unk/Other Cause)

91	WINQ RES	242 SUMPTER ST	2383 feet to the SSE	Closed Status Spill (Unk/Other Cause)
39	CON ED MANHOLE #65849	SOUTH SIDE MACON/SARATOGA	663 feet to the S	Closed Status Spill (Unk/Other Cause)
50	SARATOGA AVE & DECATUR ST	SARATOGA AVE & DECATUR ST	1198 feet to the S	Closed Status Spill (Unk/Other Cause)
71	MANHOLE 63913	CHAUNCEY ST/SARATGOA AVE	1736 feet to the S	Closed Status Spill (Unk/Other Cause)
95	NEW CONSTRUCTION	150 SUMPTER ST	2461 feet to the S	Closed Status Spill (Unk/Other Cause)
96	233 HOWARD AVENUE	233 HOWARD AVENUE	2499 feet to the S	Closed Status Spill (Unk/Other Cause)
117	SPILL NUMBER 0105366	233 HOWARD AVENUE	2499 feet to the S	Closed Status Spill (Misc. Spill Cause)
99	VACANT LOT NEXT TO HER	83 MACDOUGAL ST	2565 feet to the S	Closed Status Spill (Unk/Other Cause)
103	NEXT TO 85 MACDOUGAL ST	BY HOWARD AVE & MACDOUGAL	2623 feet to the S	Closed Status Spill (Unk/Other Cause)
104	77 MACDOUGAL ST	77 MACDOUGAL ST	2626 feet to the S	Closed Status Spill (Unk/Other Cause)
14	615 DECATUR ST	615 DECATUR ST	1202 feet to the SSW	Closed Status Tank Failure
61	MANHOLE 695	DECATUR ST/HOWARD AVE	1490 feet to the SSW	Closed Status Spill (Unk/Other Cause)
67	IN FRONT OF	429 BAINE BRIDGE STREET	1652 feet to the SSW	Closed Status Spill (Unk/Other Cause)
68	IN FRONT OF	434 BAINE BRIDGE STREET	1665 feet to the SSW	Closed Status Spill (Unk/Other Cause)
70	SERVICE BOX 14548	411−413 BAINBRIDGE ST	1718 feet to the SSW	Closed Status Spill (Unk/Other Cause)
72	SERVICE BOX 15457	416 BAINBRIDGE ST	1846 feet to the SSW	Closed Status Spill (Unk/Other Cause)
75	SERVICE BOX 16718	334 CHAUNCEY ST	1949 feet to the SSW	Closed Status Spill (Unk/Other Cause)
77	SEVICE BOX 16709	347 CHAUNCY ST	1989 feet to the SSW	Closed Status Spill (Unk/Other Cause)
89	SPILL NUMBER 9808332	229−233 MARION ST	2211 feet to the SSW	Closed Status Spill (Unk/Other Cause)
97	PS # 040	265 RALPH AVE	2500 feet to the SSW	Closed Status Spill (Unk/Other Cause)
48	MANHOLE #28722	MACON ST & HOWARD	1107 feet to the SW	Closed Status Spill (Unk/Other Cause)
110	765 MACON ST	765 MACON ST	1209 feet to the SW	Closed Status Spill (Misc. Spill Cause)
52	SERVICE BOX #28718	755 MACON ST	1289 feet to the SW	Closed Status Spill (Unk/Other Cause)
53	SERVICE BOX #28721	738 MACON ST	1368 feet to the SW	Closed Status Spill (Unk/Other Cause)
63	CAR LEAK	615 MACDOUGH ST	1512 feet to the SW	Closed Status Spill (Unk/Other Cause)
18	BACKYARD OF HOUSE	632 MACDONOWGH STREET	1534 feet to the SW	Closed Status Tank Failure
111	183 RALPH AVE	183 RALPH AVE	1793 feet to the SW	Closed Status Spill (Misc. Spill Cause)
7	192 RALPH AVENUE	192 RALPH AVE	1957 feet to the SW	Brownfields Site
2	192 RALPH AVENUE	192 RALPH AVE	1958 feet to the SW	NYSDEC Inactive Haz Waste Disposal Site
76	BASEMENT	371 BAINBRIDGE ST	1977 feet to the SW	Closed Status Spill (Unk/Other Cause)
113	358 BAYBRIDGE ST	358 BAYBRIDGE ST	2217 feet to the SW	Closed Status Spill (Misc. Spill Cause)
115	TANK FAILURE AND POSSIBLE RELEASE TO SOIL	477 DECATUR STREET	2340 feet to the SW	Closed Status Spill (Misc. Spill Cause)
92	SB32349	RALPH AVE AND CHAUNCEY ST	2387 feet to the SW	Closed Status Spill (Unk/Other Cause)
20	742 HALSEY ST.	742 HALSEY ST	2026 feet to the WSW	Closed Status Tank Failure
85	SERVICE BOX 20343	732 HALSEY ST	2126 feet to the WSW	Closed Status Spill (Unk/Other Cause)
13	1016 PUTNAM AVENUE	1016 PUTNAM AVENUE	1133 feet to the W	Closed Status Tank Failure
65	AP MART	951 PUTNUM AVE	1633 feet to the W	Closed Status Spill (Unk/Other Cause)
73	SERVICE BOX 21468	861 JEFFERSON AVE	1877 feet to the W	Closed Status Spill (Unk/Other Cause)
22	743 HANCOCK STREET	743 HANCOCK STREET	2235 feet to the W	Closed Status Tank Failure
101	SERVICE BOX 31332	129 PATCHEN AVE	2582 feet to the W	Closed Status Spill (Unk/Other Cause)
27	41 HOWARD AV / BKLN	41 HOWARD AVE	883 feet to the WNW	Closed Status Tank Test Failure
46	VS 4630	HOWARD AV & PUTNAM AV	993 feet to the WNW	Closed Status Spill (Unk/Other Cause)
55	854 MONROE STREET	854 MONROE STREET	1415 feet to the WNW	Closed Status Spill (Unk/Other Cause)
10	FORMER SERVICE STATION −MTBE	79 RALPH AVE	1672 feet to the WNW	Active Haz Spill (Misc. Spill Cause)
5	1024 GATES AVENUE	1024 GATES AVENUE	1675 feet to the WNW	Brownfields Site
81	MANHOLE # 32303	SE CORNER OF GATES AVE /	2055 feet to the WNW	Closed Status Spill (Unk/Other Cause)
23	NYPD 81ST PCT	18 RALPH AVE	2245 feet to the WNW	Closed Status Tank Failure

32	32 RALPH AV − BKLN	32 RALPH AVENUE	2245 feet to the WNW	Closed Status Tank Test Failure
90	ABANDONED BLDG	966 GATES AVE	2282 feet to the WNW	Closed Status Spill (Unk/Other Cause)
114	ABANDONED BUILDING	964 GATES AVE	2299 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
33	APARTMENT BLDG.	940−950 GATES AVE	2582 feet to the WNW	Closed Status Tank Test Failure
9	COMMERCIAL WAREHOUSE	834 LEXINGTON AVE	2618 feet to the WNW	Active Haz Spill (Unknown/Other Cause)
8	FORMER MOTOR FREIGHT GARAGE	834 LEXINGTON AVENUE	2621 feet to the WNW	Brownfields Site
17	17 PALMETTO ST	17 PALMETTO ST	1506 feet to the NW	Closed Status Tank Failure
64	SPILL NUMBER 0402541	1369 BROADWAY	1559 feet to the NW	Closed Status Spill (Unk/Other Cause)
66	TRANSFORMER VAULT 715	1038 GATE AVE	1647 feet to the NW	Closed Status Spill (Unk/Other Cause)
31	TANK ROOM − ENCLOSED TTF	40 GROVE ST	2194 feet to the NW	Closed Status Tank Test Failure
88	MH 63919	GROVE ST/ BROADWAY	2205 feet to the NW	Closed Status Spill (Unk/Other Cause)
94	MANHOLE #DS2884	RALPH AVE/LEXINGTON AVE	2429 feet to the NW	Closed Status Spill (Unk/Other Cause)
11	RESIDENCE	1097 PUTNAM AVE	750 feet to the NNW	Closed Status Tank Failure
49	SB #53417	32A WOODBINE ST	1171 feet to the NNW	Closed Status Spill (Unk/Other Cause)
16	1084 BUSHWICK	1084 BUSHWICK AVE	1446 feet to the NNW	Closed Status Tank Failure
59	SPILL NUMBER 0104030	1080 BUSHWICK AVE	1477 feet to the NNW	Closed Status Spill (Unk/Other Cause)
28	1070 BRUNSWICK AVE/NY TEL	1070 BRUNSWICK AVE	1621 feet to the NNW	Closed Status Tank Test Failure
29	PALMETTO	85 PALMETTO STREET	1888 feet to the NNW	Closed Status Tank Test Failure
118	73 GROVE ST/BKLYN	73 GROVE STREET	2504 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
100	MENAHAN APT LLC	20 MENAHAN ST	2575 feet to the NNW	Closed Status Spill (Unk/Other Cause)
24	119 LINDEN STREET	119 LINDEN STREET	2577 feet to the NNW	Closed Status Tank Failure
120	119 LINDEN STREET/BKLYN	119 LINDEN STREET	2577 feet to the NNW	Closed Status Spill (Misc. Spill Cause)

Identified Toxic Sites by Category

MWBE Site C
Brooklyn, NY 11233

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

National Priority List (NPL) Sites −− Total Sites − 1

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

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
1	NYC200400810	WOLFF−ALPORT CHEMICAL COMPANY	1125−1139 IRVING AVENUE	4746 feet to the ENE

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
2	224042	192 RALPH AVENUE	192 RALPH AVE	1958 feet to the SW
3	241180	WOLFF−ALPORT CHEMICAL COMPANY	1127−1129 IRVING AVENUE	4695 feet to the ENE

Brownfields Sites −− Total Sites − 5

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

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
4	15CVCP148K	1674−1684 BROADWAY	1674−1684 BROADWAY	1550 feet to the SE
5	13CVCP117K	1024 GATES AVENUE	1024 GATES AVENUE	1675 feet to the WNW
6	15CVCP120K	THE HENRY APARTMENTS	768 DECATUR STREET	1770 feet to the SE
7	V00669	192 RALPH AVENUE	192 RALPH AVE	1957 feet to the SW
8	C224202	FORMER MOTOR FREIGHT GARAGE	834 LEXINGTON AVENUE	2621 feet to the WNW

Active Haz Spills (Unknown Causes & Other Causes) −− 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
9	1408617	COMMERCIAL WAREHOUSE	834 LEXINGTON AVE	2618 feet to the WNW

Active Haz Spills (Miscellaneous Spill Causes) −− 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
10	9805815	FORMER SERVICE STATION −MTBE	79 RALPH AVE	1672 feet to the WNW

Closed Status Tank Failures −− Total Sites − 14

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

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
11	0511584	RESIDENCE	1097 PUTNAM AVE	750 feet to the NNW
12	9711700	GREENPOINT SAVINGS BANK	1225 BUSHWICK AVE	887 feet to the NE
13	9412373	1016 PUTNAM AVENUE	1016 PUTNAM AVENUE	1133 feet to the W
14	0006043	615 DECATUR ST	615 DECATUR ST	1202 feet to the SSW
15	9713231	SPILL NUMBER 9713231	1311−A BUSHWICK AVE	1420 feet to the E
16	9208672	1084 BUSHWICK	1084 BUSHWICK AVE	1446 feet to the NNW
17	9512329	17 PALMETTO ST	17 PALMETTO ST	1506 feet to the NW
18	0604106	BACKYARD OF HOUSE	632 MACDONOWGH STREET	1534 feet to the SW
19	8906844	491 EVERGREEN AVE/BKLYN	491 EVERGREEN AVENUE	1685 feet to the N
20	9401949	742 HALSEY ST.	742 HALSEY ST	2026 feet to the WSW
21	9709795	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE
22	9207660	743 HANCOCK STREET	743 HANCOCK STREET	2235 feet to the W
23	9513317	NYPD 81ST PCT	18 RALPH AVE	2245 feet to the WNW
24	8909454	119 LINDEN STREET	119 LINDEN STREET	2577 feet to the NNW

Closed Status Tank Test Failures −− Total Sites − 9

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

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
25	9801627	SARATOGA SQUARE APTS −NYCHA	930 HALSEY ST	543 feet to the SE
26	9913509	1209 BUSHWICK AVE	1209 BUSHWICK AVE	854 feet to the NE
27	8909247	41 HOWARD AV / BKLN	41 HOWARD AVE	883 feet to the WNW
28	9110108	1070 BRUNSWICK AVE/NY TEL	1070 BRUNSWICK AVE	1621 feet to the NNW

29	9102098	PALMETTO	85 PALMETTO STREET	1888 feet to the NNW
30	0102559	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE
31	0905563	TANK ROOM − ENCLOSED TTF	40 GROVE ST	2194 feet to the NW
32	8910005	32 RALPH AV − BKLN	32 RALPH AVENUE	2245 feet to the WNW
33	0400812	APARTMENT BLDG.	940−950 GATES AVE	2582 feet to the WNW

Closed Status Spills (Unknown Causes & Other Causes) −− Total Sites − 71 **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
34	8702940	JEFFERSON AVE. & BROADWAY	JEFFERSON AVE / BROADWAY	128 feet to the NNW*
35	1500493	EXCAVATION	940 HANCOCK ST	230 feet to the SSE
36	0004890	NYC HOUSING AUTHORITY − NYCHA	930 HALSEY ST	543 feet to the SE
37	9514531	APARTMENT BLDG	839 HALSEY STREET	574 feet to the SW
38	9514530	839 HALSEY STREET	839 HALSEY STREET	574 feet to the SW
39	0400614	CON ED MANHOLE #65849	SOUTH SIDE MACON/SARATOGA	663 feet to the S
40	9901327	MANHOLE TM569	HANCOCK CTR/BUSHWOOD AVE	754 feet to the NE
41	9810073	MANHOLE 569	HANCOCK ST & BUSHWICK AV	754 feet to the NE
42	0005303	MANHOLE #2340	BUSHWICK AVE & HANCOCK ST	754 feet to the NE
43	0005298	TM 569	HANCOCK ST/BUSHWICK AV	754 feet to the NE
44	0003751	TM569	HANCOCK STREET/BUSHWORK	754 feet to the NE
45	9909985	MANHOLE 63289	ELDERT ST/BROADWAY	949 feet to the ESE
46	0413211	VS 4630	HOWARD AV & PUTNAM AV	993 feet to the WNW
47	0001063	SERVICE BOX	71 WIERFELD ST	1004 feet to the NE
48	9812674	MANHOLE #28722	MACON ST & HOWARD	1107 feet to the SW
49	0001472	SB #53417	32A WOODBINE ST	1171 feet to the NNW
50	9309456	SARATOGA AVE & DECATUR ST	SARATOGA AVE & DECATUR ST	1198 feet to the S
51	0104561	SPILL NUMBER 0104561	63 ELDERT ST	1230 feet to the E
52	0501479	SERVICE BOX #28718	755 MACON ST	1289 feet to the SW
53	0501478	SERVICE BOX #28721	738 MACON ST	1368 feet to the SW
54	0411465	RESIDENCE	702 DECATUR ST	1385 feet to the SSE
55	9503168	854 MONROE STREET	854 MONROE STREET	1415 feet to the WNW
56	0008001	MANHOLE #2361	CONELIA ST & EVERGREEN AVE	1450 feet to the NNE
57	0007334	MANHOLE # 2361	EVERGREEN AV/CORNELOUS ST	1450 feet to the NNE
58	0411790	RESIDENTIAL BUILDING	555 BAINBRIDGE STREET	1466 feet to the SSE
59	0104030	SPILL NUMBER 0104030	1080 BUSHWICK AVE	1477 feet to the NNW
60	0008616	SB 41971	35 SCHAFFER ST	1486 feet to the ESE
61	9814887	MANHOLE 695	DECATUR ST/HOWARD AVE	1490 feet to the SSW
62	9601214	556 EVERGREEN AVE	556 EVERGREEN AVE	1502 feet to the N
63	0407975	CAR LEAK	615 MACDOUGH ST	1512 feet to the SW
64	0402541	SPILL NUMBER 0402541	1369 BROADWAY	1559 feet to the NW
65	0611079	AP MART	951 PUTNUM AVE	1633 feet to the W
66	0503939	TRANSFORMER VAULT 715	1038 GATE AVE	1647 feet to the NW
67	1312168	IN FRONT OF	429 BAINE BRIDGE STREET	1652 feet to the SSW
68	1312167	IN FRONT OF	434 BAINE BRIDGE STREET	1665 feet to the SSW
69	9810334	SERVICE BOX 41972 IFO	63 SCHAEFER ST	1676 feet to the E
70	9903141	SERVICE BOX 14548	411−413 BAINBRIDGE ST	1718 feet to the SSW
71	9813679	MANHOLE 63913	CHAUNCEY ST/SARATGOA AVE	1736 feet to the S
72	9903145	SERVICE BOX 15457	416 BAINBRIDGE ST	1846 feet to the SSW
73	9812957	SERVICE BOX 21468	861 JEFFERSON AVE	1877 feet to the W
74	0008216	RESIDENCE	333 MARION STREET	1921 feet to the SSE
75	9813780	SERVICE BOX 16718	334 CHAUNCEY ST	1949 feet to the SSW
76	0612263	BASEMENT	371 BAINBRIDGE ST	1977 feet to the SW
77	0000947	SEVICE BOX 16709	347 CHAUNCY ST	1989 feet to the SSW
78	0004677	MANHOLE # 112	BROADWAY & COPPER AVE	1995 feet to the ESE

79	9513028	561 CHAUNCEY STREET	561 CHAUNCEY STREET	2031 feet to the SE
80	9810352	PS296 SCHOOL	125 COVERT ST	2045 feet to the ENE
81	0410019	MANHOLE # 32303	SE CORNER OF GATES AVE /	2055 feet to the WNW
82	0006985	30 COOPER ST	30 COOPER ST	2103 feet to the ESE
83	0501596	MANHOLE 2386	CENTRAL AVE/WEIERFIELD	2120 feet to the NE
84	0004587	MANHOLE 2386	WEIRFIELD ST/CENTRAL AVE	2120 feet to the NE
85	9911681	SERVICE BOX 20343	732 HALSEY ST	2126 feet to the WSW
86	0101053	SPILL NUMBER 0101053	CENTRAL AVE/PUTNAM AVE	2166 feet to the NNE
87	0502165	SERVICE BOX 1673	498 CHAUNCEY ST	2190 feet to the SE
88	0103937	MH 63919	GROVE ST/ BROADWAY	2205 feet to the NW
89	9808332	SPILL NUMBER 9808332	229−233 MARION ST	2211 feet to the SSW
90	9614376	ABANDONED BLDG	966 GATES AVE	2282 feet to the WNW
91	9812474	WINQ RES	242 SUMPTER ST	2383 feet to the SSE
92	1408896	SB32349	RALPH AVE AND CHAUNCEY ST	2387 feet to the SW
93	9811536	SERVICE BOX 20476	1167 HALSEY ST	2420 feet to the NE
94	0503913	MANHOLE #DS2884	RALPH AVE/LEXINGTON AVE	2429 feet to the NW
95	9712516	NEW CONSTRUCTION	150 SUMPTER ST	2461 feet to the S
96	9401030	233 HOWARD AVENUE	233 HOWARD AVENUE	2499 feet to the S
97	0607553	PS # 040	265 RALPH AVE	2500 feet to the SSW
98	0713502	DRUM RUN	76 MOFFAT ST	2532 feet to the ESE
99	9515842	VACANT LOT NEXT TO HER	83 MACDOUGAL ST	2565 feet to the S
100	1308386	MENAHAN APT LLC	20 MENAHAN ST	2575 feet to the NNW
101	0208654	SERVICE BOX 31332	129 PATCHEN AVE	2582 feet to the W
102	0030010	SPILL NUMBER 0030010	1435 BUSHWICK AVE	2602 feet to the ESE
103	9708059	NEXT TO 85 MACDOUGAL ST	BY HOWARD AVE & MACDOUGAL	2623 feet to the S
104	9707862	77 MACDOUGAL ST	77 MACDOUGAL ST	2626 feet to the S

Closed Status Spills (Miscellaneous Spill Causes) −− Total Sites − 16 **Database searched at 1/2 MILE − ASTM required search distance: 1/2 Mile**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
105	1104918	DRUM RUN	976 JEFFERSON AVE	312 feet to the W
106	0507099	KINKED FUEL LINE IN BASEMENT OF HOME	1015 JEFFERSON AVE	327 feet to the NW
107	9913865	SARATOGA SQUARE HOUSES −NYCHA	930 HALSEY ST	543 feet to the SE
108	1200165	ABANDONED APT. BUILDING	1102 PUTNAM AVE	626 feet to the NNW
109	1200163	PRIVATE RESD ABANDON	1102 PUTNAM AVE	626 feet to the NNW
110	0810922	765 MACON ST	765 MACON ST	1209 feet to the SW
111	8909471	183 RALPH AVE	183 RALPH AVE	1793 feet to the SW
112	1002698	DRUM RUN	25 ROCKAWAY AVE	2181 feet to the SE
113	9514547	358 BAYBRIDGE ST	358 BAYBRIDGE ST	2217 feet to the SW
114	9614384	ABANDONED BUILDING	964 GATES AVE	2299 feet to the WNW
115	1205633	TANK FAILURE AND POSSIBLE RELEASE TO SOIL	477 DECATUR STREET	2340 feet to the SW
116	0612742	BASEMENT	1419 BUSHWICK AVE	2484 feet to the ESE
117	0105366	SPILL NUMBER 0105366	233 HOWARD AVENUE	2499 feet to the S
118	9102458	73 GROVE ST/BKLYN	73 GROVE STREET	2504 feet to the NNW
119	0713341	STOLEN VAN	76 MOFFAT ST	2532 feet to the ESE
120	8809175	119 LINDEN STREET/BKLYN	119 LINDEN STREET	2577 feet to the NNW

Petroleum Bulk Storage Sites −− Total Sites − 4 **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
121	NY09086	SING KIT WONG	10 SARATOGA AVE	186 feet to the WNW*
122	2−474258	SARATOGA VILLAGE (OCEAN HILL APTS)	940 HANCOCK STREET	243 feet to the SSE
123	NY04722	HENRYS HARDWARE	1547 BROADWAY	383 feet to the E
124	2−474266	NYCHA TRIBOROUGH PRESERVATION	930 HALSEY STREET (AKA 55 SARATOGA AVENUE)	516 feet to the S

Hazardous Waste Generators, Transporters −− Total Sites − 50 | **Database searched at 1/8 MILE − ASTM required search distance: Property & Adjacent**

MAP ID	FACILITY ID	FACILITY NAME	FACILITY STREET	DISTANCE & DIRECTION
125	NYP004060885	CONSOLIDATED EDISON	MH37688−W BROADWAY & JEFFERSON	152 feet to the NNW*
126	NYP004185443	CONSOLIDATED EDISON	BROADWAY & HANCOCK ST	246 feet to the ESE
127	NYP004613824	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE
128	NYP004663886	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE
129	NYP004668851	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE
130	NYR000075663	NYCHA − OCEAN HILL HOUSES	33−35 SARATOGA AVE	297 feet to the SSE
131	NY0000228999	NYCTA − BROADWAY CORNALIA SUBSTATION	1482 BROADWAY	301 feet to the NW
132	NYP004808079	CON EDISON	1041 JEFFERSON AVE	357 feet to the N
133	NYP004413181	CON EDISON	1547 BROADWAY	382 feet to the E
134	NYP004589594	CON EDISON	FO 912 HALSEY ST	383 feet to the S
135	NYP004473575	CON EDISON	917 HANCOCK ST	384 feet to the WSW
136	NYP004558847	CON EDISON	FO 996 HANCOCK ST	402 feet to the ENE
137	NYP004496311	CON EDISON	999 HANCOCK AVE	409 feet to the NE
138	NYP004476834	CON EDISON	FRONT OF 869 HALSEY ST	422 feet to the SSW
139	NYP000912832	NYNEX	BROADWAY & WEIRFIELD	435 feet to the ESE
140	NYP004185450	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD − MH 2327	435 feet to the ESE
141	NYP004185492	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD ST	435 feet to the ESE
142	NYP004552915	CON EDISON	SEC BROADWAY & WEIRFIELD ST	435 feet to the ESE
143	NYP004824054	CON EDISON	48 SARATOGA AVE	440 feet to the SSW
144	NYP004734133	CON EDISON	FRONT OF 15 CORNELIA ST	449 feet to the NNW
145	NYP004308219	CON EDISON	17 WEIRFIELD ST	449 feet to the E
146	NYP004734141	CON EDISON	FRONT O 865 HALSEY ST	450 feet to the SSW
147	NYP004750402	CON EDISON	1475 BROADWAY	471 feet to the NNW
148	NYP004499620	CON EDISON	1015 HANCOCK ST	533 feet to the NE
149	NYD986283364	SYK CLEANERS	1561 BROADWAY	534 feet to the ESE
150	NYD986928364	S Y K CLEANERS INC	1561 BROADWAY	534 feet to the ESE
151	NYP004552923	CON EDISON	1563 BROADWAY	534 feet to the ESE
152	NYP004522801	CON EDISON	FRONT OF 1066 JEFFERSON AV	540 feet to the NNE
153	NYP004557773	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W
154	NYP004588075	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W
155	NYP004788642	CON EDISON	55 SARATOGA AVE	547 feet to the S
156	NYP004409371	CON EDISON	33 WEIRFIELD ST	564 feet to the ENE
157	NYP004473534	CON EDISON	899 HANCOCK ST	566 feet to the WSW
158	NYP004585543	CON EDISON	FO 1019 HANCOCK ST	585 feet to the NE
159	NYP004829440	CON EDISON	40 CORNELIA ST	600 feet to the N
160	NYP004720249	CON EDISON	F/O 841 HALSEY ST	601 feet to the SW
161	NYP004519906	CON EDISON	930 HALSEY AVENUE	606 feet to the SSE
162	NYR000052803	NYCHA − OCEAN HILL SARATOGA SQUARE	930 HALSEY ST	606 feet to the SSE
163	NYP004379988	CON EDISON	O/F 33 WEIRFIELD	617 feet to the E
164	NYP003665387	NYCDEP	1102 PUTNAM AVE	619 feet to the NNW
165	NYP004596391	CON EDISON	898 HANCOCK ST	622 feet to the WSW
166	NYP004519690	CON EDISON	1064 PUTNAM AV	626 feet to the WNW
167	NYP004534343	CON EDISON	1064 PUTNAM AVE	626 feet to the WNW
168	NYP004380002	CONSOLIDATED EDISON	28 WEIRFIELD	637 feet to the E
169	NYP004713475	CON EDISON	1216 BUSHWICK AV	647 feet to the NE
170	NYP000912261	NYNEX	HALSEY ST & BROADWAY	651 feet to the ESE
171	NYP004085635	CONSOLIDATED EDISON	MH2328−HALSEY ST & BROAWAY	651 feet to the ESE
172	NYP004834186	CON EDISON	HALSEY ST & BROADWAY	651 feet to the ESE
173	NYP004843906	CON ED	OPP 1573 BROADWAY	651 feet to the ESE
174	NYR000082107	MTA NYCT − HALSEY ST STATION J−LINE	HALSEY ST & BROADWAY	651 feet to the ESE

Identified Toxic Sites by Proximity

MWBE Site C, Brooklyn, NY 11233

* 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
34	JEFFERSON AVE. & BROADWAY	JEFFERSON AVE / BROADWAY	128 feet to the NNW*	Closed Status Spill (Unk/Other Cause)
125	CONSOLIDATED EDISON	MH37688−W BROADWAY & JEFFERSON	152 feet to the NNW*	Hazardous Waste Generator/Transporter
121	SING KIT WONG	10 SARATOGA AVE	186 feet to the WNW*	Petroleum Bulk Storage Site
35	EXCAVATION	940 HANCOCK ST	230 feet to the SSE	Closed Status Spill (Unk/Other Cause)
122	SARATOGA VILLAGE (OCEAN HILL APTS)	940 HANCOCK STREET	243 feet to the SSE	Petroleum Bulk Storage Site
126	CONSOLIDATED EDISON	BROADWAY & HANCOCK ST	246 feet to the ESE	Hazardous Waste Generator/Transporter
127	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
128	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
129	CON EDISON	1038 JEFFERSON AVE	270 feet to the NNE	Hazardous Waste Generator/Transporter
130	NYCHA − OCEAN HILL HOUSES	33−35 SARATOGA AVE	297 feet to the SSE	Hazardous Waste Generator/Transporter
131	NYCTA − BROADWAY CORNALIA SUBSTATION	1482 BROADWAY	301 feet to the NW	Hazardous Waste Generator/Transporter
105	DRUM RUN	976 JEFFERSON AVE	312 feet to the W	Closed Status Spill (Misc. Spill Cause)
106	KINKED FUEL LINE IN BASEMENT OF HOME	1015 JEFFERSON AVE	327 feet to the NW	Closed Status Spill (Misc. Spill Cause)
132	CON EDISON	1041 JEFFERSON AVE	357 feet to the N	Hazardous Waste Generator/Transporter
133	CON EDISON	1547 BROADWAY	382 feet to the E	Hazardous Waste Generator/Transporter
123	HENRYS HARDWARE	1547 BROADWAY	383 feet to the E	Petroleum Bulk Storage Site
134	CON EDISON	FO 912 HALSEY ST	383 feet to the S	Hazardous Waste Generator/Transporter
135	CON EDISON	917 HANCOCK ST	384 feet to the WSW	Hazardous Waste Generator/Transporter
136	CON EDISON	FO 996 HANCOCK ST	402 feet to the ENE	Hazardous Waste Generator/Transporter
137	CON EDISON	999 HANCOCK AVE	409 feet to the NE	Hazardous Waste Generator/Transporter
138	CON EDISON	FRONT OF 869 HALSEY ST	422 feet to the SSW	Hazardous Waste Generator/Transporter
139	NYNEX	BROADWAY & WEIRFIELD	435 feet to the ESE	Hazardous Waste Generator/Transporter
140	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD − MH 2327	435 feet to the ESE	Hazardous Waste Generator/Transporter
141	CONSOLIDATED EDISON	BROADWAY & WEIRFIELD ST	435 feet to the ESE	Hazardous Waste Generator/Transporter
142	CON EDISON	SEC BROADWAY & WEIRFIELD ST	435 feet to the ESE	Hazardous Waste Generator/Transporter
143	CON EDISON	48 SARATOGA AVE	440 feet to the SSW	Hazardous Waste Generator/Transporter
144	CON EDISON	FRONT OF 15 CORNELIA ST	449 feet to the NNW	Hazardous Waste Generator/Transporter
145	CON EDISON	17 WEIRFIELD ST	449 feet to the E	Hazardous Waste Generator/Transporter
146	CON EDISON	FRONT O 865 HALSEY ST	450 feet to the SSW	Hazardous Waste Generator/Transporter
147	CON EDISON	1475 BROADWAY	471 feet to the NNW	Hazardous Waste Generator/Transporter
124	NYCHA TRIBOROUGH PRESERVATION	930 HALSEY STREET (AKA 55 SARATOGA AVENUE)	516 feet to the S	Petroleum Bulk Storage Site
148	CON EDISON	1015 HANCOCK ST	533 feet to the NE	Hazardous Waste Generator/Transporter
149	SYK CLEANERS	1561 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter
150	S Y K CLEANERS INC	1561 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter
151	CON EDISON	1563 BROADWAY	534 feet to the ESE	Hazardous Waste Generator/Transporter
152	CON EDISON	FRONT OF 1066 JEFFERSON AV	540 feet to the NNE	Hazardous Waste Generator/Transporter
25	SARATOGA SQUARE APTS −NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Tank Test Failure
36	NYC HOUSING AUTHORITY − NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Spill (Unk/Other Cause)
107	SARATOGA SQUARE HOUSES −NYCHA	930 HALSEY ST	543 feet to the SE	Closed Status Spill (Misc. Spill Cause)
153	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W	Hazardous Waste Generator/Transporter
154	CON EDISON	FO 981 JEFFERSON AVE	543 feet to the W	Hazardous Waste Generator/Transporter
155	CON EDISON	55 SARATOGA AVE	547 feet to the S	Hazardous Waste Generator/Transporter
156	CON EDISON	33 WEIRFIELD ST	564 feet to the ENE	Hazardous Waste Generator/Transporter
157	CON EDISON	899 HANCOCK ST	566 feet to the WSW	Hazardous Waste Generator/Transporter
37	APARTMENT BLDG	839 HALSEY STREET	574 feet to the SW	Closed Status Spill (Unk/Other Cause)

38	839 HALSEY STREET	839 HALSEY STREET	574 feet to the SW	Closed Status Spill (Unk/Other Cause)
158	CON EDISON	FO 1019 HANCOCK ST	585 feet to the NE	Hazardous Waste Generator/Transporter
159	CON EDISON	40 CORNELIA ST	600 feet to the N	Hazardous Waste Generator/Transporter
160	CON EDISON	F/O 841 HALSEY ST	601 feet to the SW	Hazardous Waste Generator/Transporter
161	CON EDISON	930 HALSEY AVENUE	606 feet to the SSE	Hazardous Waste Generator/Transporter
162	NYCHA − OCEAN HILL SARATOGA SQUARE	930 HALSEY ST	606 feet to the SSE	Hazardous Waste Generator/Transporter
163	CON EDISON	O/F 33 WEIRFIELD	617 feet to the E	Hazardous Waste Generator/Transporter
164	NYCDEP	1102 PUTNAM AVE	619 feet to the NNW	Hazardous Waste Generator/Transporter
165	CON EDISON	898 HANCOCK ST	622 feet to the WSW	Hazardous Waste Generator/Transporter
108	ABANDONED APT. BUILDING	1102 PUTNAM AVE	626 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
109	PRIVATE RESD ABANDON	1102 PUTNAM AVE	626 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
166	CON EDISON	1064 PUTNAM AV	626 feet to the WNW	Hazardous Waste Generator/Transporter
167	CON EDISON	1064 PUTNAM AVE	626 feet to the WNW	Hazardous Waste Generator/Transporter
168	CONSOLIDATED EDISON	28 WEIRFIELD	637 feet to the E	Hazardous Waste Generator/Transporter
169	CON EDISON	1216 BUSHWICK AV	647 feet to the NE	Hazardous Waste Generator/Transporter
170	NYNEX	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
171	CONSOLIDATED EDISON	MH2328−HALSEY ST & BROAWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
172	CON EDISON	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
173	CON ED	OPP 1573 BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
174	MTA NYCT − HALSEY ST STATION J−LINE	HALSEY ST & BROADWAY	651 feet to the ESE	Hazardous Waste Generator/Transporter
39	CON ED MANHOLE #65849	SOUTH SIDE MACON/SARATOGA	663 feet to the S	Closed Status Spill (Unk/Other Cause)
11	RESIDENCE	1097 PUTNAM AVE	750 feet to the NNW	Closed Status Tank Failure
40	MANHOLE TM569	HANCOCK CTR/BUSHWOOD AVE	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
41	MANHOLE 569	HANCOCK ST & BUSHWICK AV	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
42	MANHOLE #2340	BUSHWICK AVE & HANCOCK ST	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
43	TM 569	HANCOCK ST/BUSHWICK AV	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
44	TM569	HANCOCK STREET/BUSHWORK	754 feet to the NE	Closed Status Spill (Unk/Other Cause)
26	1209 BUSHWICK AVE	1209 BUSHWICK AVE	854 feet to the NE	Closed Status Tank Test Failure
27	41 HOWARD AV / BKLN	41 HOWARD AVE	883 feet to the WNW	Closed Status Tank Test Failure
12	GREENPOINT SAVINGS BANK	1225 BUSHWICK AVE	887 feet to the NE	Closed Status Tank Failure
45	MANHOLE 63289	ELDERT ST/BROADWAY	949 feet to the ESE	Closed Status Spill (Unk/Other Cause)
46	VS 4630	HOWARD AV & PUTNAM AV	993 feet to the WNW	Closed Status Spill (Unk/Other Cause)
47	SERVICE BOX	71 WIERFELD ST	1004 feet to the NE	Closed Status Spill (Unk/Other Cause)
48	MANHOLE #28722	MACON ST & HOWARD	1107 feet to the SW	Closed Status Spill (Unk/Other Cause)
13	1016 PUTNAM AVENUE	1016 PUTNAM AVENUE	1133 feet to the W	Closed Status Tank Failure
49	SB #53417	32A WOODBINE ST	1171 feet to the NNW	Closed Status Spill (Unk/Other Cause)
50	SARATOGA AVE & DECATUR ST	SARATOGA AVE & DECATUR ST	1198 feet to the S	Closed Status Spill (Unk/Other Cause)
14	615 DECATUR ST	615 DECATUR ST	1202 feet to the SSW	Closed Status Tank Failure
110	765 MACON ST	765 MACON ST	1209 feet to the SW	Closed Status Spill (Misc. Spill Cause)
51	SPILL NUMBER 0104561	63 ELDERT ST	1230 feet to the E	Closed Status Spill (Unk/Other Cause)
52	SERVICE BOX #28718	755 MACON ST	1289 feet to the SW	Closed Status Spill (Unk/Other Cause)
53	SERVICE BOX #28721	738 MACON ST	1368 feet to the SW	Closed Status Spill (Unk/Other Cause)
54	RESIDENCE	702 DECATUR ST	1385 feet to the SSE	Closed Status Spill (Unk/Other Cause)
55	854 MONROE STREET	854 MONROE STREET	1415 feet to the WNW	Closed Status Spill (Unk/Other Cause)
15	SPILL NUMBER 9713231	1311−A BUSHWICK AVE	1420 feet to the E	Closed Status Tank Failure
16	1084 BUSHWICK	1084 BUSHWICK AVE	1446 feet to the NNW	Closed Status Tank Failure
56	MANHOLE #2361	CONELIA ST & EVERGREEN AVE	1450 feet to the NNE	Closed Status Spill (Unk/Other Cause)
57	MANHOLE # 2361	EVERGREEN AV/CORNELOUS ST	1450 feet to the NNE	Closed Status Spill (Unk/Other Cause)
58	RESIDENTIAL BUILDING	555 BAINBRIDGE STREET	1466 feet to the SSE	Closed Status Spill (Unk/Other Cause)
59	SPILL NUMBER 0104030	1080 BUSHWICK AVE	1477 feet to the NNW	Closed Status Spill (Unk/Other Cause)
60	SB 41971	35 SCHAFFER ST	1486 feet to the ESE	Closed Status Spill (Unk/Other Cause)
61	MANHOLE 695	DECATUR ST/HOWARD AVE	1490 feet to the SSW	Closed Status Spill (Unk/Other Cause)
62	556 EVERGREEN AVE	556 EVERGREEN AVE	1502 feet to the N	Closed Status Spill (Unk/Other Cause)

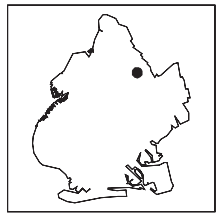
17	17 PALMETTO ST	17 PALMETTO ST	1506 feet to the NW	Closed Status Tank Failure
63	CAR LEAK	615 MACDOUGH ST	1512 feet to the SW	Closed Status Spill (Unk/Other Cause)
18	BACKYARD OF HOUSE	632 MACDONOWGH STREET	1534 feet to the SW	Closed Status Tank Failure
4	1674−1684 BROADWAY	1674−1684 BROADWAY	1550 feet to the SE	Brownfields Site
64	SPILL NUMBER 0402541	1369 BROADWAY	1559 feet to the NW	Closed Status Spill (Unk/Other Cause)
28	1070 BRUNSWICK AVE/NY TEL	1070 BRUNSWICK AVE	1621 feet to the NNW	Closed Status Tank Test Failure
65	AP MART	951 PUTNUM AVE	1633 feet to the W	Closed Status Spill (Unk/Other Cause)
66	TRANSFORMER VAULT 715	1038 GATE AVE	1647 feet to the NW	Closed Status Spill (Unk/Other Cause)
67	IN FRONT OF	429 BAINE BRIDGE STREET	1652 feet to the SSW	Closed Status Spill (Unk/Other Cause)
68	IN FRONT OF	434 BAINE BRIDGE STREET	1665 feet to the SSW	Closed Status Spill (Unk/Other Cause)
10	FORMER SERVICE STATION −MTBE	79 RALPH AVE	1672 feet to the WNW	Active Haz Spill (Misc. Spill Cause)
5	1024 GATES AVENUE	1024 GATES AVENUE	1675 feet to the WNW	Brownfields Site
69	SERVICE BOX 41972 IFO	63 SCHAEFER ST	1676 feet to the E	Closed Status Spill (Unk/Other Cause)
19	491 EVERGREEN AVE/BKLYN	491 EVERGREEN AVENUE	1685 feet to the N	Closed Status Tank Failure
70	SERVICE BOX 14548	411−413 BAINBRIDGE ST	1718 feet to the SSW	Closed Status Spill (Unk/Other Cause)
71	MANHOLE 63913	CHAUNCEY ST/SARATGOA AVE	1736 feet to the S	Closed Status Spill (Unk/Other Cause)
6	THE HENRY APARTMENTS	768 DECATUR STREET	1770 feet to the SE	Brownfields Site
111	183 RALPH AVE	183 RALPH AVE	1793 feet to the SW	Closed Status Spill (Misc. Spill Cause)
72	SERVICE BOX 15457	416 BAINBRIDGE ST	1846 feet to the SSW	Closed Status Spill (Unk/Other Cause)
73	SERVICE BOX 21468	861 JEFFERSON AVE	1877 feet to the W	Closed Status Spill (Unk/Other Cause)
29	PALMETTO	85 PALMETTO STREET	1888 feet to the NNW	Closed Status Tank Test Failure
74	RESIDENCE	333 MARION STREET	1921 feet to the SSE	Closed Status Spill (Unk/Other Cause)
75	SERVICE BOX 16718	334 CHAUNCEY ST	1949 feet to the SSW	Closed Status Spill (Unk/Other Cause)
7	192 RALPH AVENUE	192 RALPH AVE	1957 feet to the SW	Brownfields Site
2	192 RALPH AVENUE	192 RALPH AVE	1958 feet to the SW	NYSDEC Inactive Haz Waste Disposal Site
76	BASEMENT	371 BAINBRIDGE ST	1977 feet to the SW	Closed Status Spill (Unk/Other Cause)
77	SEVICE BOX 16709	347 CHAUNCY ST	1989 feet to the SSW	Closed Status Spill (Unk/Other Cause)
78	MANHOLE # 112	BROADWAY & COPPER AVE	1995 feet to the ESE	Closed Status Spill (Unk/Other Cause)
20	742 HALSEY ST.	742 HALSEY ST	2026 feet to the WSW	Closed Status Tank Failure
79	561 CHAUNCEY STREET	561 CHAUNCEY STREET	2031 feet to the SE	Closed Status Spill (Unk/Other Cause)
80	PS296 SCHOOL	125 COVERT ST	2045 feet to the ENE	Closed Status Spill (Unk/Other Cause)
81	MANHOLE # 32303	SE CORNER OF GATES AVE /	2055 feet to the WNW	Closed Status Spill (Unk/Other Cause)
82	30 COOPER ST	30 COOPER ST	2103 feet to the ESE	Closed Status Spill (Unk/Other Cause)
83	MANHOLE 2386	CENTRAL AVE/WEIERFIELD	2120 feet to the NE	Closed Status Spill (Unk/Other Cause)
84	MANHOLE 2386	WEIRFIELD ST/CENTRAL AVE	2120 feet to the NE	Closed Status Spill (Unk/Other Cause)
85	SERVICE BOX 20343	732 HALSEY ST	2126 feet to the WSW	Closed Status Spill (Unk/Other Cause)
86	SPILL NUMBER 0101053	CENTRAL AVE/PUTNAM AVE	2166 feet to the NNE	Closed Status Spill (Unk/Other Cause)
21	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE	Closed Status Tank Failure
30	ENGINE CO. 233/LADD. CO. 176 FDNY −DDC	25 ROCKAWAY AVENUE	2181 feet to the SE	Closed Status Tank Test Failure
112	DRUM RUN	25 ROCKAWAY AVE	2181 feet to the SE	Closed Status Spill (Misc. Spill Cause)
87	SERVICE BOX 1673	498 CHAUNCEY ST	2190 feet to the SE	Closed Status Spill (Unk/Other Cause)
31	TANK ROOM − ENCLOSED TTF	40 GROVE ST	2194 feet to the NW	Closed Status Tank Test Failure
88	MH 63919	GROVE ST/ BROADWAY	2205 feet to the NW	Closed Status Spill (Unk/Other Cause)
89	SPILL NUMBER 9808332	229−233 MARION ST	2211 feet to the SSW	Closed Status Spill (Unk/Other Cause)
113	358 BAYBRIDGE ST	358 BAYBRIDGE ST	2217 feet to the SW	Closed Status Spill (Misc. Spill Cause)
22	743 HANCOCK STREET	743 HANCOCK STREET	2235 feet to the W	Closed Status Tank Failure
23	NYPD 81ST PCT	18 RALPH AVE	2245 feet to the WNW	Closed Status Tank Failure
32	32 RALPH AV − BKLN	32 RALPH AVENUE	2245 feet to the WNW	Closed Status Tank Test Failure
90	ABANDONED BLDG	966 GATES AVE	2282 feet to the WNW	Closed Status Spill (Unk/Other Cause)
114	ABANDONED BUILDING	964 GATES AVE	2299 feet to the WNW	Closed Status Spill (Misc. Spill Cause)
115	TANK FAILURE AND POSSIBLE RELEASE TO SOIL	477 DECATUR STREET	2340 feet to the SW	Closed Status Spill (Misc. Spill Cause)
91	WINQ RES	242 SUMPTER ST	2383 feet to the SSE	Closed Status Spill (Unk/Other Cause)
92	SB32349	RALPH AVE AND CHAUNCEY ST	2387 feet to the SW	Closed Status Spill (Unk/Other Cause)

93	SERVICE BOX 20476	1167 HALSEY ST	2420 feet to the NE	Closed Status Spill (Unk/Other Cause)
94	MANHOLE #DS2884	RALPH AVE/LEXINGTON AVE	2429 feet to the NW	Closed Status Spill (Unk/Other Cause)
95	NEW CONSTRUCTION	150 SUMPTER ST	2461 feet to the S	Closed Status Spill (Unk/Other Cause)
116	BASEMENT	1419 BUSHWICK AVE	2484 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
96	233 HOWARD AVENUE	233 HOWARD AVENUE	2499 feet to the S	Closed Status Spill (Unk/Other Cause)
117	SPILL NUMBER 0105366	233 HOWARD AVENUE	2499 feet to the S	Closed Status Spill (Misc. Spill Cause)
97	PS # 040	265 RALPH AVE	2500 feet to the SSW	Closed Status Spill (Unk/Other Cause)
118	73 GROVE ST/BKLYN	73 GROVE STREET	2504 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
98	DRUM RUN	76 MOFFAT ST	2532 feet to the ESE	Closed Status Spill (Unk/Other Cause)
119	STOLEN VAN	76 MOFFAT ST	2532 feet to the ESE	Closed Status Spill (Misc. Spill Cause)
99	VACANT LOT NEXT TO HER	83 MACDOUGAL ST	2565 feet to the S	Closed Status Spill (Unk/Other Cause)
100	MENAHAN APT LLC	20 MENAHAN ST	2575 feet to the NNW	Closed Status Spill (Unk/Other Cause)
24	119 LINDEN STREET	119 LINDEN STREET	2577 feet to the NNW	Closed Status Tank Failure
120	119 LINDEN STREET/BKLYN	119 LINDEN STREET	2577 feet to the NNW	Closed Status Spill (Misc. Spill Cause)
33	APARTMENT BLDG.	940−950 GATES AVE	2582 feet to the WNW	Closed Status Tank Test Failure
101	SERVICE BOX 31332	129 PATCHEN AVE	2582 feet to the W	Closed Status Spill (Unk/Other Cause)
102	SPILL NUMBER 0030010	1435 BUSHWICK AVE	2602 feet to the ESE	Closed Status Spill (Unk/Other Cause)
9	COMMERCIAL WAREHOUSE	834 LEXINGTON AVE	2618 feet to the WNW	Active Haz Spill (Unknown/Other Cause)
8	FORMER MOTOR FREIGHT GARAGE	834 LEXINGTON AVENUE	2621 feet to the WNW	Brownfields Site
103	NEXT TO 85 MACDOUGAL ST	BY HOWARD AVE & MACDOUGAL	2623 feet to the S	Closed Status Spill (Unk/Other Cause)
104	77 MACDOUGAL ST	77 MACDOUGAL ST	2626 feet to the S	Closed Status Spill (Unk/Other Cause)
3	WOLFF−ALPORT CHEMICAL COMPANY	1127−1129 IRVING AVENUE	4695 feet to the ENE	NYSDEC Inactive Haz Waste Disposal Site
1	WOLFF−ALPORT CHEMICAL COMPANY	1125−1139 IRVING AVENUE	4746 feet to the ENE	National Priority List(NPL) Site

Toxics Targeting
1 Mile Radius Map

MWBE Site C

Brooklyn, NY 11233



Kings 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

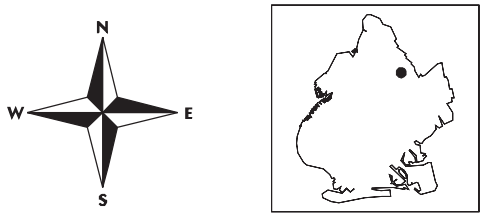
1 0 1/8 1/4 1/2 1

Distance in Miles

Toxics Targeting
1/2 Mile Radius Map

MWBE Site C

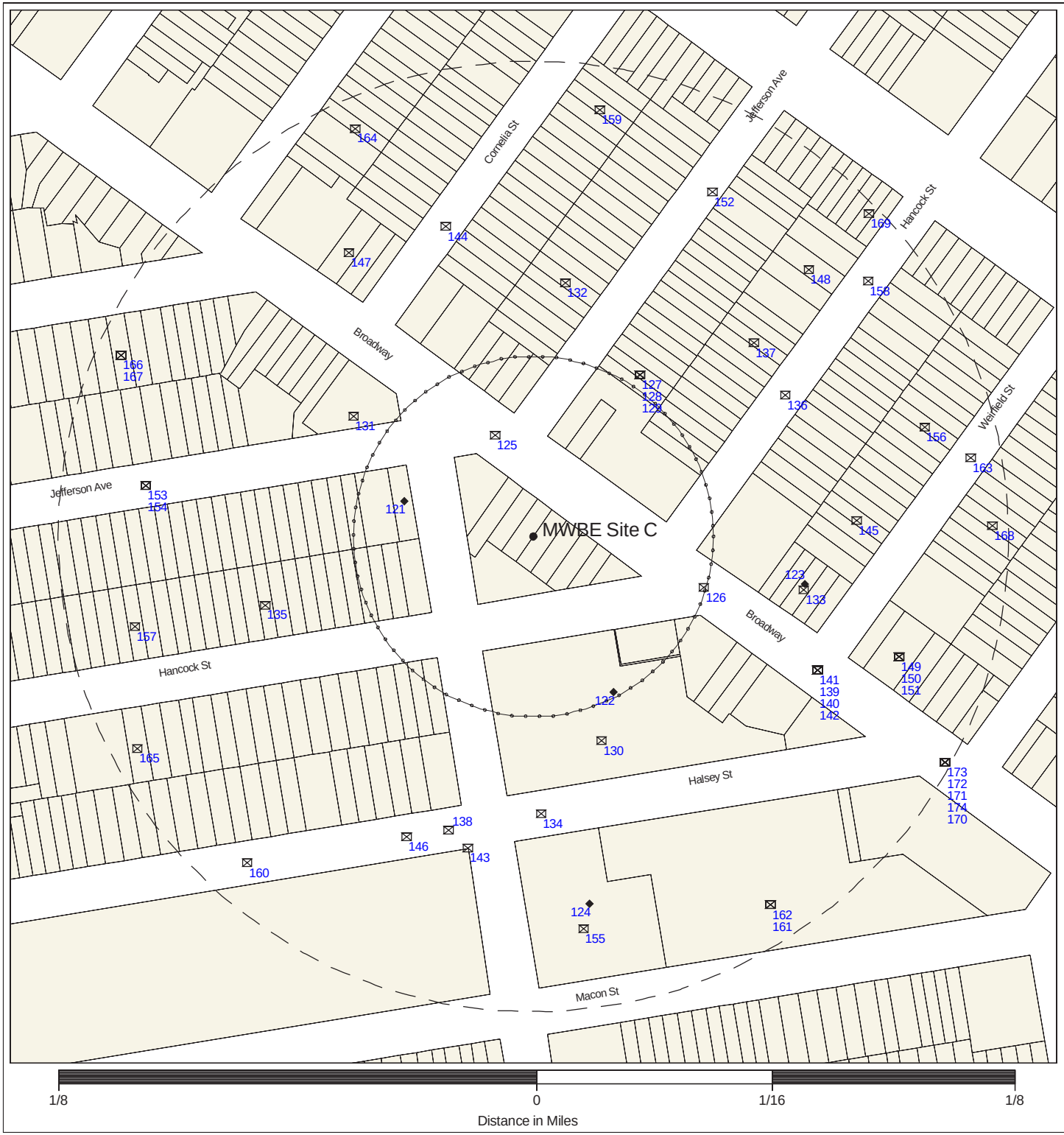
Brooklyn, NY 11233



Kings 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
- MTBE Gasoline Additive Spill

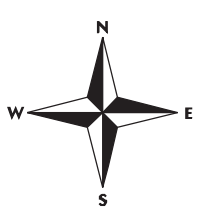
- Site Location
- Waterbody
- County Border
- Railroad Tracks
- 1 Mile Radius
- 1/2 Mile Radius
- 1/4 Mile Radius
- 1/8 Mile Radius

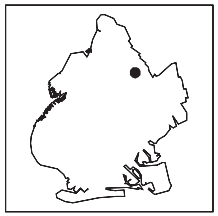


Toxics Targeting
1/8 Mile Radius Map

MWBE Site C

Brooklyn, NY 11233

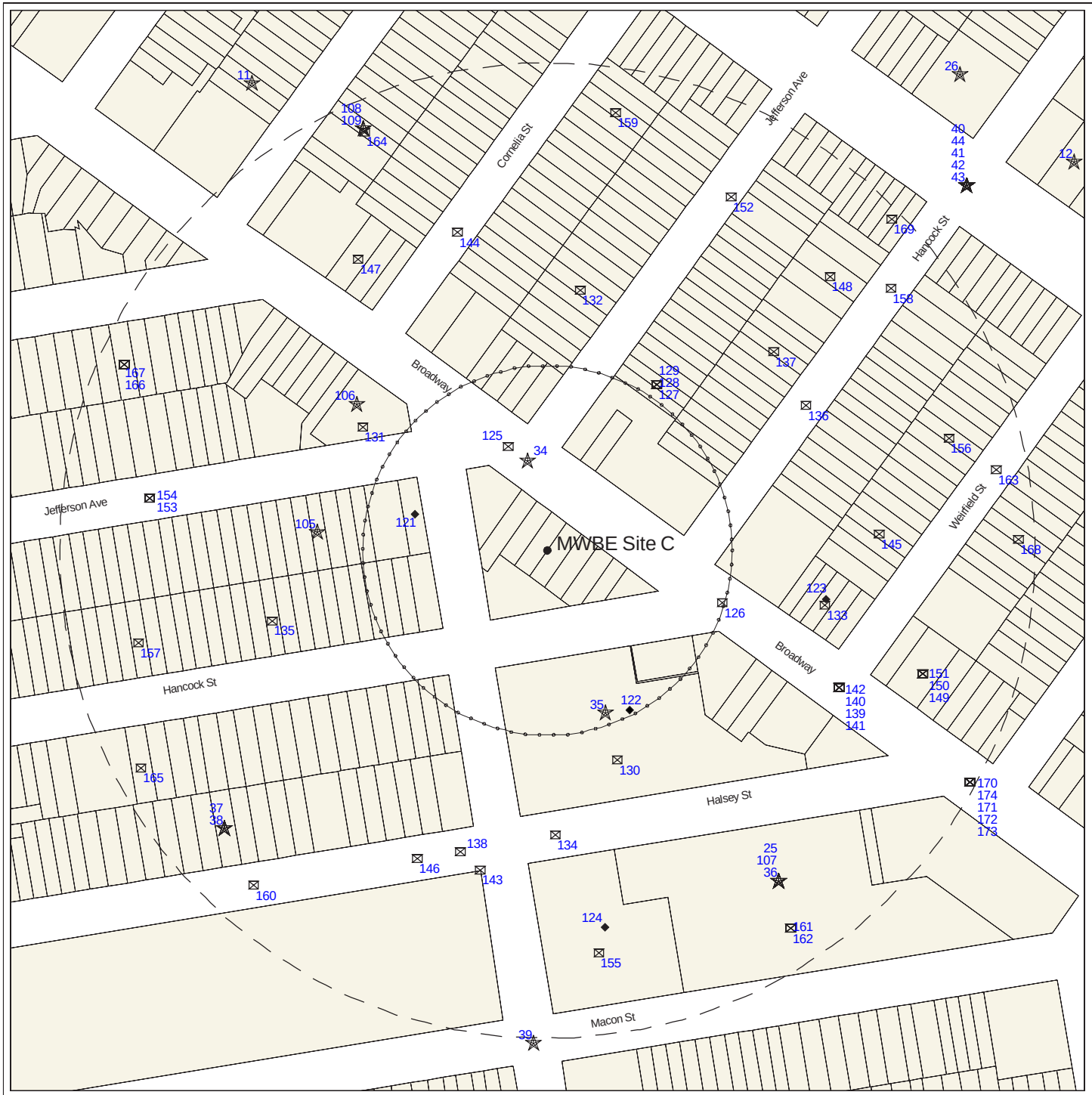




Kings County

- 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

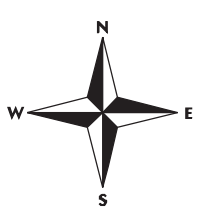
- Site Location
- County Border
- 1/8 Mile Radius
- Waterbody
- Railroad Tracks
- 250 Foot Radius

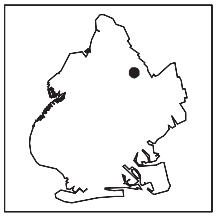


Toxics Targeting
1/8 Mile Closeup Map

MWBE Site C

Brooklyn, NY 11233





Kings County

- National Priority List (NPL) *
- Delisted NPL Site **
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- 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 ****
- MTBE Gasoline Additive Spill **
- 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

1/8 0 1/16 1/8

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

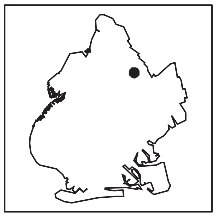
MWBE Site C

Brooklyn, NY 11233

N

W E

S



Kings County

- National Priority List (NPL)
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- Railroad Tracks

Tax Parcel Information Table

MWBE Site C
Brooklyn, NY 11233

Subject Parcel or Parcels

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
3−01489−0014	BROADWAY	HOUSING PRESERVATION	R6	V1	0		99000	2206
3−01489−0013	1514 BROADWAY	HOUSING PRESERVATION	R6	V1	0		99450	2217

Other Parcels Found On The Tax Parcel Map

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
3−03387−0064	981 HANCOCK STREET	MARCOS PIZZARO	R6	C0	1	1910	11991	1900
3−03387−0062	985 HANCOCK STREET	EMILE MISSIAL	R6	C0	1	1910	11991	1900
3−03380−0059	1033 JEFFERSON AVENUE	LAREDO WILLIAM	R6	V1	0		90000	2000
3−03394−0006	1533 BROADWAY	1533 REALTY LLC C/O S	R6	K2	1	1910	527400	12500
3−03387−0013	1036 JEFFERSON AVENUE	NIEVES EDWIN	R6	B2	1	1920	5124	1800
3−03387−0015	1040 JEFFERSON AVENUE	MARISOL BETANCES	R6	B2	1	1920	5124	1800
3−03387−0017	1044 JEFFERSON AVENUE	SMITH WILLIAM	R6	B2	1	1920	6267	1800
3−03387−0061	987 HANCOCK STREET	CASALINUEVO, WINSTON	R6	C0	1	1910	11991	1900
3−03380−0003	1501 BROADWAY	COSGRIFF, WILLIAM	R6	S4	1	1915	109301	2000
3−03387−0058	993 HANCOCK STREET	GLEN WALLACE	R6	B2	1	1920	6842	1800
3−03387−0019	1048 JEFFERSON AVENUE	MARJORIE BAILEY	R6	B2	1	1920	5820	1800
3−03387−0001	1531 BROADWAY	HOUSING PRESERVATION	R6	V1	0		72000	1600
3−03387−0060	989 HANCOCK STREET	MC LEAN, IRIS	R6	C0	1	1910	11991	1900
3−03387−0018	1046 JEFFERSON AVENUE	GLORIA STEWART	R6	B2	1	1920	6267	1800
3−03387−0056	997 HANCOCK STREET	THERESA LIVAN	R6	B2	1	1920	6842	1800
3−03380−0005	1491 BROADWAY	JSB REALTY ASSOCIATES	R6	W9	1	2007	2256750	5983
3−03387−0014	1038 JEFFERSON AVENUE	WILLIAM A LAREDO	R6	V1	0		81000	1800
3−03387−0065	979 HANCOCK STREET	CURTIS, MYRA	R6	C0	1	1910	11991	1900
3−03387−0008	1517 BROADWAY	INTRA−BROKERAGE ASSOC	R6	S3	1	1915	39165	1960
3−03380−0001	1507 BROADWAY	STEP GG CORP.	R6	K1	1	1998	145350	2000
3−03387−0063	983 HANCOCK STREET	SEA BREEZE EQUITIES L	R6	C0	1	1910	11991	1900
3−03387−0016	1042 JEFFERSON AVENUE	CARL GREENE	R6	G9	1	1950	38700	1800
3−03387−0059	991 HANCOCK STREET	CARBALLO, MIRIAM	R6	B2	1	2005	32160	1800
3−03380−0058	1035 JEFFERSON AVENUE	573 ELTON CORP	R6	C0	1	1910	11197	2000
3−03380−0060	1031 JEFFERSON AVENUE	MICHELLE BAPTISTE	R6	C3	1	1905	15035	2000
3−03387−0057	995 HANCOCK STREET	HOPE, ARTHUR A	R6	B2	1	1920	6842	1800
3−03380−0009	1487 BROADWAY	BROADWAY CORNELIA REA	R6	K9	1	1915	195300	4017
3−03380−0002	1505 BROADWAY	LIPA LICHTENSTEIN	R6	C1	1	1915	206929	2000
3−03380−0004	1499 BROADWAY	COIRRADO, KIM	R6	C3	1	1915	206929	2000
3−01488−0129	980 JEFFERSON AVENUE	HOWARD LARRY G	R6B	B2	1	1992	25552	2025
3−01488−0135	931 HANCOCK STREET	KING ROBIN E	R6B	B2	1	1992	25552	2025
3−01488−0134	933 HANCOCK STREET	SMALL FITZGERALD	R6B	B2	1	1992	25552	2025
3−01491−0035	932 HANCOCK STREET	BROWN, ANTHONY	R6B	C0	1	1901	17625	2000
3−01491−0033	928 HANCOCK STREET	REYES, SILVIO	R6B	C0	1	1899	21094	2000
3−01486−0035	1476 BROADWAY	RAMON NUNEZ	R6	S2	1	1920	19292	1700
3−01491−0029	924 HANCOCK STREET	KING ROBIN E	R6B	C3	1	1910	96583	2683
3−01488−0133	935 HANCOCK STREET	CLARKE DENNIS A	R6B	B2	1	1992	20130	2025

BBL #	Address	Owner	Zoning District(s)	Building Class	# of Buildings	Year Built	Assessment	Lot Area
3−01488−0137	927 HANCOCK STREET	HARPER NORMAN	R6B	B2	1	1992	25552	2025
3−01486−0037					0			
3−01488−0132	937 HANCOCK STREET	SERRANO MARIA	R6B	B2	1	1992	24994	2908
3−01488−0131	984 JEFFERSON AVENUE	MARCELINA J BARKER	R6B	B2	1	1992	27933	4208
3−01491−0032	926 HANCOCK STREET	PINDER, ANTHONY	R6B	C3	1	1911	12027	2400
3−01491−0027	920 HANCOCK STREET	ABRAM WHITE	R6B	C3	1	1909	94402	2642
3−01488−0136	929 HANCOCK STREET	JULIO A HERNANDEZ	R6B	B2	1	1992	20130	2025
3−01486−0036	1478 BROADWAY	MITCHELL, ELERY	R6 R6B	S2	1	1920	9780	2720
3−01488−0138	925 HANCOCK STREET	SMITH LEON	R6B	B2	1	1992	25552	2025
3−01491−0028	922 HANCOCK STREET	CARLOTER CARRYL	R6B	C3	1	1909	94402	2642
3−01491−0034	930 HANCOCK STREET	HENRY, MICHAEL	R6B	C0	1	1901	21910	2000
3−01491−0038	869 HALSEY STREET	METROPOLITAN BAPTISTC	R6B	M9	1	1931	149850	4200
3−01488−0128	978 JEFFERSON AVENUE	BRYANT, SARAH	R6B	B2	1	1992	25552	2025
3−01488−0039	992 JEFFERSON AVENUE	SING KIT WONG	R6B	C7	1	1920	293400	2750
3−01488−0130	982 JEFFERSON AVENUE	NEWTON, DARLENE Z	R6B	B2	1	1992	20130	2025
3−01492−0015	BROADWAY	REBUILT REALTY CORP	R6	K1	1	2008	496350	5602
3−01492−0010	956 HANCOCK STREET	KINGS REALTY & PROPE	R6	C1	1	1905	244800	3885
3−01492−0001	33 SARATOGA AVENUE	NEW YORK CITY HOUSING	R6	D1	1	1966	1738350	58845
3−01492−0019	1544 BROADWAY	WILLIAMS LINCOLN	R6	K2	1	1931	82350	2600
3−01492−0006	946 HANCOCK STREET	THE NEW YORK CITY HOU	R6	V0	0		60	48
3−01492−0020	1546 BROADWAY	WILLIAMS LINCOLN	R6	Z9	1		42300	2600
3−01492−0021	1550 BROADWAY	REBUILT REALTY CORP	R6	K1	1	1997	391950	6058
3−01489−0017	1522 BROADWAY	HOUSING PRESERVATION	R6	V1	0		73350	1631
3−01489−0018	1524 BROADWAY	HOUSING PRESERVATION	R6	V1	0		65250	1453
3−01489−0001	17 SARATOGA AVENUE	SAFI NAZIEMUL	R6	E9	1	1920	198000	3450
3−01489−0012	1512 BROADWAY	HOUSING PRESERVATION	R6	V1	0		99900	2223
3−01489−0011	1510 BROADWAY	HOUSING PRESERVATION	R6	V1	0		126000	2810
3−01489−0015	BROADWAY	HOUSING PRESERVATION	R6	V1	0		98550	2200
3−01489−0016	1520 BROADWAY	HOUSING PRESERVATION	R6	G0	1	1800	1861	2206
3−01489−0006	7 SARATOGA AVENUE	HOUSING PRESERVATION	R6	V1	0		139950	3113

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).

NATIONAL PRIORITIES LIST (NPL) SITES IDENTIFIED WITHIN 1 MILE SEARCH RADIUS
NO DELISTED NPL SITES 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 1 **WOLFF−ALPORT CHEMICAL COMPANY** **EPA Facility Id: NYC200400810**
1125−1139 IRVING AVENUE RIDGEWOOD, NY 11385 TT−Id: 100A−0006−524

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (2)
Approximate distance from property: 4746 feet to the ENE

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

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Wolff-Alport Chemical Company
New York
EPA ID#: NYC200400810
EPA REGION 2
Congressional District(s): 07
Queens County - 1125-1139 Irving Avenue

NPL LISTING HISTORY
Proposed Date: 12/12/2013
Final Date: 5/12/2014

Site Description
The former Wolff-Alport Chemical Company operated a facility at 1127-1129 Irving Avenue, in Ridgewood, New York on the Brooklyn/Queens border from the 1920s until 1954. Beginning around 1940, the company began importing monazite sand via a railroad spur behind the facility. Wolff-Alport processed the monazite to extract rare earth elements for sale to various commercial entities. Process residues of monazite sand contain thorium and, to a lesser degree, uranium and their decay products, such as radium. These residues were disposed of in the sewer system until 1947, when the practice was halted by the Atomic Energy Commission, which began purchasing the waste material. Other wastes may have been buried on-site.

The site contains active businesses that operate within structures formerly used by Wolff-Alport, including an auto repair shop, a deli and warehouse space. The area around the site is, in part, residential in nature. A public school and a private daycare center are located approximately 900 feet southwest of the site.

Threat and Contaminants
The presence of radioactivity has been documented within and underneath the on-site buildings, in the soil at the rear of

the structures along the former rail spur and underneath the sidewalk along Irving Avenue in front of the former Wolff-Alport building. Before the protective actions taken at the site described below, persons that worked in or accessed the buildings at the site, traversed the public sidewalk in front of the site or trespassed in the rear portion of the site were exposed to ionizing radiation by passing over or coming into contact with these impacted areas. Any excavation conducted at the site, including on Irving Avenue, could result in increased direct gamma radiation exposures to persons working or walking in and around the disturbed area.

Surveys conducted at the site indicate that elevated levels of radioactivity are present within one foot of the surface at the rear of the site on the former rail spur. The area consists of soil overgrown with weeds. Although the parcel on which the former rail spur is located is reportedly considered abandoned and current ownership is questionable, the parcel is used to store heavy machinery, crane equipment and, on occasion, vehicles. As a result, the radioactive contamination can be spread off-site under this scenario and potentially be available for inhalation as a particulate, since the streets near the site sustain a significant amount of vehicular traffic.

New York State and New York City conducted various surveys and testing over the years that confirm the presence of residual radioactive contamination at the former Wolff-Alport facility. The testing indicates that there is no immediate threat to nearby residents, employees or customers of businesses in the affected area along Irving and Cooper Avenues. However, exposure to this residual radioactive contamination may pose a health threat to on-site workers under certain long-term exposure scenarios. The EPA, City and State of New York are working together to reduce these potential long-term exposures to radiation.

A collaborative radiological assessment was completed by the EPA, the New York State Department of Health, and the New York City Department of Health and Mental Hygiene in July/August 2013. The assessment included gamma radiation surveys within a half mile radius of the site, on-site and off-site soil sampling and on-site and off-site thoron-220 gas measurements. The results suggest that there is no off-site exposure to the surrounding community from radiological contaminants located on-site.

Cleanup Approach
The site is being addressed in two stages: immediate actions and long-term remedial phases focusing on identification and remediation of the source of contamination.

Response Action Status
Immediate Actions: In 1988, an investigation confirmed the presence of surface radiological contamination at the site. The level of contamination found was below the allowable dose limit to the public at that time. Since then, the allowable dose level has changed and subsequent investigations have been conducted. Today, the site consists of six parcels of land with a number of structures, including several small businesses, office space and warehouses. The results of more recent investigations indicated that radiation at the site was present within portions of the buildings. In addition, a survey in 2009 found deep soil contamination under the site down to at least 20 feet; possible contamination of a sewage line, surrounding soil and manholes and the presence of thoron and radon gas.

In 2013, the EPA performed a response action at the site to address the potential health risks associated with exposure to ionizing radiation. The EPA’s actions included the installation of lead, steel and concrete shielding within the on-site buildings and along the Irving Avenue sidewalk immediately adjacent to the buildings. A radon mitigation system was also installed in the Terra Nova Construction Company office.

Entire Site: A workplan for a remedial investigation and feasibilty study to fully characterize site conditions, determine the nature of all waste materials, assess risk to human health and the environment and identify and evaluate remedial alternatives was approved in November 2014. The investigative portion of the work called for in the workplan will commence in spring 2015.

Site Facts: A search for potentially responsible parties revealed that most businesses formerly operating at site are now defunct with no descendants still in existence, including Wolff-Alport Chemical Company.

Cleanup Progress
In October 2013, the EPA initiated shielding operations which were intended to prevent exposure to subsurface elevated gamma radiation and radon at the site. The work was completed in April 2014. Prior to the installation of the shielding, gamma radiation exposure rates at the site ranged from background to 430 microroentgen per hour. Annual dose accumulation exceeded the Nuclear Regulatory Commission's 100 millirem per year (mrem/yr) limit in two areas---inside the Terra Nova Construction Company office at 126.12 mrem/yr and along the Irving Avenue sidewalk at 177.72 mrem/yr. Analytical results also found elevated concentrations of radon gas at the site with 4.3 picocuries per liter (pCi/L) inside the Los Primos Auto Body Shop and 4.6 pCi/L inside the Terra Nova office in exceedence of the EPA action level of 4.0 pCi/L.

After placement of the shielding, exposure rates were reduced between 70 to 93% at contact level at each property and between 69 and 94% at waist level. The highest estimated annual dose is now 47.54 mrem/yr along the Irving Avenue sidewalk, well below the 100 mrem/yr limit. Due to the combination of shielding and, in the Terra Nova office, a radon mitigation system, radon concentrations have decreased below 2.0 pCi/L for both properties that formerly exceeded EPA's 4.0 pCi/L action level.

Site Repositories
EPA Region 2 Superfund Records Center, 290 Broadway, 18th Floor, New York, NY 10007-1866

April 30, 2015

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 2 **192 RALPH AVENUE** **Facility Id: 224042**
192 RALPH AVE BROOKLYN, NY 11233 TT−Id: 120A−0004−571

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1958 feet to the SW

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

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

SITE CODE: 224042
CLASSIFICATION CODE: 02 REGION: 2 DEC ID: 58281
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: 192 Ralph Avenue
STREET ADDRESS: 192 Ralph Ave TOWN: New York City
CITY: Brooklyn ZIP: 11233 COUNTY: Kings

ESTIMATED SIZE: 0.009 Acre
SITE TYPE: Dump- Structure-X Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:

IDENTIFIER	SOURCE
V00669	VCP Site ID

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:
CURRENT OWNER(S):
NAME: Brooklyn Properties 5, LLC Owner Type: Innocent Owner -Class 2a/2/3/4/5 HS

Peter S. Rosenbaum
ADDRESS: 188 Ralph Avenue
Brooklyn, NY 11233

NAME: Brooklyn Properties 5, LLC — Owner Type: Innocent Owner -Class 2a/2/3/4/5 HS
Peter S. Rosenbaum
ADDRESS: 412 Carriage Road
Roslyn, NY 11576

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:
NAME: Brooklyn Properties 5, LLC — Operator Type: Corporate or Commercial
Peter S. Rosenbaum
ADDRESS: 192 Ralph Avenue
Brooklyn, NY 11233

APPLICANT REQUESTOR(S):
NAME: Hubbell Mountain, LLC — Applicant Type: Corporate or Commercial
Omri Minin
ADDRESS: 404 East 79th Street
New York, NY 10075-1482

NAME: Brooklyn Properties 5, LLC — Applicant Type: Corporate or Commercial
Peter S. Rosenbaum
ADDRESS: 188 Ralph Avenue
Brooklyn, NY 11576

DOCUMENT REPOSITORY(S):
NAME: Saratoga Library — Repository Typ: Local Government
ADDRESS: 8 Thomas S. Boyland St
Brooklyn, NY 11233

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:
Location: The site is located in an urban area in the southeastern part of the Bedford Stuyvesant section of Brooklyn. The site occupies 188 through 192 Ralph Avenue and is identified on the New York City Tax Map as Section 3, Block 1678, Lot 53.

Site Features: The main site feature is the existing three-story building on the property and an attached one-story addition with a basement at the rear (192 Ralph Avenue). The building structure is 20’ x 80’ occupying an area of approximately 0.037 acres. Current Zoning/Use: The building at the site is zoned mixed Residential and Commercial (R6B) and is currently unoccupied. The surrounding properties are either zoned the same or as Residential 1 and 2 Family (primarily row house structures), which make up the majority of the area property uses. The row house property adjacent to the site building at 590 MacDonough Street has this

latter zoning designation, while the adjacent 4-story, 14-unit apartment building to the south at 196 Ralph Avenue has the residential and commercial designation. Past Use of the Site: Dry-cleaning operations (wet chemical) were conducted at the site from approximately 1946 until 1998. From 1998 until 2000 the site was used solely as a drop-shop dry-cleaning operation. The dry-cleaning operations took place in the 20 x 20 foot addition at the rear of the building with the equipment located on the first floor. It appears that the site contamination came from releases of process chemicals into the basement area of the one-story building addition, which at the time had a dirt floor in the basement allowing migration of contaminants into the underlying soils and groundwater.

Site contamination was discovered in 2002 during an owner-initiated subsurface investigation within the basement area of the building. With the confirmation of waste disposal at the site the property owner entered the Department's Voluntary Cleanup Program (VCP)as a Volunteer in 2004. The VCP site is defined as the entire 80' x 20' parcel. The State Superfund site is a 20' x 20' area at the southern end of the parcel. Operable Units: The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 2 (OU2) is the on-site source area. A Record of Decision was signed for OU2 on October 18, 2013. OU1 consists of the off-site groundwater and soil vapor plumes. Site Geology and Hydrogeology: The general area geology is composed of outwash sand and gravel deposits. Locally, there are highly permeable fine to medium sands with some gravel. There appears to be a confining silt/clay layer of unknown thickness present in the site area around 60 to 70 feet below the ground surface. Groundwater is encountered at 35 to 40 feet below ground surface (~9 feet above sea level). The area groundwater flow is to the south/southeast.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
TETRACHLOROETHYLENE (PCE)	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
tetrachloroethene (PCE)	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Nature and Extent of Contamination: Based upon investigations conducted to date the primary contaminant of concern at the site is the dry cleaning solvent tetrachloroethylene (also known as perchloroethylene, perc or PCE).

Chemical concentrations are reported in parts per billion (ppb) for water, soil samples are reported in parts per million (ppm) while air samples are reported in micrograms per cubic meter (ug/m3). Soil Contamination: The significant soil contamination at the site is primarily limited to the area under the building footprint. The shallow soils are contaminated with PCE in the range of 10 to 344 ppm. The restricted residential soil cleanup objective (SCO) for PCE is 19 ppm. Groundwater Contamination: Groundwater beneath the building footprint is contaminated with PCE above groundwater standard of 5 ppb. PCE has also migrated from the site area down-gradient to the south southeast under the adjoining sidewalks and streets. PCE contamination in the upper part of the aquifer (~ 40 feet below ground surface) ranges from approximately 2.4 to 320 ppb in the vicinity of the site in February, 2013. Soil Vapor: Soil vapor measurements taken from the five extraction wells in the basement of the building showed PCE concentrations ranged from 678 to 19,000 ug/m3 during the latest monitoring event. Indoor Air: A post-IRM indoor air sample in the southern 20'x 20' portion of the parcel defined as the State Superfund site showed PCE at a concentration of 7.46 ug/m3. Three post-IRM indoor air samples were taken in the remainder of the parcel and contained a maximum PCE concentration of 6.71 ug/m3.

ASSESSMENT OF HEALTH PROBLEMS:
People will not come into contact with contaminated soils since they are located at depth and beneath a building foundation. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect 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. A soil vapor extraction system has been installed beneath the on-site building to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the building. The potential for off-site inhalation exposures due to soil vapor intrusion is being investigated as part of a separate investigation (Operable Unit 1).

PROJECT COMPLETIONS:
Operable Unit 02 - On-site Remedial Program

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation	On-Site	10/18/2013	No Further Action

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 3 **WOLFF−ALPORT CHEMICAL COMPANY** **Facility Id: 241180**
1127−1129 IRVING AVENUE RIDGEWOOD, NY 11385 TT−Id: 120A−0008−798

MAP LOCATION INFORMATION
Site location mapped by: MAP COORDINATE (1)
Approximate distance from property: 4695 feet to the ENE

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

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

SITE CODE: 241180
CLASSIFICATION CODE: 02 REGION: 2 DEC ID: 514255
CLASSIFICATION CODE DESCRIPTION:
Significant threat to the public health or environment - action required.

NAME OF SITE: Wolff-Alport Chemical Company
STREET ADDRESS: 1127-1129 Irving Avenue TOWN: New York City
CITY: Ridgewood ZIP: 11385 COUNTY: Queens

ESTIMATED SIZE: 0.75 Acre
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: Rudy L Reyes Owner Type: Private Resident
ADDRESS: 80-44 90th Road
Woodhaven, NY 11421

NAME: KB Global Partners, Inc. Owner Type: Corporate or Commercial
ADDRESS: 254 East 33rd Street
New York, NY 10016

NAME: LPL Properties Inc. Owner Type: Corporate or Commercial
Mary Piccolo
ADDRESS: 9 Oak Shore Drive
Bayville, NY 11709

NAME: Second A-One, Inc. Owner Type: Corporate or Commercial
ADDRESS: 1775 46th Street
Brooklyn, NY 11204

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:
Location: The former Wolff-Alport Chemical Company Site is a 0.75 acres located at 1125-1139 Irving Avenue in Queens, New York.

Site Features: The site is primarily covered with structures, with an unpaved grassy area that was formerly a railroad spur. These structures include a 2-story masonry and frame building housing a delicatessen and grocery store, (1125 Irving Avenue, Jarabaccoa Deli Grocery Corp), office space and residential apartments with an attached 1-story masonry building housing a tire shop (1125 Irving Avenue, Primo Flat Fix) and mini-ATV shop; a 1-story building with an auto-body shop (1514 Cooper Avenue, K and M Auto Repair) and office space; two 1-story masonry buildings used for warehouse purposes (1133-1139 Irving Avenue, S7M Construction and 1129 Irving Avenue, Artic Glacier); and a commercial building with an auto repair shop (1127 Irving Avenue, Primo Auto Body). Current Zoning/Use: The area is characterized by mixed industrial, commercial and residential use. The site is bound by Cooper Avenue to the north and west, by a cabinet manufacturer/warehouse to the east and Irving Avenue to the south. There is public school and a private daycare center located approximately 900 feet southwest of the site. Past Use of the Site: The former Wolff-Alport Chemical Company operated at this site from the 1920s until 1954. Around 1940, the company began importing monazite sand via a railroad spur behind the facility. The company processed the monazite sands to extract rare earth elements for sale to various commercial groups. The residues from the extraction process contained thorium, uranium to a lesser extent and their decay products such as radium. The residues were disposed of in the sewer system until 1947 when the Atomic Energy Commission halted the practice and began the purchase of the waste from the monazite sand extraction process. Other wastes may have been buried on-site. Site Geology and Hydrogeology: The site is located within the urban land greenbelt and urban land till substratum. The soil type beneath the site consists of gravelly sandy loam. Groundwater is found within unconsolidated sediments below the ground surface. It also occurs in bedrock within secondary permeability zones such as fractures, faults and foliation planes. Monitoring well installed at the site with a depth to water recorded at 54.5 feet below ground surface. The regional groundwater flow direction is trending towards the East River.

CONFIRMED HAZARDOUS WASTE DISPOSED:
None reported

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Nature and Extent of Contamination: The presence of radioactivity has been documented within and underneath the on-site buildings, in the soil at the rear of the structures along the former rail spur and underneath the sidewalk along Irving Avenue in front of the former Wolff-Alport Company building. Radiological surveys conducted by New York State and New York City in the mid 80s, 90s and early 2000s confirmed the the presence of residual radioactive contamination at the site. The collaborative radiological assessment conducted by EPA, New York State Department of Health, and the New York City Department of Health and Mental Hygiene in July/August of 2013, confirmed the earlier findings. The assessment included gamma radiation survey within a half mile radius of the site, on-site and off-site soil sampling and on-site thoron-220 gas measurements. The results of the surveys and soil analysis suggest that there is no off-site exposure to the surrounding community from radiological contaminants located on-site. The radiological surveys and soil analysis determined that the contaminants of concern is thorium-232 at concentrations up to 1,133 picocuries per gram (pCi/g), compared to background levels of 0.5-1.0 pCi/g. The radioactive decay of thorium-232 has a half-life of 14 billion years, is a lengthy and complex process involving many radioactive decay products. One of the key components of the thorium decay chain is radon-220 (i.e., thoron), a radioactive gas that emanates from surfaces where thorium-232 is present. Thoron gas has been found at elevated levels in the deli basement, in air above the source material and outside the source boundary. Direct radiation fields generated by these radioactive contaminants have been mitigated by the

interim EPA actions.

ASSESSMENT OF HEALTH PROBLEMS:
People who enter the site may come into contact with contaminated soil if they dig below the surface. Groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains its water from a different source that is not affected by this contamination. Radiological contaminants may move from the subsurface into the indoor air of buildings and outdoor air. A radiological survey identified impacts in on-site air quality at levels that warrant action to reduce exposure. The results of the surveys and soil analysis suggest that there is no off-site exposure to the surrounding community from radiological contaminants located on-site. Radiological contaminants do extend off-site in the sewers where workers may come into contact with contaminants during repairs or construction activities. Further investigation is warranted to determine whether people could contact other contaminants associated with the site.

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

BROWNFIELDS SITES (STATE & LOCAL) 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 4 **1674−1684 BROADWAY** **Facility Id: 15CVCP148K**
1674−1684 BROADWAY, BROOKLYN, NY TT−Id: 330A−0000−064
VCP Project Id: 15CVCP148K

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1550 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11233

Brownfield Program: NYC Voluntary Cleanup Program

Class: Active

Parcel(s): Block 1503 Lot(s) 29

Click here for detailed site information. Copy and paste 15CVCP148K in the search box, click the green search button, then click the Project ID # to see downloadable site documents.

Map Identification Number 5 **1024 GATES AVENUE** **Facility Id: 13CVCP117K**
1024 GATES AVENUE, BROOKLYN, NY TT−Id: 330A−0000−116
VCP Project Id: 13CVCP117K

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1675 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11221

Brownfield Program: NYC Voluntary Cleanup Program

Class:

Parcel(s): Block 1480 Lot(s) 23, 55, 56

Click here for detailed site information. Copy and paste 13CVCP117K in the search box, click the green search button, then click the Project ID # to see downloadable site documents.

Map Identification Number 6 **THE HENRY APARTMENTS** **Facility Id: 15CVCP120K**
768 DECATUR STREET, BROOKLYN, NY TT−Id: 330A−0000−063
VCP Project Id: 15CVCP120K

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1770 feet to the SE

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11233

Brownfield Program: NYC Voluntary Cleanup Program

Class: Active

Parcel(s): Block 1507 Lot(s) 32

Click here for detailed site information. Copy and paste 15CVCP120K in the search box, click the green search button, then click the Project ID # to see downloadable site documents.

Map Identification Number 7 **192 RALPH AVENUE** **Facility Id: V00669**
192 RALPH AVE, BROOKLYN, NY 11233 TT−Id: 280A−0003−159

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1957 feet to the SW

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

Brownfield Program: Voluntary Cleanup Program

Volunteer: BROOKLYN PROPERTIES 5

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
VOLUNTARY CLEANUP PROGRAM

SITE CODE: V00669
CLASSIFICATION CODE: A REGION: 2 DEC ID: 58001
CLASSIFICATION CODE DESCRIPTION:
Work is underway and not yet complete.

NAME OF SITE: 192 Ralph Avenue
STREET ADDRESS: 192 Ralph Ave TOWN: New York City
CITY: Brooklyn ZIP: 11233 COUNTY: Kings

ESTIMATED SIZE:

SITE TYPE: Dump- Structure- Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:
None reported

CROSS REFERENCES:

IDENTIFIER	SOURCE
224042	HW Site ID

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:

CURRENT OWNER(S):

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

NAME: BROOKLYN PROPERTIES 5, LLC Operator Type: Corporate or Commercial
ADDRESS: 192 RALPH AVE.
BROOKLYN, NY 11233

APPLICANT REQUESTOR(S):

NAME: Brooklyn Properties 5, LLC
c/o Peter S. Rosenbaum
ADDRESS: 323 Fairhaven Boulevard
Woodbury, NY 11797

NAME: Hubbell Mountain, LLC
Omri Minin
ADDRESS: 404 East 79th Street, Apt. 15C
New York, NY 10075-1482

NAME: 188 Ralph, LLC
c/o Peleg Neev
ADDRESS: 161 West 54th Street
New York, NY 10019

DOCUMENT REPOSITORY(S):

NAME: Saratoga Library
L. Taylor
ADDRESS: 8 Thomas S. Boyle St. @ Macon St.
Brooklyn, NY 11233

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:

Location: The site is located in an urban area in the southeastern part of the Bedford Stuyvesant section of Brooklyn. The site occupies 188 through 192 Ralph Avenue and is identified on the New York City Tax Map as Section 6, Block 1678, Lot 53.

Site Features: The main site feature is the existing three story building on the property and an attached one story addition

with a basement at the rear (192 Ralph Avenue). The building structure is 20’ X 80’ occupying an area of approximately 0.037 acres. Current Zoning/Use: The building at the site is zoned mixed Residential and Commercial (R6B) and is currently unoccupied. The surrounding properties are either zoned the same or as Residential 1 and 2 Family (primarily row house structures), which make up the majority of the area property uses. The row house property adjacent to the site building at 590 Macdonough Street has this latter zoning designation, while the adjacent 4 story, 14 unit apartment building to the south at 196 Ralph Avenue has the residential and commercial designation. Past Use of the Site: Dry cleaning operations (wet chemical) were conducted at the site property from approximately 1946 until 1998. From 1998 until 2000 the site was used solely as a "drop shop" dry cleaning operation. The dry cleaning operations took place in the 18 X 20 foot addition at the rear of the building with the equipment located on the first floor. It appears that the site contamination came from releases of process chemicals into the basement area of the one story building addition, which at the time had a dirt floor in the basement allowing migration of contaminants into the underlying soils and groundwater.

Site contamination was discovered in 2002 during an Owner initiated subsurface investigation within the basement area of the building. With the confirmation of waste disposal at the site the property owner entered the Department’s Voluntary Cleanup Program as a Volunteer in 2004. Site Geology and Hydrogeology: The general area geology is composed of outwash sand and gravel deposits. Locally there are highly permeable fine to medium sands with some gravel. There appears to be a confining silt/clay layer of unknown thickness present in the site area around 60 to 70 feet below the ground surface. Groundwater is encountered at 35 to 40 feet below ground surface (~9 feet above sea level). The area groundwater flow is to the south/southeast. A Decision Document for the site was signed on October 18, 2013.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
TETRACHLOROETHYLENE (PCE)	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
tetrachloroethene (PCE)	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Nature and Extent of Contamination: Based upon investigations conducted to date the primary contaminant of concern at the site is the dry cleaning solvent tetrachloroethylene (also known as perchloroethylene, perc or PCE) and to a minor extent the breakdown products of this chemical.

Chemical concentrations are reported in parts per billion (ppb) for water, soil samples are reported in parts per million (ppm) while air samples are reported in micrograms per cubic meter (ug/m3). Soil Contamination: The significant soil contamination at the site is primarily limited to the area under the building footprint. The shallow soils are contaminated with PCE in the range of 10 to 344 ppm. The restricted residential soil cleanup objective (SCO) for PCE is 19 ppm. Groundwater Contamination: Groundwater beneath the building footprint is contaminated with PCE above groundwater standard of 5 ppb. PCE has also migrated from the site area down-gradient to the south southeast under the adjoining sidewalks and streets. PCE contamination in the upper part of the aquifer (~ 40 feet below ground surface) ranges from approximately 80 to 7,100 ppb. Soil Vapor: Soil vapor measurements taken from the five extraction wells in the basement of the building showed PCE concentrations ranged from 678 to 19,000 ug/m3 during the latest monitoring event.

ASSESSMENT OF HEALTH PROBLEMS:

People will not come into contact with contaminated soils since they are located at depth and beneath a building foundation.

Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect 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. A soil vapor extraction system has been installed beneath the on-site building to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the building. The potential for off-site inhalation exposures due to soil vapor intrusion is being investigated as part of a separate investigation.

PROJECT COMPLETIONS:

Operable Unit 01 - Remedial Program

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		10/18/2013	No Further Action

Operable Unit 01A - IRM - Soil Vapor Extraction

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Action		06/11/2008	Actual

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Map Identification Number 8 **FORMER MOTOR FREIGHT GARAGE** **Facility Id: C224202**
834 LEXINGTON AVENUE, BROOKLYN, NY 11221 TT-Id: 320A-0004-272

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2621 feet to the WNW

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

Brownfield Program: Brownfield Cleanup Program

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BROWNFIELD CLEANUP PROGRAM

SITE CODE: C224202
CLASSIFICATION CODE: A REGION: 2 DEC ID: 502540
CLASSIFICATION CODE DESCRIPTION:
Work is underway and not yet complete.

NAME OF SITE: Former Motor Freight Garage
STREET ADDRESS: 834 Lexington Avenue TOWN: New York City
CITY: Brooklyn ZIP: 11221 COUNTY: Kings

ESTIMATED SIZE: 0.229 Acre

SITE TYPE: Dump- Structure- Lagoon- Landfill- Treatment Pond-

INSTITUTIONAL/ENGINEERING CONTROLS:

CONTROL:	IN-PLACE DATE:
Ground Water Use Restriction	10/18/2016
Landuse Restriction	10/18/2016
Site Management Plan	10/18/2016
Environmental Easement	10/18/2016

CROSS REFERENCES:

IDENTIFIER	SOURCE
1408617	Spill No.

SITE OWNER/OPERATOR/REPOSITORY INFORMATION:

CURRENT OWNER(S):

NAME: Lexington Flats LLC Owner Type: Innocent Owner NonRegistry-HazSubs
Joel Schwartz
ADDRESS: 183 Wilson Street - Suite No. 133
Brooklyn, NY 11211

OWNER(S) DURING DISPOSAL:

OPERATOR(S) DURING DISPOSAL:

NAME: Yasakart Corporation
ADDRESS: 280 Bowery
New York, NY 10012

APPLICANT REQUESTOR(S):

NAME: Lexington Flats LLC
Joel Schwartz
ADDRESS: 183 Wilson Street, Suite No. 133
Brooklyn, NY 11211

DOCUMENT REPOSITORY(S):

NAME: Brooklyn Public Library - Macon Branch
ADDRESS: 361 Lewis Avenue at Macon Street
Brooklyn, NY 11233

HAZARDOUS WASTE DISPOSAL PERIOD:

SITE DESCRIPTION:

Location: The Former Motor Freight Garage site is located in the Bedford Stuyvesant section of Brooklyn, New York. The site is listed as Block 1628, Lot 30 and is located on the south side of Lexington Avenue between Broadway and Patchen Avenue. Site Features: The entire lot is occupied with a one-story commercial building and is currently used for storage. The surrounding

properties are occupied by commercial and residential buildings. Current Zoning and Land Use: The site is zoned as R6A (residential) with a C4-4L (commercial) overlay. R6A districts have mandatory Quality Housing bulk regulations which limit apartment building height to 6 or 7 stories. They are designed to be compatible with older buildings and found in medium density neighborhoods. C4-4L districts are located in regional commercial centers outside of the central business districts in more densely built areas. The site is currently used as a warehouse for storage, with infrequent human occupancy. Past Use of the Site: The site was occupied by single family residential homes until 1908. The current existing building was built around 1920 for use as a garage. Two underground hydraulic lifts currently exist on site and the existence of a gasoline tank was noted on historical Sanborn maps. By 1932, the property was combined with adjacent lot 34 to the east at 844 Lexington Ave. In 1965, the site was identified as a motor freight station until 1987, and from 1988 through 2007 it was used as a garage. Site Geology and Hydrogeology: According to USGS geologic maps of the area, bedrock resides at a depth greater than 100 feet below ground surface (bgs). Above bedrock, unconsolidated sediments, sand, gravel, and silty clays reside which were deposited by glacial-fluvial activity. Non-native historic fill layers exist in the upper layers which were historically deposited to extend shoreline areas and improve drainage of low lying areas. During remedial investigation activities, subsurface obstructions, likely boulders and/or glacial till, were encountered at several locations at depths ranging from 3 to 15 feet bgs. Groundwater exists beneath the site at a depth of approximately 42 feet bgs and according to the most recent remedial investigation, groundwater flows northwest.

CONFIRMED HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY
tetrachloroethene (PCE)	UNKNOWN
ZINC	UNKNOWN
Sec-Butylbenzene	UNKNOWN
STYRENE	UNKNOWN
TOLUENE	UNKNOWN
MERCURY	UNKNOWN
BENZO(A)PYRENE	UNKNOWN
1,2,4-TRIMETHYLBENZENE	UNKNOWN
BENZO[K]FLUORANTHENE	UNKNOWN
METHYLENE CHLORIDE	UNKNOWN
indeno(1,2,3-cd)pyrene	UNKNOWN
1,3,5-Trimethylbenzene	UNKNOWN
Isopropylbenzene	UNKNOWN
ETHYLBENZENE	UNKNOWN
BENZ(A)ANTHRACENE	UNKNOWN
TRICHLOROETHENE (TCE)	UNKNOWN
BENZENE	UNKNOWN
XYLENE (MIXED)	UNKNOWN
N-PROPYLBENZENE	UNKNOWN
Chrysene	UNKNOWN
METHYL-TERT-BUTYL ETHER (MTBE)	UNKNOWN
BENZO(B)FLUORANTHENE	UNKNOWN
Butylbenzene	UNKNOWN
NAPHTHALENE	UNKNOWN
LEAD	UNKNOWN

TETRACHLOROETHYLENE (PCE)	UNKNOWN
BENZO(A)ANTHRACENE	UNKNOWN

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Soil - 1,2,4-trimethylbenzene was detected in a drainage basin and at one other location at 9 - 11 feet below ground surface (bgs) up to 58 parts per million (ppm) which marginally exceeds restricted residential soil cleanup objectives (RRSCOs). Other petroleum-related compounds, including ethylbenzene (up to 8.8 ppm) and benzene (up to 0.1 ppm) were found exceeding unrestricted use soil cleanup objectives (UUSCOs) and RRSCOs at 9 - 11 feet bgs and in the drainage sediment. Poly-aromatic hydrocarbons (PAHs) including benzo(a)anthracene up to 20 ppm were also detected at two locations exceeding UUSCOs at depths ranging from 3 - 11 feet bgs. Lead was detected above RRSCOs in one location at a depth of 3 - 5 feet bgs at a concentration of 433 ppm. Data does not indicate any off-site impacts in soil related to this site.
Groundwater - Groundwater was analyzed from 4 monitoring wells throughout the property. Petroleum related compounds including benzene (up to 53 ppb), ethylbenzene (up to 3,200 ppb), 1 ,2,4-trimethylbenzene (up to 2,700 ppb), toluene (up to 11,000 ppb), xylene (up to 5,100 ppb) n-propylbenzene (up to 310 ppb) and naphthalene (up to 670 ppb) were detected above groundwater standards in all on-site wells. MTBE was detected above the 10 ppb guidance value at 550 ppb in one monitoring well (MW1), the most downgradient on-site well. Trichloroethene (TCE) was also detected at 94 ppb (vs. standard of 5 ppb) in MW1 during a 2014 Phase II investigation, but not detected during the BCP remedial investigation (RI), likely because the laboratory reportable limits doubled. Low concentrations of petroleum contaminants above groundwater standards are likely migrating off-site since the monitoring well with the highest petroleum contamination is located approximately 10 feet from the down-gradient property line.
Soil Vapor - Soil vapor was analyzed for VOCs and detected several petroleum-related compounds (including benzene as high as 40.5 ug/m^3) from soil vapor wells ranging from 8 to 14 feet bgs. Tetrachloroethene (PCE) and trichloroethene (TCE) were detected as high as 20.3 ug/m^3 and 6.34 ug/m^3 respectively. Data does not indicate any off-site soil vapor impacts related to this site.

ASSESSMENT OF HEALTH PROBLEMS:

Direct contact with contaminants in soil is unlikely because the entire site is covered with a building. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater 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. The inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern because the site is vacant. Furthermore, environmental sampling indicates soil vapor intrusion is not a concern for off-site buildings.

PROJECT COMPLETIONS:

Operable Unit 01 - Remedial Program

PROJECT	DESCRIPTION	END DATE	STATUS
Remedial Investigation		06/03/2015	Actual
Remedial Design		09/15/2016	Actual

NO SOLID WASTE FACILITIES IDENTIFIED WITHIN 1/2 MILE SEARCH RADIUS

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

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

ACTIVE 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 9 **COMMERCIAL WAREHOUSE** **Spill Number: 1408617** **Close Date:**
834 LEXINGTON AVE BROOKLYN, NY TT−Id: 520A−0303−337

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2618 feet to the WNW

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	KMFORSTE	Contact for more spill info:	CHARLES SOSIK	Contact Person Phone:	(631) 504−6000

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
11/21/2014		UNKNOWN	NO	NO

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

Caller Remarks:

cleanup pending

DEC Investigator Remarks:

9/3/15− DECPiper− left message for Charles sosik. 112

4/4/16 − Remediation to be done under BCP C224202 − K. Forster PM. Spill will remain open until BCP complete.

5/25/16− DEC Piper− Spill transferred to K. Forster as he is handling remediation project C224202.

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.

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

Map Identification Number 10 **FORMER SERVICE STATION −MTBE** **Spill Number: 9805815** **Close Date:**
79 RALPH AVE BROOKLYN, NY TT−Id: 520A−0044−912

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1672 feet to the WNW

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

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	CHRIS BOYLE − OLD GAS SATTION	Spiller Phone:	(917) 861−4229
Notifier Type:	Other	Notifier Name:	BRUCE STRANG	Notifier Phone:	(718) 486−0011
Caller Name:	BRUCE STRANG	Caller Agency:	AREK PETRO	Caller Phone:	(718) 486−0011
DEC Investigator:	JAKOLLEE	Contact for more spill info:	JAN SIENKIEWOCZ/AREK	Contact Person Phone:	(718) 486−0011

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
08/10/1998		EQUIPMENT FAILURE	NO	NO

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

Caller Remarks:

old tanks being removed contamination found

soil being stock piled

DEC Investigator Remarks:

3/17/06 − Nathan − Contacted Chris Persheff, 212−772−7550, he has copy of the (7/18/00) report, Next Step, send letter/STIP to initiate additonal investigation.

7/8/05 − Nathan − File review Environmental Assessment (7/18/00) Four GW wells installed groundwater was not encountered.

2/28/05 − also see 9711144. KST

Transferred Demeo to Rommel.

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL CONTAMINATION OF VOC'S AND SVOC'S FOUND IN WASTE OIL TANK ENDPOINT SAMPLES. VOC'S ALSO ENCOUNTERED WITH REMOVAL OF FORMER 550 GAS TANK BATTERY. SPOKE TO AARON LAPINE FROM BALTEC/DELTA, REQUESTED THAT 4 MONITORING WELLS BE INSTALLED ON SITE TO ASSESS GROUNDWATER.

12/9/03 TJD

02/26/01

Reassigned from Saccacio to Demeo

10/23/01 Sent letter request for additional work to C. Schmidgall @ Aggressive Environmental − 2 new gw MW's, additional soil boring,and sampling.

M.J. Hinton Region 9, on temp assignmnet to R2

11/02/06 Reassigned to Sun. (MS)

6/28/07: Called Chris Persheff @212−772−7550, however he no longer works with company. Secretary referred me to Anar and a message was left on his voicemail on 6/28/07. (JS/MS)

7/31/07: Received email from Christopher Boyle who said he thought spill had been closed after the installation of 4 MW where GW was not encountered in any. He has no further information. Will search for current RP and request for investigation status. (JS/MS)

9/11/07: MS sent C. Boyle additional GW investigation request letter from DEC showing file had not been closed. (JS/MS)

10/17/07: Following email sent to MS from C. Boyle regarding follow−up for 79 Ralph: Monica − We are property manager /owner for property. We want to do anything necessary to comply with DEC requirements. I think this may simply be a case of a situation slipping through cracks inadvertently. I would like chance to forward all existing files to our normal envt'l consultant, Mr. Douglas Reid of Lender Consulting Services. He has successfully helped us in numerous cases in need of DEC compliance and I would like him to oversee process from here on out. Can you give me a short while to get him involved ?

Christopher Boyle Bradford N. Swett Management LLC 1536 Third Avenue New York, NY 10028 (212) 772−7550; Fax (212) 249−0029

Request was granted. (JS/MS)

1/28/08: Received via email on 1/23/08:

Dear Monica − I apologize for delay in getting work plan to you. Things have been a bit more than crazy! We will have something to you soon. Sincerely, Douglas B. Reid Sr. VP, Environmental Services, Environmental Scientist, 1−800−474−6802

4/21/08: (JS/MM)

Dear Michael − We have received authorization and have work scheduled to begin tomorrow, April 22nd. We expect work to take remainder of week. Please call with any questions. Sincerely, Douglas B. Reid, Sr. VP, Environmental Services, Envt'l Scientist; 1−800−474−6802

6/24/08: Received Phase II ESA from Lender Consulting. (JS/MM)

7/3/08: VOC and MTBE contaminants found. SSI necessary. Must first regauge wells to determine GW flow direction. Locations of addt'l MW TBD pending regauged well data. (JS/MM)

08/05/08: Transferred to Kolleeny/Mandac. − JK

08/19/08: Received SIWP from LCS. Under review (JK/MM)

12/03/08: Phase II Site Assessment, Initial and Supplemental Investigation Summary dated 10/22/08 submitted by LCS under review. (JK/KG)

12/22/08: Rec'd email on 12/18/08 from Shawn Mittlefehldt: LCS is contemplating chemical oxidation with quarterly GW sampling for 1 year. Would this be acceptable to DEC? If so, we will request permission from our client to prepare work plan for your review.

Responded: After reviewing data submitted in Supplemental Investigation Summary dated Oct. 22, 2008 by LCS, use of chemical oxidation followed by quarterly GW monitoring would be an acceptable remedial approach at this site. Please prepare remedial action plan with details of chemical oxidation injection plan and follow−up monitoring. RAP should include collection of one round of GW samples from all wells prior to commencing remedial work, as a baseline measurement of contaminant levels. After one year of quarterly GW sampling (or sooner), effectiveness of this remedial approach should be evaluated. If it is not reducing contaminant levels, proposal for alternative approach should be developed. RAP should be submitted to NYSDEC by Feb. 27, 2009. Feel free to contact me if you have questions. (JK/KG)

03/03/09: Sent email to Shawn: Please be advised that RAP for site is now past due. Please submit electronic and hard copy to me as soon as possible. If you are having difficulties meeting Feb. 27, 2009 deadline, please contact me to discuss. Rec'd following email: We have work plan prepared. We are working with endors to obtain better pricing for client. Sorry for any inconvenience, we can submit work plan by end of week. If you would like, copy of draft plan can be submitted for your review and when final is complete I can submit final for your approval if desired. Sincerely, Shawn Mittlefehldt I told him to submit final work plan by 3/6/09. (JK/KG)

03/11/09: Sent email to Shawn reminding him to submit work plan. Rec'd call from Shawn stating that his client has directed him

to do nothing. Work plan will not be submitted. Will need to contact RP. (JK/KG)

03/12/09: Sent letter to Mr. Boyle requiring RAP be submitted by 4/10/09. (JK/KG)

03/23/09: On 3/14/09 rec'd call from Doug Reid and Shawn Mittlefehldt of LCS stating that RAP was prepared but RP, Mr. Boyle, does not have full amount of money to pay for work. He wanted to know if there was any way that State could take over cleanup and Mr. Boyle could contribute to cleanup. He also said LCS has worked with Mr. Boyle for years and this is first time he has not had funding to perform required work. On 3/19/09, I spoke to John Urda for advice on this case. He said a Stipulation Agreement should be sent to RP. If RP is unable to do required work then case will need to be referred to legal. On 3/23/09, I spoke to Doug Reid and informed him that stipulation agreement will be sent to RP. (JK/KG)

03/24/09: Stipulation agreement sent to Mr. Boyle. Deadline is 04/10/09. (JK/KG)

04/21/09: Spoke to Mr. Boyle. He was under impression that DEC did not approve LCS' recommendations for remedial action. I told him we have not recieved RAP, therefore LCS' recommendations have not been reviewed. Proposal LCS gave Mr. Boyle was not financially feasible for him. I suggested that he see if LCS can propose different approach or get quotes from other consultants. He said he will talk to LCS and possibly check with other consultants and call back. (JK/KG)

06/23/09: Left message for Mr. Boyle. (JK/KG)

06/24/09: Rec'd message from Mr. Boyle stating that he is waiting for revised proposal for remediation from LCS. He said Doug Reid of LCS will be contacting DEC soon. Spoke to Mr. Boyle and reminded him that Stipulation Agreement is past due.

Current contact information for Mr. Boyle is: 1536 Third Avenue, 3rd Floor, NY, NY 10028 212−772−7550; bradfordswett@gmail.com (JK/KG)

06/25/09: Stipulation Agreement was resent to Mr. Boyle via email (eDocs). Respondent was changed from Mr. Boyle to Second Bronx/Brooklyn LLC. Signed Stip is due by 7/3/09 or this case may be referred to Office of General Counsel. (JK/KG)

07/06/09: Rec'd call from Doug Reid (LCS). He asked if it would be acceptable to monitor site quarterly for one year in order to assess stability of contaminant plume and allow RP time to accumulate necessary funds to remediate site.

Also rec'd an email from Reid: Dear Kathleen − Thank you for talking with me earlier regarding envt'l status of subject property. As we discussed, my client would like to monitor stability of plume for 1−2 years while they generate revenue to address contamination on−site. Addt'l data would also be used in refining remedial approach. Given previously documented GW flow (or lack thereof) I think it would benefit client as well as State if this approach would be considered. I understand you will be meeting with Jonathan Kolleeny to discuss this when he returns from vacation. If you would like to discuss this approach further, please do not hesitate to call. Sincerely, Douglas B. Reid (JK/KG)

07/14/09: Letter sent to Boyle requiring round of GW samples be collected from all wells. A report summarizing results, with recommendations for further action, is due 9/4/09. Also, if signed Stip is not returned by 7/20/09 this case may be referred to legal dept. (JK/KG)

07/20/09: Rec'd faxed copy of signed Stip. Boyle stated hard copy would be sent in mail today. (JK/KG)

07/27/09: Stipulation agreement executed on 7/22/09. Executed Stip & revised CAP, reflecting recent requirements stated in DEC's letter dated 7/14/09, were sent to Boyle. (JK/KG)

09/15/09: Spoke to Doug Reid. He said wells were sampled and rpt needs to be prepared. He stated rpt has not been prepared due to overwhelming amount of projects/work at LCS. (JK/KG)

11/3/09 Spill case transferred from J. Kolleeny to J.A. Maisonave. − JAM

11/3/09 Reviewed Supplemental GW Monitoring Rpt − Aug. 28, 2009 submitted by LCS, Inc. dated Oct. 20, 2009. All 8 monitoring wells were gauged and sampled on Aug. 19, 2009. VOCs were detected in 4 of 8 wells and ranged from 1,793 ug/L in MW−6 to 11,190 ug/L in MW−2. No SVOC analysis. Well down−gradient (MW−6) and well across street (MW−8) were both ND. Contamination in all wells except MW−2 has decreased since last monitoring event in Sept. 2008. Quarterly GW monitoring will continue as consultant recommends monitored natural attenuation (MNA) as remedy. This rpt is uploaded to eDocs. − JAM

12/7/09 Spoke to Shawn Mittlefehldt and Doug Reid from LCS about latest GW monitoring rpt. I will issue letter requiring Quarterly GW Monitoring to continue. If contaminant levels do not continue to decline, then more aggressive remedial approach will be required. − JAM

12/10/09 Wrote letter to Christopher Boyle. NYSDEC requires:

1. A round of GW samples should be collected immediately from all monitoring wells and analyzed for TAGM 4046 list of petroleum−related VOCs. GW monitoring should then continue on a quarterly basis, and rpts should be submitted after each sampling event along with a site diagram showing well locations and GW flow direction.

2. If next sampling round shows that VOC concentrations have not decreased since Aug. 2009 monitoring event, then Monitored Natural Attenuation is not an adequate remedy, and an alternative remedial strategy should be proposed for NYSDEC review.

Letter uploaded to eDocs. − JAM

4/22/10 Reviewed GW Monitoring Rpt submitted by LCS dated Feb. 26, 2010. On Dec. 16, 2009, LCS sampled monitoring wells MW−1 thru MW−8. Results for wells MW−3, MW−4, MW−7 and MW−8 were below detection limit for VOCs. Total VOC concentrations are as follows:

MW−1 increased from 8,410 ug/L on 8/19/2009 to 10,112 ug/L MW−2 decreased from 11,190 ug/L on 8/19/2009 to 6,531 ug/L MW−5 increased from 11,864 ug/L on 8/19/2009 to 12,795 ug/L MW−6 decreased from 1,793 ug/L on 8/19/2009 to 421 ug/L

I spoke with Doug Reid at LCS today about their recommendation to continue MNA as remedy. I advised Doug that quarterly GW monitoring is required and 1st Qtr 2010 round of sampling is past due. LCS should collect GW samples from all wells immediately and prepare a rpt. If VOC concentrations do not show a decrease in next monitoring event, then LCS must propose a remedial strategy to address GW contamination. GW Monitoring Rpt is uploaded to eDocs.

Next round of groundwater sampling is scheduled for Friday, April 30, 2010. − JAM

10/25/10 Received an email from Mr. Adam Zebrowski stating the following:

Dear Mr. Maisonave: Please review attached proposal and contact Douglas Reid (800−474−6802) with any questions. As this is last quarterly groundwater sampling event, please let us know if further work is required at your earliest convenience. Sincerely, Adam K. Zebrowski, Environmental Analyst, Lender Consulting Services, Inc.

There was no attached proposal to his email. Contact Mr Zebrowski about proposal. − JAM

05/03/11: This spill case transferred from J. Maisonave to J. Kolleeny. − JK

05/05/11: Reviewed GW Monitoring Event Rpts for 10/25/10 and 2/3/11 sampling events, by LCS, dated 2/1/11 and 3/3/11, resp. (in eDocs). GW data show persistent high levels of VOCs in several wells: MW−1 had 3,356 ug/L total VOCs in Oct. 2010 and 1,740 ug/L tVOCs in Feb. 2011; MW−2 had 3,747 ug/L tVOCs in Oct. 2010 and 3,798 ug/L tVOCs in Feb. 2011; MW−5 had 11,390 ug/L tVOCs in Oct. 2010 and 8,321 ug/L tVOCs in Feb. 2011. LCS recommends continued quarterly monitoring, suggesting that contam levels will continue to decrease by natural attenuation, and states that a more aggressive remedial approach does not appear to be warranted at this time. I sent letter (in eDocs) to RP Christopher Boyle (bradfordswett@gmail.com), cc's to Adam Zebrowski & Douglas Reid at LCS, stating that DEC disagrees with this evaluation and that historical GW data suggest that rate of natural attenuation at site is too slow to lead to spill closure in timely manner. In addition, available soil data indicate significant levels of ˆsmear zone˜ soil contam at water table which are likely contributing to persistent GW contam. Most recent dissolved−phase contam levels in wells MW−1, MW−2 and MW−5 warrant active remediation to accelerate downward trend in contam levels and expedite movement of spill toward closure. I asked that they prepare detailed RAP to address petroleum impacts related to spill and submit for DEC review by no later than 6/30/11; failure to comply with deadline will be considered violation of the 7/22/09 Stipulation Agreement. − J. Kolleeny

06/27/11: On 6/24/11, received email from Shawn Mittlefehldt stating: Dear Mr. Kolleeny: Please review attached letter and let me know if this is acceptable to you. Attached letter by LCS (in eDocs), dated 6/27/11, requested extension of 6/30/11 deadling for submission of RAP (established in my letter of 5/5/11) to July 30, 2011. I sent email (in eDocs) to RP Christopher Boyle, cc's to Shawn Mittlefehldt, Adam Zebrowski & Douglas Reid: Dear Mr. Boyle: In my letter to you dated May 5, 2011, I set deadline of June 30, 2011 for submittal of Remedial Action Plan (RAP) to address petroleum contamination at this spill site. On June 24, 2011, I received via email a letter dated June 27, 2011 from your envt'l consultant, LCS Inc., requesting an extension of June 30, 2011 deadline to July 30, 2011. Since July 30, 2011 falls on a Saturday, I will agree to extend deadline for submittal of required RAP to Friday, July 29, 2011. Please be advised that failure to submit RAP by new deadline may result in referral of this case to our Office of General Counsel for initiation of enforcement proceedings. Please feel free to contact me if you have any questions. − J. Kolleeny

07/06/11: Reviewed Groundwater Monitoring Event − April 27, 2011 rpt by Lender Consulting Svcs, Inc., dated 7/6/11 (in eDocs). Rpt presents well gauging data over multiple monitoring events, showing GW flow direction generally to SW, and results of GW sampling on 4/27/11, showing significant dissolved impacts remaining in wells MW−1, MW−2 and MW−5. Well MW−1 had 3,942 ug/L total VOCs, up from 1,740 ug/L in Feb. 2011; well MW−2 had 1,697 ug/L tVOCs, down from 3,798 ug/L in Feb. 2011; well MW−5 had 8,208 ug/L tVOCs, down a little from 8,321 ug/L in Feb. 2011. Well MW−6 had only 3 ug/L tVOCs, down from 118 ug/L in Feb. 2011. Rpt states that next GW monitoring event will be in late July 2011; also states that because DEC's 5/5/11 letter stated that rate of natural attenuation is too slow to lead to spill closure in timely manner and that active remediation is warranted, LCS is currently evaluating possible remedial alternatives and associated costs, in effort to comply with DEC requirements. − JK

07/28/11: On 7/26/11, received RAP dated 7/26/11 by Lender Consulting Svcs via email from Shawn Mittlefehldt. RAP proposed

application of RegenOx and ORC Advanced to subsurface via 7 injection wells to address smear zone soil & GW contamination, with addt'l injections as necessary to reduce contaminant levels; remedial action completion rpt will be prepared after initial event and follow−up quarterly monitoring & rpting will be performed for one year to evaluate effectiveness of treatment. I contacted Shawn and requested revisions, including Site Location Map, injection well construction diagram, and table with recent & historical GW data, to make RAP more stand−alone document. On 7/27/11, received revised RAP with requested addt'l materials (in eDocs). Sent email to Shawn with question: Injection Well construction diagram shows screened interval of 20 ft, from 25−45 ft bg. That seems like a long screened interval for injections; I thought screened intervals for such injections are usually focused a few ft above/below water table. Will long screened interval reduce area of influence of injections (i.e., horizontal extent of penetration into formation)? Is this something you have checked with Regenesis, or if not, can you check into it with them? Or provide some supporting explanation for this choice of screen length, based on field experience or literature on such injections? Shawn sent reply: It was recommended to me that at least 20 ft of screen should be installed for injection wells. Reason for this is to allow access to GW if it were to rise to above level that say only 10 or 15 ft of screen would span. Actual injection application will be completed with well packer which will allow us to isolate particular screened section, inject, rise up to next section, inject, and so on until entire zone has been treated. This was confirmed by 2 separate parties. Please let me know if you have additional questions. On 7/28/11, sent approval letter (in eDocs) to Christopher Boyle (RP), with cc's to Shawn, Adam Zebrowski & Doug Reid of LCS, noting that post−injection quarterly monitoring/rpting should continue until spill closure (not just for one year), that if injections are not effective, addt'l remedial actions will be necessary, that USEPA Underground Injection Control program must be notified in advance of injections, and that RAP must be implemented with 60 days of this approval, or deadline extension must be requested with explanation and round of GW sampling must be done for up−to−date baseline data. − JK

08/05/11: Received email from Shawn Mittlefehldt of LCS: LCS is scheduled to begin installing injection wells on Tuesday August 9th. Also, LCS just recently (a week ago) collected next quarter samples from this site. Will this be acceptable for up−to−date baseline described within your RAP approval letter? Please let me know if you have any questions. I sent email reply: Thanks for notification on fieldwork schedule. Yes, GW samples collected a week ago are acceptable for providing baseline GW data. Please let me know if there are any scheduling changes or problems with fieldwork. − J. Kolleeny

08/22/11: Received email from Shawn Mittlefehldt of LCS: Project update! LCS has finished injection well completion for this project and received approval from EPA on UIC inventory (please see attached [in eDocs]). Injection portion of project is scheduled to begin on Monday August 29th. Please let me know if you have any questions. − J. Kolleeny

12/27/11: Reviewed Injection Well Install'n and Chem Ox Application Rpt by LCS Inc., dated 12/15/11 (in eDocs). Rpt summarizes install'n of injection wells at site and application of RegenOx and ORC Advanced in August 2011. Also reviewed rpt for GW Mon Events − July 27, 2011 and Nov. 17, 2011, by LCS dated 12/15/11 (in eDocs). Rpt presents results of pre−and post−injection GW sampling events at site. Data show well MW−1 had 3,797 ug/L total VOCs in July 2011 (pre−inject) and 776 ug/L tVOCs in Nov. 2011 (post−inject); MW−2 had 1,099 ug/L tVOCs in July 2011 and 610 ug/L in Nov. 2011; MW−5 (historically worst well) had 9,323 ug/L tVOCs in July 2011 and 8,121 ug/L in Nov. 2011. Rpt recommends continued quarterly GW monitoring; next monitoring event scheduled for Feb. 2012. Changed spill priority ranking to P2 because RAP has been implemented and site is in GW monitoring phase. − J. Kolleeny

08/07/12: Reviewed rpt: GW Mon Event − March 21, 2012 by LCS Inc., dated 6/29/12 (in eDocs). Results of March 2012 GW sampling show contaminant rebound in two worst wells: MW−1 had 1,831 ug/L total VOCs (up from 776 ug/L in Nov. 2011), and MW−5 had 11,100 ug/L tVOCs (up from 8,124 ug/L in Nov. 2011); well MW−2, which had 610 ug/L tVOCs in Nov. 2011, was not sampled due to parked car over well. Rpt recommends continued quarterly monitoring, with next event scheduled for June 2012; I agree for now. − J. Kolleeny

04/19/13: Reviewed rpts: GW Mon Event − August 29, 2012 and GW Mon Event − December 19, 2012 by LCS Inc., dated 10/18/12 and 1/10/13, resp. (in eDocs), both received on 1/14/13. Results of Aug. 29, 2012 GW sampling event show well MW−1 had 5,741 ug/L total VOCs (up from 1,831 ug/L in March 2012); well MW−2 had 1,197 ug/L tVOCs (up from 610 ug/L in Nov. 2011; wasn't sampled in March 2012); and well MW−5 had 12,250 ug/L tVOCs (up from 11,100 ug/L in March 2012). Results of Dec. 19, 2012 GW sampling event show well MW−1 had 4,616 ug/L tVOCs (down from 5,741 ug/L in Aug. 2012); well MW−2 had 1,778 ug/L tVOCs (up from 1,197 ug/L in Aug. 2012); and well MW−5 had 7,330 ug/L tVOCs (down from 12,250 ug/L in Aug. 2012). Rpt states that total VOCs in part of plume proximate to former UST area decreased significantly since Aug. 2012 sampling event. LCS recommends that quarterly GW monitoring continue; next sampling event scheduled for week of March 18, 2013. − J. Kolleeny

08/06/13: Reviewed rpt GW Mon Event − March 18, 2013 (First Quarter 2013), dated 4/4/13, by LCS Inc. (in eDocs). Results of 3/18/13 GW sampling event show well MW−1 had 5,804 ug/L total VOCs (up from 4,616 ug/L in Dec. 2012); MW−2 had 2,805 ug/L tVOCs (up from 1,778 ug/L in Dec. 2012); MW−5 had 9,130 ug/L tVOCs (up from 7,330 ug/L in Dec. 2012); off−site well MW−8 had 472 ug/L tVOCs (up from 13 ug/L in Dec. 2012). LCS states that altho VOCs increased since Dec. 2012, Dec. 2012 levels were decrease from Aug. 2012, and that addt'l monitoring is needed to see if this is seasonal effect. Next sampling event scheduled for June 2013. − JK

09/12/13: Reviewed rpt GW Mon Event − June 27, 2013 (Second Quarter 2013), dated 7/17/13, by LCS Inc. (in edocs). Results of 6/27/13 GW sampling event show well MW−1 had 4,286 ug/L total VOCs (down from 5,804 ug/L in March 2013), well MW−2 had 835 ug/L tVOCs (down from 2,805 ug/L in March 2013), well MW−5 had 4,618 ug/L tVOCs (down from 9,130 ug/L in March 2013), off−site well MW−8 had 146 ug/L tVOCs (down from 472 ug/L in March 2013). LCS notes that most recent data show VOC levels have decreased or remained stable since August 2012, and that addt'l monitoring is needed to further evaluate this apparent trend. Next sampling event scheduled for Sept. 2013. − J. Kolleeny

01/27/14: Reviewed rpt GW Mon Event − Sept. 30, 2013 (Third Quarter 2013), dated 12/2/13, by LCS Inc. (in eDocs). Results of 9/30/13 GW sampling event show well MW−1 had 1,211 ug/L total VOCs (down from 4,286 ug/L in June 2013), well MW−2 had 1,570 ug/L tVOCs (up from 835 ug/L in June 2013), well MW−5 had 4,930 ug/L tVOCs (up from 4,618 ug/L in June 2013), off−site well MW−8 had 290 ug/L tVOCs (up from 146 ug/L in June 2013). Rpt states that total VOCs in GW have decreased or stayed consistent since Aug. 2012, and that addt'l monitoring is needed to further evaluate this trend. Next sampling event scheduled for late Dec. 2013. − JK

03/10/14: Reviewed GW Mon Event − Dec. 20, 2013 (4th Quarter of 2013) dated 1/20/14, by LCS, Inc. (in eDocs). Results of 12/20/13 GW sampling event show well MW−1 had 399 ug/L total VOCs (down from 1,211 ug/L in Sept. 2013), well MW−2 had 2,129 ug/L tVOCs (up from 1,570 ug/L in Sept. 2013), well MW−5 had 6,208 ug/L tVOCs (up from 4,930 ug/L in Sept. 2013); off−site well MW−8 had 348 ug/L tVOCs (up from 290 ug/L in Sept. 2013). Rpt states that it appears that tVOCs in GW have decreased or remained consistent since Aug. 2012, and that addt'l monitoring is needed to further evaluate this apparent trend. Rpt states that VOCs have only recently been detected in off−site well MW−8, and that it's not clear if this impact is related to on−site impact. Next sampling event scheduled for late March 2014. − J. Kolleeny

03/11/14: On 3/7/14, received email from Charles Sosik of Envt'l Business Consultants: Jonathan, I wanted to inform you that property was sold and new owners intend to redevelop property. It is our understanding that remedial activity was previously performed and that project is near closure. Please let us know if anything is needed at this point from new owners to close out spill file. Thanks. On 3/11/14, I sent reply: Charles, I'm afraid my appraisal of this project is a little different from your impression that spill is near closure. It's true that remedial action in form of chemical oxidant injections has been performed at site. However, ongoing GW sampling continues to show persistently high levels of VOCs in several wells, which do not

show a clear decreasing trend in contaminant levels. Most recent monitoring rpt for site, dated 1/20/14 and prepared by LCS Inc., shows that well MW−2 had 2,129 ug/L total VOCs when sampled in Dec. 2013, an increase from 1,570 ug/L in Sept. 2013 and from 835 ug/L in June 2013 (this well had 2,805 ug/L total VOCs in March 2013); well MW−6 had 6,208 ug/L total VOCs in Dec. 2013, an increase from 4,930 ug/L in Sept. 2013 and from 4,618 ug/L in June 2013 (MW−6 had 9,130 ug/L total VOCs in March 2013). It seems likely that addt'l remedial actions will be needed to move this spill case toward closure. Please feel free to contact me with any questions about this project. Charles replied: Thanks for getting back to me. That assessment was from LCS so I thought there might have been some consensus. New owners definitely want to proceed with whatever is needed to complete remediation. Let's discuss and scope out a remedial approach. We can then prepare and submit a remedial plan. Thanks. − J. Kolleeny

03/14/14: Spoke with Charles Sosik of Envt'l Business Consultants; I told him I suspect there may be residual soil contam in vadose zone acting as ongoing source of GW contam, and suggested he review available soil data to confirm or deny this. He agreed to do so. − JK

03/27/14: Received email from Charles Sosik of EBC, with attached LCS site plan showing sampling locations and boring logs by LCS (in eDocs with 9/08 date); email stated: Jonathan, see attached boring info from LCS showing PID hits and contamination in soil from 38−48 ft. Based on this I'm inclined to go with an injection only program. Let me know and we will prepare a remedial plan for review and approval. We'd like to get started as soon as possible. Thanks. I sent reply: Charles, Yes, I see boring logs seem to indicate only significant soil impacts are at smear zone. You can go ahead and prepare a remedial plan involving chemical oxidant injections or something along those lines. − J. Kolleeny

04/09/14: On 4/7/14, received email from Charles Sosik of EBC with attached RAP proposing RegenOx/ORC Advanced injections with follow−up GW sampling & reporting. After review, I sent email on 4/9/14: Charles, I've looked over Remedial Action Plan for this site, and I have a number of questions/comments/requests:

1) Rpt proposes install'n of 1−inch diameter injection wells. I am more familiar with consultants using 2−inch wells for chem ox injections. Do you have any experience with use of 1−inch wells for this? I am concerned that with depth to GW being ~42 ft, a lot of back pressure may develop in 1−inch wells during injections, inhibiting amount of chem ox successfully delivered to water table.

2) Rpt section 3.1.1 discusses accessing injection wells after bldg construction and states that wells will have tubing routed back to parking garage, but there is no preceding mention or discussion of bldg or garage. Rpt section 2.0 Site Background (or a newly added section) should discuss planned redevelopment of site in more detail.

3) Rpt section 4.1 states that to monitor effectiveness of injections, GW samples will be collected from 4 new monitoring wells, to be installed down−gradient of source area, but next section 4.2 states: Each of 7 monitoring wells will be sampled... Four vs. 7 monitoring wells discrepancy should be made consistent (I assume that 4 is correct and 7 was a mistake?).

4) Figure 3 − Injection Plan shows proposed locations where new monitoring wells will be installed, and two of wells are shown within bldg outline. Rpt section 4.1 should explain where and how these wells will be installed and accessed.

5) Locations of proposed monitoring wells 14MW3 and 14MW4 shown in Fig. 3 (in sidewalk along Ralph Ave) should be moved about 20−25 ft north along sidewalk (site conditions permitting), to put them more directly down−gradient of most impacted current wells, MW−2 and MW−5.

6) There's an off−site well, MW−8, across Ralph Ave from site (not shown in your site plans). Starting in March 2013, this well went from having virtually no contam to having moderately elevated VOC levels(from 146−472 ug/L total VOCs), indicating some off−site migration of plume. This well should be included in post−injection GW sampling events to evaluate these off−site impacts, at least initially. If 2 rounds of sampling show little or no impacts in this well, it can be omitted from any future sampling events that may be needed.

Please let me know your thoughts about 1−inch versus 2−inch wells for chemical injections, and please revise RAP to address other issues. Feel free to call to discuss further.

Then sent follow−up email with addt'l comments: Charles, it may also be a good idea to adjust locations of some proposed injection wells (or add a few addt'l injection wells) to address area of existing well MW−2, since none of proposed injection wells seem to located in that area. One more comment: RAP's title page gives site address as 75 Ralph Ave; correct address is 79 Ralph Ave (and for some reason, LCS's rpts list address as 79A Ralph Ave). − JK

04/11/14: Received email from Charles Sosik with responses to my 4/9/14 comments: NYC identifies property as 75 Ralph and technically it is 75−83 Ralph but we will change to 79 to be consistent with DEC's reference. Don´t know where A came from either. * Injection well diameter won't affect injection efficiency. It´s more of a function of schreen slot size (open area) and hydraulic properties of aquifer. 42 ft of a liquid column translates to about 18 psi which allows injection to be gravity fed instead of pumping. We have used 1−inch injection wells almost exclusively with no issues. * All of wells need to be installed after basement is excavated and will need to be protected. MWs are located in hallway and can be accessed through a manhole cover. * Will add/revise other sections as requested and get revised version to you today. Later, received revised RAP (in eDocs), proposing application of chelated iron−activated sodium persulfate via 10 injection points to address persistent GW contam. Install'n of injection pts will be coordinated with redevelopment of site and incorporated into planned on−site bldg to allow for addt'l injection events, if needed. To monitor effectiveness of injections, 4 new wells will be installed at site to replace wells that will be destroyed during site development: 2 wells in sidewalk along Ralph Ave, and 2 wells inside planned on−site bldg. New wells, plus existing off−site well MW−8, will be gauged & sampled on quarterly basis (at a minimum), to evaluate GW quality and need for further injections. Project status rpts will be submitted to DEC on quarterly basis. RAP states that EBC will notify USEPA Underground Injection Control program in advance of injections. I sent letter (in eDocs) approving plan to Sol Feder (Blue Group Properties, 70 Taaffe Place, Brooklyn, NY 11205, sol@velocityframers.com), cc to Charles Sosik of EBC. − JK

09/22/15: On 9/21/15, received email from Rob Bennett of Envt'l Business Consultants with attached Site Closure Rpt dated Sept. 2015. After quick review, I sent email on 9/22/15 to Bennett: Mr. Bennett: I´ve reviewed EBC´s Site Closure Rpt for this site, and I´m confused by some things. Section 2.1 of rpt (p. 3) mentions EBC´s April 2014 RAWP which proposed chemical oxidant injections to address dissolved−phase GW impacts and adsorbed soil impacts below water table, but following Section 2.2 (also on p. 3) gives last date of chemical oxidant injections at site as May 2010. Were no injections performed at site subsequent to approved April 2014 RAWP? Also, according to my notes, both April 2014 RAWP and my letter approving that RAWP stated that off−site well MW−8 would be included in quarterly GW sampling events, but site closure report indicates that this well has not been sampled since Sept. 2013. Please clarify these discrepancies. − J. Kolleeny

09/29/15: Received email from Rob Bennett of EBC: We performed injections at site in August 2014. 2,688 pounds of oxidant material was injected over a 1−day period. Also, MW−8 (offsite well) is no longer accessible and we were no longer able to sample GW from this well. I will revise rpt to include this missing information and send to you when complete. Thanks. I sent reply: Mr. Bennett, Thanks for your responses. Can you explain more clearly why off−site well MW−8 is no longer accessible? Does well

still exist? Unlike previous consultant LCS, I think it's likely that dissolved impacts in MW−8 (which showed a moderately increasing trend last few times well was sampled) are related to on−site source. Evaluation of potential off−site impacts is an important factor when considering a spill closure request. Also, is it no longer possible to measure depth to GW in wells and calculate water table elevations to determine current GW flow direction? I would prefer to have this information in a spill closure rpt. Based on June 2015 GW sample results & fluctuating VOC levels seen over several previous sampling rounds in 2014 & 2015, I am not comfortable closing this spill case yet; I will be requesting addt'l GW sampling to confirm that VOCs are trending downward. I would also like to be able to confirm that off−site impacts are minor and attenuating, if at all possible. If you can revise rpt´s text to list 2014 chemical oxidant injection events and quantities, and let me know about reason for well MW−8´s inaccessibility (including this info in revised rpt), I will issue a formal response letter. Other things I noticed: Table 1 in rpt is mislabeled as Table 2, so there are two tables called ˆTable 2,˜ and Table 1 does not include results of a Dec. 2013 GW sampling event. See attached rpt which includes those results; they should be incorporated into EBC´s revised site closure rpt. Bennett sent reply: Okay thanks. I will revise later this week and send it to you. − J. Kolleeny

10/23/15: On 9/30/15, received email from Rob Bennett of EBC with revised Site Closure Rpt, dated Sept. 2015 (in DecDocs). Rpt summarizes site history, states that chem ox injections using sodium persulfate were performed 4 times in 2008, 3 times in 2009, once in 2010, and most recently in Aug. 2014. In discusing GW quality, rpt states that overall, total VOCs have decreased over time in on−site wells, tho rpt notes there's been a spike in contam in wells MW−1, MW−2 & MW−5 in sampling events in late 2014 & early 2015. Rpt states that off−site well MW−8, across Ralph Ave to west of site, is damaged, can no longer be sampled. States that previous consultant LCS concluded that VOCs in MW−8 were not clearly related to on−site plume. GW data table shows that well MW−1 had 3,474 ug/L total VOCs in July 2014 (up from 399 ug/L in Dec. 2013) and had 2,331 ug/L tVOCs in Sept. 2014, had 10,063 ug/L tVOCs in Dec. 2014, had 2,277 ug/L tVOCs in Feb. 2015, and had 1,665 ug/L tVOCs in June 2015. Well MW−2 had 298 ug/L tVOCs in July 2014 (down from 2,129 ug/L in Dec. 2013), and had 536 ug/L tVOCs in Sept. 2014, had 502 ug/L tVOCs in Dec. 2014, had 9,242 ug/L tVOCs in Feb. 2015, had 5,255 ug/L tVOCs in March 2015, and had 2,693 ug/L tVOCs in June 2015. Well MW−5 had 6,294 ug/L tVOCs in July 2014 (up from 6,208 ug/L in Dec. 2013), and had 5,567 ug/L tVOCs in Sept. 2014, had 6,439 ug/L tVOCs in Dec. 2014, had 29,288 ug/L tVOCs in Feb. 2015, had 3,798 ug/L tVOCs in March 2015, and had 98 ug/L tVOCs in June 2015. Wells MW−3, MW−4 & MW−7 never had any significant contam; well MW−6 started with high VOCs in Sept. 2008 (9,497 ug/L tVOCs) but decreased rapidly and recently has had no significant contam. Off−site well MW−8 had 348 ug/L tVOCs when last sampled in Dec. 2013. Rpt notes depth to GW at site is ~40 ft., states that site is in mixed residential/commercial area. Rpt includes exposure assmt, concludes there are no exposure pathways for residual contam to impact public. Based on remedial actions (UST & soil removal, chem ox injections), overall decrease in GW VOCs from initial high levels, and on lack of exposure pathways, rpt recommends spill closure. − J. Kolleeny

10/23/15: After completing review of Sept. 2015 Site Closure Rpt by EBC (in DecDocs), I sent letter (in DecDocs) to RP Sol Feder (sol@velocityframers.com), cc's to Charles Sosik and Rob Bennett of EBC, stating that spill case cannot be closed at this time due to high VOC levels remaining in wells MW−1 & MW−2 and dramatic fluctuations in VOCs in well MW−5. I required one or two additional GW sampling rounds for those 3 wells, asking that results of 1st round be sent to DEC to evaluate need for 2nd addt'l sampling event. − J. Kolleeny

11/13/15: Reviewed letter rpt by EBC dated 10/28/15 (in DecDocs), with GW data for 10/26/15 sampling event. Wells MW−1 and MW−5 were sampled, but MW−2 was damaged/destroyed during install'n of foundation for new on−site building and could not be sampled as requested by DEC. Rpt states that according to previous investigations, depth to GW at site is ~40 ft; rpt does not provide well gauging data for 10/26/15 and apparently wells were not gauged. GW results for 10/26/15 show well MW−1 had 2,249 ug/L total VOCs (up from 1,665 ug/L in June 2015) and well MW−5 had 1,549 ug/L tVOCs (up from 98 ug/L in June 2015). Rpt concludes that altho tVOCs were slightly higher for MW−1 and MW−5 this round, compared with June 2015 results, VOC levels are still well below highest

levels recorded for those wells (MW−1 had 20,630 ug/L tVOCs in April 2008, and MW−5 had 29,288 ug/L tVOCs in Feb. 2015). Based on data, EBC recommends performing another round of sampling (of those two wells) within next two months to confirm decreasing trends. I sent letter (in DecDocs) to RP Sol Feder, cc's to Charles Sosik and Rob Bennet of EBC, approving recommendation to sample wells again, but requiring install'n of a well in sidewalk in presumed down−gradient direction from MW−2, to evaluate potential migration of impacts from area of that well and to help determine current GW flow direction (since 3 wells are needed to define a plane). I asked that new well be installed prior to next round of sampling, and that brief work plan be submitted. − JK

01/07/16: Reviewed GW monitoring rpt for Dec. 2015 by EBC, dated 12/18/15, received via email on that date from Robert Bennett of EBC (rpt in DecDocs). Rpt states that new well MW−2A was installed on 12/10/15 down−gradient of former well MW−2 location, as I had requested, and presents sampling results for three wells, performed 12/16/15. Results show well MW−1 had 5,096 ug/L total VOCs (up from 2,249 ug/L in Oct. 2015), well MW−5 had 7,722 ug/L tVOCs (up from 1,549 ug/L in Oct. 2015, and new well MW−2A had 19,110 ug/L tVOCs (well MW−2 had 2,693 ug/L tVOCs when last sampled in June 2015). Wells were surveyed for TOC els and gauged for depth to water, site plan shows GW contours indicating flow to SW (across Ralph Ave). Rpt states that data show that total VOCs are remaining at relatively low levels at a fraction of highest readings detected at MW−1 in Dec. 2014 and at MW−5 in Feb. 2015; rpt acknowledges that tVOCs were higher than last sampling event, but are lower compared with pre−injection data. Based on remediation performed and GW sampling results, EBC recommends spill closure. On 01/07/16, I sent email to Rob Bennett: Robert, I´ve looked over mon rpt sent on 12/18/15, and I´m baffled that rpt recommends spill closure, considering that new well MW−2A had over 19,000 ug/L total VOCs, and other two wells both showed significant increases in VOCs, with over 5,000 ug/L total VOCs in MW−1 and over 7,700 ug/L total VOCs in MW−5. That´s 2nd increase in a row for those two wells, suggesting contaminant levels are not stable. GW below site is part of Brooklyn−Queens aquifer, which is considered an emergency water resource, so I have to be sure that residual GW impacts are going to steadily decrease before I consider spill closure. In fact, I´m considering whether to require further delineation of impacts in new well MW−2A. I still believe there is likely residual soil contam at site contributing to persistent GW impacts. Was any soil sampling performed during install'n of new well MW−2A, or was a boring log prepared with PID readings? I requested submission of a work plan for well install'n in my 11/13/15 letter, to see if you were intending to sample soil during install'n (and if not, I would request it). However, no work plan was submitted. Also, I had asked that site plans in rpts accurately reflect what´s present on site. Site plan in 12/18/15 rpt again shows outlines of a building on site. You said in November that a bldg foundation had been installed. Has rest of building been completed? Were wells MW−1 and MW−5, shown within bldg footprint, preserved? Site plan also shows a permanent injection well on site, IW−4 ˇ is that well there? Finally, can you let me know why permanent injection wells and new monitoring wells were not incorporated into bldg design as proposed in approved RAP? Please let me know about soil sampling, boring log, building, injection well IW−4, and deviations from approved remedial plan; feel free to give me a call to discuss these issues. − J. Kolleeny

01/13/16: On 1/11/16, received email from Rob Bennett of EBC suggesting phone conversation to discuss issues raised in my 1/7/1 email; I suggested he call on 1/12 or 1/13/16. On 1/13/16, spoke with Bennett. He said there are no permanent injection wells on site, that well IW−4 shown on site plan was an error. He said 1st floor of new bldg has been completed. He sent a boring log for new well MW−2A; log shows no impacts (PID hits) until right above water table, when there were readings up to 180 ppm. (I incorporated boring log into Dec. 2015 rpt, in DecDocs). Rob also mentioned that EBC is considering other remedial options, including a Regenesis product called PlumeStop (liquid activated carbon). I said I still suspect there may be residual soil contam in vadose zone acting as source. I asked if he could obtain any sample data or logs for borings put in by Tyree (and for wells not included in info sent to me by Charles Sosik). I also asked if vapor barrier was installed beneath foundation for on−site bldg. Rob said he would look into these issues. We agreed that I would send a letter requiring another round of GW sampling, and based on results, DEC may require an addt'l well in sidewalk down−gradient of MW−1 and addt'l remedial actions. I sent letter (in DecDocs) to RP Sol Feder (sol@velocityframers.com), cc's to Rob Bennett & Charles Sosik of EBC, stating that

spill cannot be closed yet, noting high VOC levels in new well, and increased and high VOCs in two existing wells. Letter also pointed out that 10 permanent injection wells proposed in RAP were never installed and that RAP also proposed 4 new mon wells to replace wells destroyed by construction, but that there are only 3 wells at site (2 old, 1 new). Letter required continued GW monitoring, stating that results of next sampling event should be used to determine need for addt'l well and for addt'l remedial actions; results should be presented in rpt with appropriate recommendations. − J. Kolleeny

01/13/16: After phone conversation, I sent follow−up email to Rob Bennett of EBC: Robert, it was nice speaking with you today, thanks for sending boring log for new well MW−2A. As we discussed, if you can look into issue of whether or not a vapor barrier/membrane was installed beneath new building (such as it is), I´d appreciate it. Also, I mentioned that soil data Charles Sosik sent me when we were discussing possibility of residual soil contam affecting GW did not include data for all borings. Specifically, documents he sent (attached) did not include boring logs for LCS BH2/MW−2 or for two borings put in by Tyree Brothers, borings B−1 thru B−4 (map doesn´t show a Tyree boring B−1, but shows two borings labeled B−3, so I assume one of those was B−1). If possible, can you look into this and see if you can locate missing boring logs, and/or any soil sample analytical results? − J. Kolleeny

01/22/16: Received email from Rob Bennett of EBC: Jonathan, We´ve confirmed that a vapor barrier was indeed installed. I´m trying to get some documentation of that and will provide it as soon as I get it. I came up short on addt'l borings you requested though. Only boring logs I have in our files are ones you attached to your email. I´ll fish around a bit more to see what I can come up with. Our client or Tyree could have that data, which would be very helpful. Otherwise, we are still planning to return to Site for another round of GW sampling in mid−February. I´ll keep you fully abreast on all matters related moving forward. − JK

01/27/16: Received email from Rob Bennett of EBC: Attached is a contractor´s invoice for installing a vapor barrier at Site. Attached invoice (in DecDocs as brief), dated 1/22/16, indicates contractor installed 2 ml plastic vapor barrier in entire basement. I sent email to Rob: Robert, do you know if vapor barrier is located in area of two remaining on−site wells, MW−1 and MW−5? If so, do you know how wells were accommodated during install'n of vapor barrier? Do wells penetrate barrier? Also, invoice indicates it is a 2−mil vapor barrier, which is very thin; I believe NYS Dept. of Health recommends something like 15 mils to mitigate against potential vapor intrusion. − J. Kolleeny

02/02/16: I sent email to Rob Bennett of EBC: Rob, when I uploaded invoice you sent for vapor barrier into our database, I took a closer look and noticed that contractor described vapor barrier as being ˆ2 ml plastic.˜ Vapor barriers are usually measured in ˆmils˜ (i.e., thousandths of an inch), but unit ˆml˜ listed on invoice is actually abbreviation for milliliters. Can you check into this and confirm that vapor barrier is actually 2 mils in thickness? Or is it possible that contractor meant it was 2 millimeters (mm) thick? (If it is 2 millimeters, that would be about 79 mils thick.) Please let me know. Received email reply from Rob: Jon, contractor said that it was thicker, 2mm plastic that they used. Also, field tech that was there last stated that plastic is very thick, so it must be 2mm (~79 mils). Also, there are openings with excess material around MW1 and MW5 so that they can be sealed prior to being filled in to complete foundation. I will see if I can get any addt'l information for you in meantime but will make sure to take pictures during our next sampling event. I will be scheduling next round of quarterly sampling in next couple of weeks. I´ll keep you informed. I sent reply: Thanks, that makes a little more sense than 2 mils (altho 79 mils seems thicker than most vapor barriers I´m familiar with). If you´re able to get hold of a product specifications sheet, that would confirm it. − J. Kolleeny

03/11/16: Reviewed GW Monitoring Rpt by Envt'l Business Consultants for sampling event on 2/22/16, rpt dated 2/25/16 (in DecDocs). Gauging of three existing wells (MW−1, MW−5 and MW−2A) seems to show GW flow direction to WNW (rather than to SW as in past). GW samples showed well MW−1 had 1,993 ug/L total VOCs (down from 5,096 ug/L in Dec. 2015), well MW−5 had 3,216 ug/L tVOCs

(down from 6,602 ug/L in Dec. 2015), and well MW−2A had 19,843 ug/L tVOCs (up from 19,040 ug/L in Dec. 2015). Rpt concludes that Feb. 2016 data show significant decrease in tVOCS in wells MW−1 & MW−5, and no change in off−site well MW−2A (in sidewalk in front of property). Rpt states that, based on level of remediation completed and significant decrease in tVOCs, EBC would like to reach an agreement with DEC that sets forth conditions and/or final steps that will result in spill closure. On 3/9/16, I received email inquiry from Rob Bennett of EBC, asking for my response to rpt. On 3/11/16, I wrote back: Rob, Based on a quick look at latest GW data, I would say that this site requires addt'l remediation to bring contaminant levels in well MW−2A down to a point where spill can be closed. I would also need to see addt'l monitoring to confirm decrease seen in wells MW−1 and MW−5 in latest sampling round. As I have pointed out, EBC's RAP which I approved for this site was not followed. Permanent ISCO injection wells were not installed and full number of replacement monitoring wells were not installed as proposed. Permanent injection wells would have facilitated addt'l ISCO injection events, which may be needed to address impacts in well MW−2A. Feel free to call to discuss. Rob Bennett sent reply: Jon, Thank you for your response. I concur with your recommendation and will proceed with another monitoring event in next couple months. Please let me know if you have any input or ideas for next sampling event. I will keep you advised of schedule moving forward. I then sent reply: Rob, As for ideas for next sampling event ˇ I don´t have any suggestions. I´m holding off on asking for an off−site delineation well across street from MW−2A because of depth to GW. But if VOCs in MW−2A don´t decrease significantly, some addt'l remediation may be needed to bring down contaminant levels. − JK

08/04/16: Reviewed GW Monitoring Rpt by Envt'l Business Consultants for sampling event on 5/25/16, rpt dated 6/10/16 (in DecDocs). Gauging of three existing wells (MW−1, MW−5 & MW−2A) again shows GW flow direction to WNW (rather than to SW as in past). GW samples showed well MW−1 had 2,003 ug/L total VOCs (up a little from 1,993 ug/L in Feb. 2016), well MW−5 had 2,306 ug/L tVOCs (down from 3,216 ug/L in Feb. 2016), and well MW−2A had 11,712 ug/L tVOCs (down from 19,843 ug/L in Feb. 2016). Rpt states that overall, wells show a decreasing trend in quarterly GW sampling events over past two years; based on remediation performed and decreasing trend, EBC would like to reach agreement with DEC on conditions/final steps leading to spill closure. I called Rob Bennett of EBC, stated that to close spill I need to see tVOC numbers decrease, especially in well MW−2A, and need to see several sampling events in a row with decreases to firmly establish that contam levels are attenuating and to give confidence that they would continue to do so after spill closure. I also stated that I believe addt'l remediation is necessary to bring down tVOCs in MW−2A in a timely fashion, and I repeated that I want to receive an explanation as to why approved RAP was not followed, in that permanent injection wells & replacement monitoring wells were not installed as proposed. Rob said he would speak with his client and follow up on these suggestions, noting they are still considering use of Regenesis product PlumeStop. − J. Kolleeny

10/28/16: Reviewed GW mon rpt by Envt'l Business Consultants for sampling event on 10/6/16, rpt dated 10/18/16 (in DecDocs). Gauging of 3 existing wells (MW−1, MW−5 & MW−2A) again suggests GW flow direction to WNW (rather than to SW as in past). GW data show well MW−1 had 3,940 ug/L total VOCs (up from 2,003 ug/L in May 2016), well MW−5 had 2,552 ug/L tVOCs (up from 2,306 ug/L in May 2016), well MW−2A had 7,591 ug/L tVOCs (down from 11,712 ug/L in May 2016). Rpt concludes that VOCs in well MW−2A are continuing to decrease significantly, and that overall, a decreasing trend has been established in quarterly GW sampling events over past two years. EBC recommends continuing quarterly GW sampling until VOCs decrease to levels suitable for spill closure. I sent email to Rob Bennett of EBC, cc to Sol Feder (RP): Rob, I´m glad that Oct. 2016 GW data show another decrease in contam in well MW−2A, altho with nearly 7,600 ug/L total VOCs, levels remain too high to consider spill closure at present. In addition, VOC levels increased in two other wells at site, with almost 4,000 ug/L tVOCs in well MW−1. Altho VOC levels in wells MW−1 & MW−5 have decreased from historical highs, they remain too high for spill closure and do not show a consistent decreasing trend over last several sampling events. Also, this rpt again does not provide any explanation regarding why approved RAP was not implemented as proposed, in terms of installing permanent ISCO injection wells & a greater number of monitoring wells incorporated into building design. I would still like to receive this explanation. Feel free to contact me if you have any questions. − JK

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
1604167	SERVICE BOX	NW CORNER RALPH AVE & DECATOR AVE	BROOKLYN

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 11 **RESIDENCE** **Spill Number: 0511584** **Close Date: 02/08/2006**
1097 PUTNAM AVE BROOKLYN, NY TT−Id: 520A−0046−095

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 750 feet to the NNW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	RICK SCHERER − UNKNOWN	Spiller Phone:	(718) 919−2963
Notifier Type:	DEC	Notifier Name:	RICK SCHERER	Notifier Phone:	(718) 919−2963
Caller Name:	DWAYNE HARRINGTON	Caller Agency:	EPA HOTLINE	Caller Phone:	(908) 420−4492
DEC Investigator:	rmpiper	Contact for more spill info:	RICK SCHERER (NEIGHBOR)	Contact Person Phone:	(718) 919−2963

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
01/06/2006		TANK FAILURE	YES	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	50.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

HAS NOT BEEN CLEANED UP. UNKNOWN IF IT WENT INTO ANY WATERWAYS. PRODUCT IS IN NEIGHBORS YARD

DEC Investigator Remarks:

Jeff Vought visited the site (2 or 3 family house) and said there was a serious spill problem on the sidewalk & soil/lawn area.
It looks like someone has been laying down speedie dry, but unknown who is doing this work.

Sangesland reviewed the tax records and Property Shark. Property was sold in 2005 and the two tenants moved out. The house is now vancant. Former tenant was traced and she said the building recently had an electrical fire and there was no working heat in the building.

Ownership records show: Anne Marie Ward 1097 Putnam ave Brooklyn, NY no phone number is listed. Various searches for Ms. Ward could not find any contact.

Former tenant of the house said that Ms. Ward has a partner named Javan Higgins. Sangesland traced a Javan Higgins in the phone directory (630 Hancock St 718−452−2756) but this is a phone number for his step−mother and they have not communicated for several years.

1/9/05−Vought−Site visit by Vought. Spill out of vent pipe affected yard in front of 3 story residential building. Approx size of affected soil is 25'x10'. Also present was three empty bags of speedy dry, five trash bags of oil soaked speedy dry, one box for an oil filter and an old rusted pipe. Vought spoke to neighbor at 1095 Putnam Ave and her son in law is caller. She did not see any oil company. Resident at 1099 Putnam also interviewed and she had seen no oil company. Possible causes of spill include tank removal and/or delivery event. Neither adjacent neighbor had any contact information for 1097 Putnam. No residents present at home and no contact information in building. DEC Vought to send out soil contamination letter requiring collection of endpoint samples. 1/11/06− DEC Piper spoke w/ caller notifier Rick Scherer. AS per conversation he was at the house and saw a tanker truck delivering oil. No more than 15 minutes later, another tanker truck pulled up. Within 5 minutes there was a heavy petroleum odor. He went outside to walk the dog and observed oil covering the lawn. Rick stated to the driver that there was a delivery 15 minutes ago and the EPA or someone should be notified. The driver stated that it is ok and that he has stuff to clean it up. Upon return from walk, ~5 min, the driver was gone. He did not record the name of the company(s). A FDNY HazMAt rep later showed up and said since it looks like someone is taking care of it. As of today, the odors have subsided though the cleanup has not continued since 1/6/06. Certified return receipt CSL letter sent to listed owner. 2/8/06− DEC Piper received certified CSL letter. It was unclaimed. Piper performed site visit. There was evidence that someone was cleaning it up. In conversation w/ neighbor, she did not get the name of the company. There was slight odors on the lawn area though no fuel oil was observed. Due to lack of evidence and the fact that someone cleaned it up, the spill is closed.

Map Identification Number 12 **GREENPOINT SAVINGS BANK** **Spill Number: 9711700** **Close Date: 01/20/1998**
1225 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0042−076

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 887 feet to the NE

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

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: SAM SOLA
DEC Investigator: MCTIBBE

Spiller: SM SOLA − PETRO
Notifier Name: GREG HANKINS
Caller Agency: PETRO ASTORIA
Contact for more spill info:

Spiller Phone: (718) 545−4500
Notifier Phone: (718) 545−4500
Caller Phone: (718) 545−4500
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
01/19/1998		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	2.00	GALLONS	2.00	GALLONS	SOIL

Caller Remarks:

customer called for serviceman because of oil smell. tank was filled by petro earlier in day and driver did not report spill to office. cleanup in progress.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE CLEANED BY OIL CO.

Map Identification Number 13 **1016 PUTNAM AVENUE** **Spill Number: 9412373** **Close Date: 12/16/1994**
1016 PUTNAM AVENUE BROOKLYN, NY TT−Id: 520A−0044−910

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1133 feet to the W

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

Source of Spill: PRIVATE DWELLING Spiller: UNKNOWN Spiller Phone:
Notifier Type: Responsible Party Notifier Name: Notifier Phone:
Caller Name: TASHA GRENA Caller Agency: NYCDEP Caller Phone: (718) 595−6777
DEC Investigator: MMMULQUE 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
12/15/1994	12/16/1994	TANK FAILURE	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	SOIL

Caller Remarks:

TANK BURST IN BASEMENT− DESBRIBED AS MANY GALLONS SPILLED. DEP CALLED

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN

Map Identification Number 14 **615 DECATUR ST** **Spill Number: 0006043** **Close Date: 11/22/2005**
615 DECATUR ST BROOKLYN, NY TT−Id: 520A−0046−089

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1202 feet to the SSW

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

Source of Spill: PRIVATE DWELLING Spiller: Spiller Phone:
Notifier Type: Fire Department Notifier Name: JOE IOVINO Notifier Phone: (917) 769−0484
Caller Name: JOE IOVINO Caller Agency: NYC FD HAZ MAT Caller Phone: (917) 769−0484
DEC Investigator: JRSTRANG 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
08/21/2000		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	20.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

tank in basement failed

spill confined in basement fd on scene

leak in being stopped by fd

the homeowner will make contact for a clean up crew

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was M TIBBE

11/22/05 − Close, less than 25 gallons. Spilled confined to basement. JS

Map Identification Number 15 **SPILL NUMBER 9713231** **Spill Number: 9713231** **Close Date: 10/03/2003**

1311−A BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0045−433

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1420 feet to the E

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

Source of Spill:	PRIVATE DWELLING	Spiller:	UNK	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	RICARDO FREYRE	Notifier Phone:	(718) 595−6777
Caller Name:	RICARDO FREYRE	Caller Agency:	NYS DEP	Caller Phone:	(718) 595−6777
DEC Investigator:	RWAUSTIN	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

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Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/26/1998		TANK FAILURE	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:

FUEL TANK IN BUILDING IS LEAKING UNSURE IF TANK IS STILL IN USE TANK IN BASEMENT OF BUILDING

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was AUSTIN 10/3/03 − AUSTIN − SPILL IN BASEMENT − NO OTHER INFO − CLOSED − ORIG. ASSIGNED TO HALE − END

Map Identification Number 16 **1084 BUSHWICK** **Spill Number: 9208672** **Close Date: 10/28/1992**
1084 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0043−401

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1446 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:	Other	Notifier Name:		Notifier Phone:	
Caller Name:	WALTER URBAN	Caller Agency:	BAERENKLAU FUEL CO.	Caller Phone:	(718) 647−4200
DEC Investigator:	KSTANG	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
10/27/1992	10/28/1992	TANK FAILURE	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	SOIL

Caller Remarks:

TANK WEEPING−NO OIL ON FLOOR−TANK DAMP−PROTECTIVE LAYER OF SPEEDI−DRI APPLIED TO FLOOR CUST OF TOWN −NOT NOTIFIED NO CALLBACK

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TANG

Map Identification Number 17 **17 PALMETTO ST** **Spill Number: 9512329** **Close Date: 07/27/1998**
17 PALMETTO ST BROOKLYN, NY TT−Id: 520A−0041−728

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1506 feet to the NW

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

Source of Spill:	PRIVATE DWELLING	Spiller:		Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	NYCFD	Notifier Phone:	
Caller Name:	STANLEY SIEBENVBERG	Caller Agency:	NYC DEP −	Caller Phone:	(718) 495−4648
DEC Investigator:	CAENGELH	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: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
01/02/1996		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	10.00	GALLONS	10.00	GALLONS	SOIL

Caller Remarks:

TANK LEAK − NYCFD ON SCENE − PLUGGING TANK AND APPLYING SPEEDY DRY

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT

Map Identification Number 18 **BACKYARD OF HOUSE** **Spill Number: 0604106** **Close Date: 07/13/2006**
632 MACDONOWGH STREET BROOKLYN, NY TT−Id: 520A−0047−386

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1534 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 632 MAC DONOUGH STREET
Revised zip code: 11233

Source of Spill:	PRIVATE DWELLING	Spiller:	LORI JONES	Spiller Phone:	(718) 569−2838
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	SMSANGES	Contact for more spill info:	LORI JONES	Contact Person Phone:	(718) 569−2838

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
07/13/2006		TANK FAILURE	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:

oil in the homeowners back yard

DEC Investigator Remarks:

Sangesland spoke to Mrs. Jones (homeowner) she said she had a 5 gal fuel can for an old boat standing in her back yard. She wanted it removed. Sangesland told her if the can was empty she could put it out with the trash. If the can had fuel in it, it would need to be disposed of properly. Sangesland gave Mrs. Jones the contact info for Radiac Research (718−963−2233)in Brooklyn. They will take this sort of material for a charge. Sangeland called Stanley Baldwin at City DEP Haz Waste. He said the city DOES NOT pick up this sort of material from homeowners.

Map Identification Number 19 **491 EVERGREEN AVE/BKLYN** **Spill Number: 8906844** **Close Date: 06/20/1995**
491 EVERGREEN AVENUE BROOKLYN, NY TT−Id: 520A−0040−945

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1685 feet to the N

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

Source of Spill: PRIVATE DWELLING | Spiller: PETRO HEAT & POWER CO | Spiller Phone: (718) 545−4500
Notifier Type: Responsible Party | Notifier Name: | Notifier Phone:
Caller Name: MR. BILL VALLEY | Caller Agency: PETRO HEAT & POWER CO INC | Caller Phone: (718) 545−4500
DEC Investigator: FINGER | 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
10/11/1989	06/20/1995	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	35.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SPILL CONTAINED ON CONCRETE BASEMENT FLOOR, CLEAN UP TO BE DONE BY

PETRO HEAT & POWER SPILL TEAM.

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

Map Identification Number 20 **742 HALSEY ST.** **Spill Number: 9401949** **Close Date: 05/10/1994**
742 HALSEY ST BROOKLYN, NY TT−Id: 520A−0044−194

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2026 feet to the WSW

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

Source of Spill: PRIVATE DWELLING | Spiller: | Spiller Phone:
Notifier Type: Other | Notifier Name: | Notifier Phone:
Caller Name: FRANK SACINO | Caller Agency: PETRO OIL | Caller Phone: (718) 545−4500
DEC Investigator: SMMARTIN | 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
05/10/1994	05/10/1994	TANK FAILURE	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	SOIL

Caller Remarks:

CONTAINED ON CONCRATE BASEMENT. SPEEDY DRY USED. BOTTOM TANK DRIPPING WILL REPAIR.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT

Map Identification Number 21 **ENGINE CO. 233/LADD. CO. 176 FDNY −DDC** **Spill Number: 9709795** **Close Date: 04/01/1999**
25 ROCKAWAY AVENUE BROOKLYN, NY TT−Id: 520A−0042−052

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2181 feet to the SE

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	TONY MARINO − NYC		Spiller Phone: (718) 391−1062
Notifier Type:	Other	Notifier Name:	MIKE BYRNE		Notifier Phone: (716) 856−5636
Caller Name:	MIKE BYRNE	Caller Agency:	URS GREINER		Caller Phone: (716) 856−5636
DEC Investigator:	JMKRIMGO	Contact for more spill info:	TONY MARINO		Contact Person Phone: (718) 391−1062

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
11/15/1997		TANK FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	0	GALLONS	0	GALLONS	GROUNDWATER

Caller Remarks:

CALLER JUST RECEIVED ANALYTICAL RESULTS FROM A SITE INDICATING CONTAMINATION POSSIBLY CAUSED FROM A UST. PROBABLE MATERIAL SPILLED IS DIESEL (NO GAS USTs ON THIS SITE}.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD See the ISRP.

Map Identification Number 22 **743 HANCOCK STREET** **Spill Number: 9207660** **Close Date: 10/06/1992**

743 HANCOCK STREET BROOKLYN, NY TT−Id: 520A−0044−190

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2235 feet to the W

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

Source of Spill:	PRIVATE DWELLING	Spiller:		Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:	ED DWYER	Caller Agency:	BAERENKLAU FUEL	Caller Phone:	(718) 647−4200
DEC Investigator:	O'DOWD	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
10/02/1992	10/06/1992	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

CUST. DISCOVERED LEAK−CALLED SVCMN−TANK LEAKING−275GAL A/G BASEMENT− WORKING TO STOP LEAK− 10/02/92 300/PM N/A CUSTOMER HOUSE AND N/A BAERENKLAU CLEANUP ENROUTE

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

Map Identification Number 23 **NYPD 81ST PCT** **Spill Number: 9513317** **Close Date: 05/23/1997**
18 RALPH AVE BROOKLYN, NY TT−Id: 520A−0041−749

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2245 feet to the WNW

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: Other
Notifier Name: IGOR GOLSHTEYN
Notifier Phone: (212) 545−7440
Caller Name: IGOR GOLSHTEYN
Caller Agency: RECON ENVIRON CORP
Caller Phone: (212) 545−7440
DEC Investigator: WEISSMAN
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
01/23/1996		TANK FAILURE	NO	NO

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

Caller Remarks:

in process of removing tank − spill found under dispenser

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

Map Identification Number 24 **119 LINDEN STREET** **Spill Number: 8909454** **Close Date: 12/08/1992**
119 LINDEN STREET BROOKLYN, NY TT−Id: 520A−0040−961

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2577 feet to the NNW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	FAZIO AND SONS OIL CO.	Spiller Phone:	
Notifier Type:	Federal Government	Notifier Name:		Notifier Phone:	
Caller Name:	LIONEL MCKENZIE	Caller Agency:	DEP	Caller Phone:	(212) 566−1235
DEC Investigator:	SIGONA	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
12/30/1989	12/08/1992	TANK FAILURE	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	200.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1080 G TANK FAILURE BASEMENT SPILL ABOVEGROUND TANK HAS LEAK IN THE TOP AND HAS NO VENT PIPE

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

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 25 **SARATOGA SQUARE APTS −NYCHA** **Spill Number: 9801627** **Close Date: 08/16/2002**
930 HALSEY ST BROOKLYN, NY TT−Id: 520A−0046−096

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 543 feet to the SE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	FRANK OCELLO − NYC HOUSING AUTHORITY	Spiller Phone:	(212) 306−3229
Notifier Type:	Responsible Party	Notifier Name:	SEBASTIAN LOREFICE	Notifier Phone:	(212) 306−3229
Caller Name:	SEBASTIAN LOREFICE	Caller Agency:	NEW YORK CITY HOUSING AUT	Caller Phone:	(212) 306−3229
DEC Investigator:	SACCACIO	Contact for more spill info:	FRANK OCELLO	Contact Person Phone:	(212) 306−3229

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
05/08/1998		TANK TEST 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

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	15000	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks:

Tank test failure, will isolate and retest.

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

Map Identification Number 26 **1209 BUSHWICK AVE** **Spill Number: 9913509** **Close Date: 08/03/2005**
1209 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0042−512

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 854 feet to the NE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	SAME	Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:	A LOPEZ	Notifier Phone:	
Caller Name:	JOHN LEDDY	Caller Agency:	PROTEST ENTERPRISES	Caller Phone:	(516) 321−4670
DEC Investigator:	kamalone	Contact for more spill info:	MR CLINKSCALE	Contact Person Phone:	(718) 574−1914

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
02/29/2000		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	3000	Horner EZ Check I or II	0.00	FAIL

Caller Remarks:

TANK TEST FAILURE AT ABOVE LOCATION. LOCATION IS AN APARTMENT

BUILDING. PROPERTY OWNER ADVISED OF TEST RESULTS.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD 6/12/02

Spoke to Michael Corman who plans to purchase this property.

He will fax over information regarding the passing retest of the failed tank.

01/26/04

Reassigned from Rommel to Austin 02/17/04: Reassigned from AUSTIN to KRIMGOLD.

7/05 − Assigned to Maloney as part of the Spill Initiative.

Spill closed − files indicate a passed tank test in 2002.

Map Identification Number 27 **41 HOWARD AV / BKLN** **Spill Number: 8909247** **Close Date: 10/07/1992**
41 HOWARD AVE BROOKLYN, NY TT−Id: 520A−0044−909

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 883 feet to the WNW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ELLA MCQUEEN CORRECTIONAL	Spiller Phone:	(718) 574−2911
Notifier Type:	Tank Tester	Notifier Name:		Notifier Phone:	
Caller Name:	DICK WILBER	Caller Agency:	VALLEY EQUIPMENT	Caller Phone:	(518) 374−5571
DEC Investigator:	BATTISTA	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
12/21/1989	10/07/1992	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	GROUNDWATER

TANK TEST INFORMATION

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

Caller Remarks:

2K TK FAILS PETRO, L R =−O.498 GPH. ISOLATED TANK. NO ACTION

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

Map Identification Number 28 **1070 BRUNSWICK AVE/NY TEL** **Spill Number: 9110108** **Close Date: 04/28/2000**
1070 BRUNSWICK AVE BROOKLYN, NY TT−Id: 520A−0043−390

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1621 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: 1070 BUSHWICK AVE
Revised zip code: 11221

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	NY TEL	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	AL RATH	Caller Agency:	F & N	Caller Phone:	(516) 586−4900
DEC Investigator:	MCTIBBE	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
12/23/1991		TANK TEST FAILURE	NO	NO

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

TANK TEST INFORMATION

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

Caller Remarks:

E I & R

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE SEE FILE

Map Identification Number 29 **PALMETTO** **Spill Number: 9102098** **Close Date: 07/08/1996**
85 PALMETTO STREET NEW YORK CITY, NY TT−Id: 520A−0041−096

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1888 feet to the NNW

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER Spiller: NYCHA Spiller Phone: (212) 306−3142
Notifier Type: Tank Tester Notifier Name: Notifier Phone:
Caller Name: SEBASTIAN LOREFICE Caller Agency: TANK TESTING INC Caller Phone: (718) 789−3770
DEC Investigator: HEALY 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	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
05/22/1991		TANK TEST FAILURE	2−474371	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#4 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
001		Unknown	0.00	UNKNOWN

Caller Remarks:

15K TANK FAILED HORNER EZY CHECK WITH A GROSS LEAK,ACTION UNDETERMINED.

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:

7/8/96: Site investigation by TRC found little evidence of contamination. Tank has been re−tested and passed. Close out. JNH

Map Identification Number 30 **ENGINE CO. 233/LADD. CO. 176 FDNY −DDC** **Spill Number: 0102559** **Close Date: 10/07/2009**
25 ROCKAWAY AVENUE BROOKLYN, NY TT−Id: 520A−0040−034

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2181 feet to the SE

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	CITY OF NEW YORK	Spiller Phone:	
Notifier Type:	Tank Tester	Notifier Name:	LERO	Notifier Phone:	
Caller Name:	MIKE COLLINS	Caller Agency:	FENLEY AND NICHOL	Caller Phone:	(631) 586−4900
DEC Investigator:	AXDORONO	Contact for more spill info:	TONY C	Contact Person Phone:	(516) 938−5476

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
06/07/2001		TANK TEST 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

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	3500	Horner EZ Check I or II	0.00	FAIL

Caller Remarks:

WILL EITHER DIG UP AND REPAIR OR REAPLACE TANK.

DEC Investigator Remarks:

6−24−2005 NFA for motor oil fuel spills was issued in April 1999. This spill occurred later and is handled by Imbdad Islam. AZ

05/30/2007: This spill case transferred to A. Doronova. − AD No file for this case, just a spill report.

06/01/2007: Sent an email to A. Samani (cc: J. Kolleeny; A. Ledins; F. Ashkan; T. Ahmad; B. Morrissey; J. Staten and H. Roberts)asking for the site status update information. Received a response email from A. Samani on the same day. She promised to get back to us with updated data. AD

04/17/2008: Received an email from DDC saying:

Dear Sir or Madam:

I am working on some spills for the NYCDDC. I was going through some spill numbers in the DEC database and saw that you were the lead DEC person for some of the ones on which I am currently working. Can you send to me the NYSDEC Spill Report Form for the following spills?

Spill #

− Site 0109758 − 69th Precinct 0108983 − Brooklyn West 12 0012041 − 63rd Precinct 0102559 − EC 233 / Ladder 176

I would appreciate it if you can email to me pdf files (or some other format would be fine) of the forms. Please let me know if you have any questions.

Thanks again for your time and consideration.

Renee Wong

Renee L. Wong Project Geologist Certified Professional Geologist

Sent the requested spill reports the same day. AD

06/12/2008: Send an email to Ms. Wong of DDC:

Hi Renee,

Thank you for keeping me informed. I am now in a process of reviewing the spill closure reports Roux had submitted to us. I would like to ask you to submit also PDF version of Tank Closure Report for NYPD − 69th Precinct, spill No. 0109758 and a hard copy and PDF version of Tank Closure report for Engine Company 233, spill No. 0102559.

Regarding the 63rd Precinct site: I need Tank Closure Report for closed−in−place UST (hard copy and PDF). As for the workplan, I think the requirements will be standard. Borings at each side of the tank; PID screening; soil sampling (including sampling right above the water table,(if applicable); groundwater grab sampling (if applicable). If you would like me to take a look at the investigation work plan for this site, before you will submit it officially, you can send its finalized copy on my email.

Sincerely,

Ainura Doronova Environmental Engineer Division of Environmental Remediation NYSDEC Region 2

06/02/2009: Received an e−mail from Renee Wong:

Hello Ainura,

How are things going? I was reviewing a couple of spill closure requests that I had sent to you sometime last year and was just following up on their status. Please let me know if these spills are ready for closure or, if not, what still needs to be done for the sites before the spills may be closed. The following are spills for which I still need status information:

− 0109758: 69th Precinct − 0102559: Engine Company 233

Thanks, Renee

06/09/2009: Sent a reply:

Hi Renee,

Here is the status information for the following spills:

− 0109758: 69th Precinct − NFA letter was issued for spill No. 0109758.

− 0102559: Engine Company 233 − On June 12, 2008 DEC requested submission of the additional documentation (PDF and hard copies of UST closure report) for spill No. 0102559. Approval of the Spill Closure Request has been postponed pending submission of the additional data.

Regards,

Ainura Doronova

06/16/2009: Received an e−mail from R. Wong:

Thanks, Ainura.

We will try to get the necessary data for the EC 233 spill and submit it to you for your review.

Regards, Renee

Renee L. Wong Project Geologist Certified Professional Geologist Email: rwong@rouxinc.com Mobile Phone: 631−774−7346

AD

09/30/2009: Received an−email from R. Wong saying:

Hi Ainura,

I got the additional documentation (UST Closure Report, see email below) needed to support the spill closure request for Spill 0102559. I have attached the PDFs here and am putting the hardcopy in the mail to you today. Please let me know if there is anything else that you need in order to close the spill, or if you have any questions.

Thanks! Renee

Renee L. Wong Project Geologist Certified Professional Geologist Email: rwong@rouxinc.com <mailto:rwong@rouxinc.com> Mobile Phone: 631−774−7346 Roux Associates, Inc. 209 Shafter Street Islandia, NY 11749 Tel: 631−232−2600 Fax: 631−232−9898

DL to eDocs. Will review. AD

10/06/2009: Reviewed the report. It states that the spill was issued following a tank test failure of a 3,500−gallon #2 fuel oil UST. This tank was closed−in−place in April 30, 2002 by Empire Environmental Services. Six soil samples were collected from around the tank area and analyzed for VOCs and SVOCs. Four samples were taken along the sides of the tank walls, and two samples were taken directly below the bottom of the tank. The concentrations of VOCs for all six samples were below RSCO levels. Side soil samples indicated some elevated levels of SVOCs, but no elevated levels of Naphtalene were detected in any of the six samples. Two bottom soil samples showed no exeedances in the SVOCs levels. Groundwater at this site is approximately 58 feet bgs. Roux concludes that there is little chance of the SVOC compounds migrating down to groundwater in sufficient concentrations to be a cause for concern and requests closure of this spill case. AD

10/07/2009: Discussed this site with J. Kolleeny of DEC. Based on the data provided, the decision was − to close the case. Issued and sent NFA letter. DL to eDocs. AD

Map Identification Number 31 **TANK ROOM − ENCLOSED TTF** **Spill Number: 0905563** **Close Date: 10/07/2009**
40 GROVE ST BROOKLYN, NY TT−Id: 520A−0265−161

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2194 feet to the NW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	TANK TEST FAILURE	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	JMKRIMGO	Contact for more spill info:	SAME AS ABOVE	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
08/12/2009		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

Tank test failure. Re−pair re−test.

DEC Investigator Remarks:

TTF letter sent to: Mr. Joe Mohan Jonis Realty Co. 6 Grace Ave Great Neck, NY 10021

09/21/09. Joe Mohan called and ask for extention to complete the job. He expects the report be submitted to DEC at October 21, 2009. JK.

10/07/09. J.Krimgold reviewed the letter report submitted by PTC and dated 09/28/09. According to thise report the tank is aboveground encased in concrete, but all piping are exposed aboveground. Tank and pipes were isolated and tested. All components were tight except the vent line. The lone was replaced and the tank system passed the test. No contamination was found during the course of work. Case closed.

Map Identification Number 32 **32 RALPH AV − BKLN** **Spill Number: 8910005** **Close Date: 07/09/2002**

32 RALPH AVENUE BROOKLYN, NY TT−Id: 520A−0040−967

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2245 feet to the WNW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	NYCFD	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:	JOHN	Caller Agency:	PETRO CONSTRUCTION	Caller Phone:	(718) 385−8800
DEC Investigator:	JMKRIMGO	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
01/18/1990		TANK TEST FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIESEL	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:

UNKNOWN TEST METHOD, SYSTEM DID NOT HOLD AIR PRESSURE, WILL EXCAVATE &LOCATE PROBLEM.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD See Spill# 9703371.

Map Identification Number 33 **APARTMENT BLDG.** **Spill Number: 0400812** **Close Date: 04/17/2006**
940−950 GATES AVE BROOKLYN, NY TT−Id: 520A−0044−161

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2582 feet to the WNW

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

Source of Spill: PRIVATE DWELLING
Spiller: SUSAN CAMERATA − WAVECREST MANAGEMENT
Spiller Phone: (718) 463−1200 ext. 2 ext: 230
Notifier Type: Tank Tester
Notifier Name: A. LOPEZ
Notifier Phone: (631) 321−4670
Caller Name: JOHN LEDDY
Caller Agency: PRO− TEST
Caller Phone: (631) 321−4670
DEC Investigator: JXGRECO
Contact for more spill info: STEVEN NORMAN
Contact Person Phone: (917) 337−1757

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
04/23/2004		TANK TEST FAILURE	NO	NO

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

TANK TEST INFORMATION

Tank Number	Tank Size	Tank Test Method	Leak Rate	Gross Leak or Failure
1	10000	Horner EZ Check I or II	0.00	UNKNOWN

Caller Remarks:

Tank Test Failure. Tank is reg. as an above ground tank in a vault and this is incorrect. Tank is underground.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO send TTF ltr

5/28/04 TJD

closure report submitted by Protest. Low−level TAGM exceedances noted in laboratory data. Letter mailed requesting additional information: cause of TTF, any remediation performed, status of tank and remedial work plan.

8/3/05 Spill transferred to Greco as part of Spills Closure Initiative. Greco contacted Pro−Test, they will send info if available. JDG 8/3/05

Pro Test returned call and explained that the building is now owned by a governmental entity and that there are plans to remove the tank and contaminated soil at some point in the future.

The new owner is:

Gp−Uhab Housing Development Fund Corporation 120 Wall Street New York NY 10025

Allen Blitz is the Uhab contact 212−479−3327 Greco called Mr. Blitz and left a message. JDG 8/5/05

11/1/05 Allen Blitz has been replaced Zully Rolan (212−479−3327). Greco faxed info to 212−344−6457 so Zully could assign the correct person.

11/1/05 Jeff Ewing (new property contact)212−479−3315 returned call. ProTest is in the field doing work now. He wil have final report sent to me. JDG

11/2/05 I was contacted by John Leddy of ProTest. ProTest is currently under contract to replace UST with AST, then do soil excavation of contamination. The work will be done during December. JDG

1/04/06 Greco to retain project.

02/27/06: John Leddy of ProTest called to say that they were on−site to pull the tank today and it is apparently a major release (there were holes in the tank). They will be excavating soils tomorrow, and will attempt to excavate clean. A temporary AST has been brought in to service the apartment building at the facility. I explained that if they encounter groundwater prior to getting all the conatamination, they will need to install wells. Mr. Leddy said they would likely be there the remainder of the week. JDG

3/27/06 Received report from ProTest. The report is data only, with a couple of hand sketches. Contacted Mr. Ewing (212−479−3315 or ewing@UHAB.org) and let him know that the report needs to include more detail, as well as some conclusions. Will send requirements to Mr. Ewing via email.

04/13/06: S.Kraszewski called Jeff Ewing to schedule a post−exc site inspection to assess any impacts to the basement based on visual and olfactory evidence. Jeff has contacted the Super, Eugene Flowers (347−706−7089), and has me scheduled to inspect the basement at 1:00PM today.

Arrive on−site at 1:05PM, met with building superintendant Eugene Flowers. He directed me first to the excavation area behind the building, where the former 10K tank was. The area was approximately 20 ft wide by 30 ft long, backfilled with a clean sand/gravel mixture; no visual or olfactory evidence of contamination. I asked him about the pipes, he said they were filled and capped off. He mentioned that about 10−15 years ago, the tank was removed for repairs, including the piping which had leaks. Next, I visited the boiler room, which is only several feet below the excavtion ground level and 30 feet horizontally from the excavtion. No visual or olfactory contamination noticed; a very clean boiler room. It is clear that any residual soil contamination is not impacting the building. (see pictures in Edocs) − SK

4/13/06 Based on data supplied and upon observations of no noticable impacts, this site appears tobe a candidate for NFA. Greco to contact Mr. Ewing to request a final report in support of closure. JDG

4/17/06 Received closure request from Pro Test (UHAB’s contractor). Prepared and sent NFA letter. Letter is in E−DOCs. Spill closed. JDG 4/17/05

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 34 **JEFFERSON AVE. & BROADWAY** **Spill Number: 8702940** **Close Date: 07/13/1987**
JEFFERSON AVE / BROADWAY NEW YORK CITY, NY TT−Id: 520A−0050−112

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 128 feet to the NNW*

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

Source of Spill:	COMMERCIAL VEHICLE	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Police Department	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
07/13/1987	07/13/1987	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	−1.00	UNKNOWN	0.00	UNKNOWN	SOIL
LACQUER THINNER	OTHER	0	UNKNOWN	0	UNKNOWN	SOIL

Caller Remarks:

55 GALLON DRUM LEAKING; COX FROM NYCDEP IS RESPONDING. NYCFD IS ON THE SCENE. CLEANED UP BY NYCFD

DEC Investigator Remarks:

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

Map Identification Number 35 **EXCAVATION** **Spill Number: 1500493** **Close Date: 04/15/2015**
940 HANCOCK ST BROOKLYN, NY TT−Id: 520A−0306−582

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 230 feet to the SSE

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	HRPATEL	Contact for more spill info:	SCOTT SWAN	Contact Person Phone:	(516) 805−3593

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
04/15/2015		UNKNOWN	NO	NO

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

Caller Remarks:

An excavation found contaminated soil near a remote fill. Low level PIDs were detected. No clean up planned.

DEC Investigator Remarks:

04/15/15−Hiralkumar Patel. alternate address: 936−952 Hancock St, 23−41 Saratoga Ave, 873−911 Halsey St

PBS #: 2−474258. as per PBS record, the site has/had following tanks: − one (1) 5,000 gal #2 oil UST, in−service, installed in July 2000 − one (1) 15,000 gal #2 oil UST, removed in June 2000

no other spills found.

12:38 PM:− left message for Scott at LiRo. 12:39 PM:− spoke with Ms. Tkach in remediation unit at Housing Authority. she doesn't know anything about the spill. she will send someone to check the site and will call back.

NYC Housing Authority

property owner 23−02 49th Avenue Long Island City, NY 11101 Attn.: Yelena Tkach Ph. (718) 707−5806 / 5725 email: yelena.tkach@nycha.nyc.gov

2:00 PM:− received call from Scott. he mentioned that NYC DEP is building Bioswales near the site. during excavation of 5 ft by 16 ft section, contractor noted some smelly soil near a remote fill port. Scott checked the soil and noted 3.8 ppm on PID. he did not notice any oil spill. Scott mentioned that DEP has decided not to install Bioswale in this location. 2:07 PM:− spoke with Ms. Tkach and informed her about discussion with Scott. she mentioned that housing authority crew is at the site and noted that the excavation is adjacent to their property. she also mentioned that the oil tank system at the site is not in use for almost 10 years. they screened soil with PID and found 0 ppm.

based on available information, case closed.

Map Identification Number 36 **NYC HOUSING AUTHORITY − NYCHA** **Spill Number: 0004890** **Close Date: 12/02/2005**
930 HALSEY ST BROOKLYN, NY TT−Id: 520A−0044−186

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 543 feet to the SE

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	NYC HOUSING AUTH ‘	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	RAY KAHN	Notifier Phone:	(212) 363−3775
Caller Name:	RAY KAHN	Caller Agency:	ESPL ENVIRONMENTAL	Caller Phone:	(212) 363−3775
DEC Investigator:	SWKRASZE	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
07/24/2000		UNKNOWN	2−474258	NO	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:

caller removed a tank at the above location soil samples were taken and lab results returned today

above limits

DEC Investigator Remarks:

12/01/05: This spill transferred from J.Kolleeny to S.Kraszewski.

Reviewed ISRP prepared by Gannett Flemingin 2003 and submitted May 2005. GF performed 8 soil borings and converted 4 of them into MWs. 7 of the soil samples came from the UST area and the remaining sample from the fill port. Soil samples were taken from all 8 borings and GW samples were taken from the wells. All samples were analyzed for PAHs, SVOCS and VOCs. B−1 was the only soil sample with contamination, however, this sample site is located up−gradient and Easterly from the former UST site: unrelated occurance. No GW contamination in any of the MWs.

GF also included the site assessment results from the tank pull performed by ESPL in 2000. Eight end point samples taken revealed only 5 with contamination above RSCOs. Reevaluation of the site by GF was due to construction of a facility within the vacinity of the UST.

Recommend closure.

Asked Jon for his input: he agrees with closure.

NFA letter written and sent to Brian Clarke at NYCHA. − SK

Map Identification Number 37 **APARTMENT BLDG** **Spill Number: 9514531** **Close Date: 02/13/1996**
839 HALSEY STREET BROOKLYN, NY TT−Id: 520A−0046−117

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 574 feet to the SW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	MR LOEE − APARTMENT BLDG	Spiller Phone:	(516) 351−5401
Notifier Type:	Other	Notifier Name:	DRIVER	Notifier Phone:	(0) −
Caller Name:	LABIN HAVERSTOCK	Caller Agency:	JAMES RIVER CORPORATION	Caller Phone:	(315) 493−5178
DEC Investigator:	LUCE	Contact for more spill info:	MR LOEE	Contact Person Phone:	(516) 351−5401

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
02/13/1996		UNKNOWN	NO	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:

unk qty and unk how it got there in basement of apt bldg

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

Map Identification Number 38 **839 HALSEY STREET** **Spill Number: 9514530** **Close Date: 02/15/1996**

839 HALSEY STREET BROOKLYN, NY TT−Id: 520A−0046−116

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 574 feet to the SW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	TONY RICARDI	Notifier Phone:	
Caller Name:	VINCE CAPUTO	Caller Agency:	ECONOMY FUEL	Caller Phone:	(719) 599−5100
DEC Investigator:	LUCE	Contact for more spill info:	MR LOWEE	Contact Person Phone:	(516) 351−5400

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
02/13/1996		UNKNOWN	NO	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:

UNKNOWN HOW THE SPILL OCCURRED THE CALLER WAS VERY VAGUE ON HOW THE SPILL OCCURRED.CREW IS ON THE WAY TO CLEAN UP THE SPILL.

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

Map Identification Number 39 **CON ED MANHOLE #65849** **Spill Number: 0400614** **Close Date: 04/21/2004**
SOUTH SIDE MACON/SARATOGA BROOKLYN, NY TT−Id: 520A−0042−701

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 663 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: MACON ST / SARATOGA AV
Revised zip code: 11233

Source of Spill: UNKNOWN
Spiller: ERT DESK − CON ED MANHOLE #65849
Spiller Phone: (212) 580−8383
Notifier Type: Responsible Party
Notifier Name: LARRY COSTA
Notifier Phone: (212) 580−6763
Caller Name: LARRY COSTA
Caller Agency: CON ED
Caller Phone: (212) 580−6763
DEC Investigator: SKARAKHA
Contact for more spill info: ERT DESK
Contact Person Phone: (212) 580−8383

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
04/19/2004		UNKNOWN	NO	NO

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

Caller Remarks:

2PINTS ON 300 GALLONS OF WATER: IN PROCESS OF CLEANING UP WHEN FOUND, NO SMOKE OR FIRE,NO SEWERS OR WATERWAYS; IN REFERENCE 0400597 SPILL # :

DEC Investigator Remarks:

THis is update for spill # 0400597. Close out. (JHO)

Map Identification Number 40 **MANHOLE TM569** **Spill Number: 9901327** **Close Date: 05/18/1999**
HANCOCK CTR/BUSHWOOD AVE BROOKLYN, NY TT−Id: 520A−0043−046

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 754 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: HANCOCK ST / BUSHWICK AV
Revised zip code: 12221

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	STEPHEN CRIBBIN	Notifier Phone:	(212) 580−6763
Caller Name:	STEPHEN CRIBBIN	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	STEPHEN CRIBBIN	Contact Person Phone:	(212) 580−6763

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
05/04/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SPILL IS CONTAINED − SAMPLE TAKEN − 34 PPM DATED 1956 (HISTORICAL DATA) CON ED #124637

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL DEC inspector notes:

34 ppm dated 1956

Con ed e2mis notes:

3 gallons of oil on 200 gallons water. He has pressure tested unit − okay. Has stated the oil smells like motor oil.
Historical records indicate transf as 34 ppm dated 1956. Cannot take sample from unit. No sewers or waterways affected.

I.D. Analysis: TM 569− Analysis indicates the sample is similar to lubricating fluid/oil. results < 1.00ppm Cleanup completed as per C.Lugo, flush operator as of 2115 hrs 5/6/99.

Map Identification Number 41 **MANHOLE 569** **Spill Number: 9810073** **Close Date: 11/07/2002**
HANCOCK ST & BUSHWICK AV BROOKLYN, NY TT−Id: 520A−0039−550

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 754 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: HANCOCK ST / BUSHWICK AV
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	MR PACE	Notifier Phone:	
Caller Name:	BILL MURPHY	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	CAENGELH	Contact for more spill info:	BILL MURPHY	Contact Person Phone:	(212) 580−6763

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
11/10/1998		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1 qt of product − sample taken for pcb content − clean up pending results − 300 gals of water in manhole − no con ed spill #

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT E2MIS 121179

11−10−98 09:45HRS C. LUGO REPORTS, FOUND 1 QT OF UNKNOWN OIL ON 300 GAL OF WATER IN TM 569. HOLE IS CONTAINED & NO SEWERS OR WATERWAYS WERE AFFECTED. THERE IS NO SUMP IN HOLE . SPILL WAS DISCOVERED WHEN FLUSH WAS CALLED TO DO FLUSH IN HOLE. 1 LIQUID SAMPLE WAS TAKEN ON A 4−6HR TURNAROUND. CLEANUP WILL COMMENCE WHEN SAMPLE COMES BACK FROM CHEM LAB. & ENV. STOP TAG # 07002 WAS PLACED. DOES NOT KNOW WHAT OLD PPM IN UNIT IS. AT THIS TIME WILL TRY TO REACH OUT TO NETWORK TO SEE IF THEY CAN GET CREW TO LOC TO PRESSURE TEST. ALSO WILL FIND OUT IF OVER 50 TANKER CAN PUMP HOLE FIRST. S.PACE 49874

UPDATE *** 11:15 C. FERNANDEZ CALLED NETWORK AND INFORMED THEM TO GO TO LOC & PRESSURE TEST, ALSO TANKER WILL BE HEADED TO LOC TO UP WITH NETWORK, . S.PACE 49874.

UPDATE**** 13:00 EPA # NYP004028338. S.PACE 49874. TREATED AS 50−499.

UPDATE: 11/10/98 − 1330 D. LEE − EQUIP. GP., REPORTS TRANSFORMER HOLDS PRESSURE. RECORDS SHOW TRANSFORMER OIL TO BE 34 PPM. TJ − 50495

========== update 11/11/98 0520hrs. ========== sam rosenking reports could not complete cleanup with slix due to oil still on walls.removed all debris & left tag in place. d.herbst 27461
********** UPDATE: LAB RESULTS
<1.0PPM. 11/10/98 − 2345. LAB SEQ# 98−12392. J.A.P−56037**

12/11/98 18:00 −− RCVD CALL FROM LISA LUKSHIDES OF E.R.T. REGARDING STATUS OF THIS CLEANUP. AS PER TINO FERNANDEZ OF BROOKLYN ENV. OPS., JOB WAS SCHEDULED FOR TODAY BUT CLEANUP NOT COMPLETED DUE TO A CONTAMINATED FLUSH TRUCK. JOB RESCHEDULED FOR TUE. 12/15 (CAN ONLY BE DONE ON TUE. OR FRI. DUE TO PARKING RESTRICTIONS). *** W.W. #17344 ***

UPDATE: 12/15/98−17:30HRS−W. TUDY−EMP#74933−FLUSH OPS. REPORTS SITE CLEANED−UP AND COMPLETED. ENV TAG#07002 REMOVED

Map Identification Number 42 **MANHOLE #2340** **Spill Number: 0005303** **Close Date: 11/13/2001**
BUSHWICK AVE & HANCOCK ST BROOKLYN, NY TT−Id: 520A−0037−224

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 754 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: BUSHWICK AVE / HANCOCK ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	MR DELLACROSSE	Notifier Phone:	(212) 580−6763
Caller Name:	JIMMIE FOX	Caller Agency:	CON ED	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	JIMMIE FOX	Contact Person Phone:	(212) 580−6763

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
08/03/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1 pt unk oil in manhole − sample taken clean up pending lab results con ed #132682

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL

Map Identification Number 43 **TM 569** **Spill Number: 0005298** **Close Date: 11/05/2001**
HANCOCK ST/BUSHWICK AV BROOKLYN, NY TT−Id: 520A−0038−721

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 754 feet to the NE

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	DELLACROSSE	Notifier Phone:	
Caller Name:	JIMMY FOX	Caller Agency:	CON ED	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	JIMMY FOX	Contact Person Phone:	(212) 580−6763

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
08/03/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SAMPLE TAKEN, CLEAN UP PENDING. CON ED 132681

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL E2MIS NOTES:

8/3/2000: SPLICER NETWORK ON LOCATION TO REPAIR AN OPEN SWITCH REPORTS FINDING APPROXIMATELY 1/2 PINT OF AN UNKNOWN OIL ON 1150 GALLONS OF WATER. APPEARS CONTAINED TO STRUCTURE. NO SEWERS OR WATERWAYS APPEAR AFFECTED. TRANSFORMER PRESSURE TESTED OK. RECORDS INDICATE 34 PPM PCB'S, CLEANUP PENDING TEST RESULTS.

21:05 HRS. CHEM. LAB. RESULTS RECEIVED PCB <1.00 PPM.

CLEANUP COMPLETED ON 9/8/20011910 HRS. NO SUMP IN STRUCTURE. CLEANUP COMPLETED BY DOUBLE WASHING THE STRUCTURE WITH SLIX. LIQUID WASTE REMOVED BY VACTOR. NO LEAKING COMPANY EQUIPMENT. INCIDENT IS CLOSED.

ARS

Map Identification Number 44 **TM569** **Spill Number: 0003751** **Close Date: 09/27/2001**
HANCOCK STREET/BUSHWORK BROOKLYN, NY TT−Id: 520A−0042−574

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 754 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: HANCOCK ST / BUSHWICK AVE
Revised zip code: 11221

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	MISS NEVILLE	Notifier Phone:	(212) 580−6763
Caller Name:	MARK SCHLEGEL	Caller Agency:	CON ED	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	MARK SCHLEGEL	Contact Person Phone:	(212) 580−6763

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
06/27/2000		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:

SCHEEN ON THE WATER − 5 GALLONS WATER −−−CASE 132061

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis Notes:

6/27/00 Undiaperable sheen of unknown oil on 5gal water in TM569. May be motor oil. Pressure tested unit and found OK. Oil level is also normal. Sample taken and returned <1ppm PCB.

6/30/00 Cleanup completed by double washing with slix. Liquid wastes removed by tanker. Solids removed by vactor. No leaking equipment. No sump. (KMF 10/9/01)

Map Identification Number 45 **MANHOLE 63289** **Spill Number: 9909985** **Close Date: 03/29/2002**
ELDERT ST/BROADWAY BROOKLYN, NY TT−Id: 520A−0039−734

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 949 feet to the ESE

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	MR WAYNEWRIGHT	Notifier Phone:	(212) 580−6763
Caller Name:	MARK SCHLAGEL	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	COMENALE	Contact for more spill info:	MARK SCHLAGEL	Contact Person Phone:	(212) 580−6763

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
11/17/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

OIL ON DIRT ON BOTTOM OF MANHOLE. CLEAN UP PENDING. CON ED 129−025

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

Map Identification Number 46 **VS 4630** **Spill Number: 0413211** **Close Date: 06/22/2005**
HOWARD AV & PUTNAM AV BROOKLYN, NY TT−Id: 520A−0039−237

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 993 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: HOWARD AV / PUTNAM AV
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:	MR. HOGAN	Notifier Phone:	(212) 580−8383
Caller Name:	MARK SCHLEGEL	Caller Agency:	CONED	Caller Phone:	(212) 580−8383
DEC Investigator:	GDBREEN	Contact for more spill info:	ERT DESK	Contact Person Phone:	(212) 580−8383

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
03/18/2005		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

10 oz. unknown oil − on dirt. Cleanup pending crew availability.

Lab results = 4ppm Found an earthen sump Ref. 157684

DEC Investigator Remarks:

e2mis no. 157684:

3/18/05 − 1045 S. ROJAS − 88456 − O.S. − U.G., WHILE CUTTING TRANSF ADRIFT IN VS4630 (FDR 5B31) REPORTS FINDING APPROX 10 OZ OF AN UNKNOWN OIL MIXED WITH SOIL ON TOP OF THE TRANSFORMER & ALONG THE SIDES OF THE TRANSFORMER. THERE IS A BQE CREW ON LOCATION THAT WILL PRESSURE TEST THE TRANSFORMER. THE HISTORICAL PCB COUNT OF THIS UNIT IS 3 PPM DTD 12/17/04. PCB SAMPLE TAKEN. CLEANUP PENDING LAB RESULT.

UPDATE: 3/18/05 − 1235 T. HAERING − O.S. − BQE, REPORTS UNIT PRESSURE TESTED AND HELD PRESSURE.

UPDATE: 3/18/05 − 1530 G. PALLADINO − O.S. − ENV. OPS., REPORTS PCB SAMPLE TAKEN FROM TRANSFORMER. CHAIN OF CUSTODY FORM # DD03171 FILLED OUT AND MARKED 'E' PRIORITY.

UPDATE 18−MAR−2005 20:05 HRS. LSN−05−02493−001 MATRIX : OIL GRAB 57 PPM

UPDATE 18−MAR−2005 21:06 HRS. RECIVIED EPA# NYP−004129672.

3/18/2005 22:28 HRS. −− LAB SEQ # 05−02504−001, PCB RESULTS FROM TRANSFORMER: 4 PPM. (PRIOR RESULTS OF 57 PPM APPEAR TO BE A SAMPLE FROM THE VAULT).

UPDATE 19−MAR−2005 02:22 HRS. ENVIR. OPER MECH−A K.HUFFORD EMP# 74294 REPORTS: DUE TO DISCOVERY OF A EARTHEN SUMP INCIDENT# 157684 WILL NOT BE MEETING THE 24hr CLOCK

UPDATE 19−MAR−2005 03:40 HRS. ENVIR. OPER. MECH−A K.HUFFORD EMP# 74294 REPORTS: ASTORIA > 50 TANKER REMOVED 80 GALS OF LIQUID FROM STRUCTURE. CREW THEN DBL WASHED STRUCTURE WILL BULLDOG. TWO BARRELS OF DEBRIS, PPE & ZONE MATERIAL (NO LEAD) WAS GENERATED AND TRANSPORTED TO 3RD AVE YARD UNDER THE ONE TRIP RULE. ENVIR. TAG # 44843 WILL REMAIN IN PLACE PENDING UNIT REMOVAL. EARTHEN SUMP REPORTED EARLIER WAS SEALED.

SUMP RESULTS RECEIVED 3/19/05 − 1715. 05−02513. BOTH RESULTS ARE <1.0 PPM.

UPDATE 20−MAR−2005 21:05 HRS. ENVIR. OPER. O.S. B.BROWN EMP# 00423 REPORTS: ALL−STATE POWER VAC. PERFORMED CLEANUP. DBL. WASHED STRUCTURE WITH 10GAL OF CITRUS CLEAN. ASTORIA TANKER REMOVED 100 GALS OF LIQUID FROM STRUCTURE. 5 DRUMS OF SOLID DEBRIS PPE & ZONE MATERIAL GENERATED AND TRANSPORTED TO ASTORIA FOR DISPOSAL. SUMP PREVIOUSLY SEALED. TAG# 44843 REMOVED. CLEANUP COMPLETE 100%.

UPDATE 3/21/05 0400 HRS PER FDR REP C. MONTANA THE UNIT HAS BEEN REPLACED

Map Identification Number 47 **SERVICE BOX** **Spill Number: 0001063** **Close Date: 12/28/2001**
71 WIERFELD ST BROOKLYN, NY TT−Id: 520A−0043−252

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1004 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 71 WEIRFIELD ST
Revised zip code: 11221

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR DONATONE	Notifier Phone:	(212) 580−6763
Caller Name:	BILL MURPHY	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	BILL MURPHY	Contact Person Phone:	(212) 580−6763

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
04/26/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

on 500gals of water − cleanup pending test results ref#131051

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis #131051 Notes:

4−26−00 1245hrs 1gal unknown oil on 5gal water in SB 47382. No oil filled equipment in hole. 1 sample taken.

4−29−00 LSN 00−04015 <1ppm PCB

5−15−00 1030hrs Cleanup completed by double washing with slix. Liquid wate removed by tanker, solids by vactor. No sump.

Map Identification Number 48 **MANHOLE #28722** **Spill Number: 9812674** **Close Date: 10/17/2002**
MACON ST & HOWARD BROOKLYN, NY TT−Id: 520A−0042−995

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1107 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: MACON ST / HOWARD AV
Revised zip code: 11233

Source of Spill:	UNKNOWN	Spiller:	CALLER − CON ED	Spiller Phone:	(212) 580−6763
Notifier Type:	Affected Persons	Notifier Name:	MR. REIDY	Notifier Phone:	(212) 580−6763
Caller Name:	RICHARD ROACH	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	CAENGELH	Contact for more spill info:	RICHARD ROACH	Contact Person Phone:	(212) 580−6764

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
01/14/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SEWER

Caller Remarks:

3 GAL UNKNOWN OIL IN 1000 GALLONS OF WATER − HAS BEEN SENT OUT FOR TESTING − CON ED 122434

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT e2mis no. 122−434:

14−JAN−1999 FEILD OP WHITAKER REPORTS FOUND 3 GALLONS UNKNOWN OIL ON 1000 GAL OF WATER IN MH28722 WHILE SHOOTING FAULT, IT IS CONTAINED AND NO SEWERS OR WATERWAYS AFFECTED . SAMPLE TAKEN AND TAG HUNG 4 TO 6 HR TURNAROUND ON SAMPLE.

UPDATE: 1/15/99−09:45HRS−LAB SEQ#99−00441−RESULTS 4PPM.

UPDATE 1−16−99 02:00HRS TANKER TRUCK FROZE UP IN THE MIDDLE OF CLEANUP. CREWS WILL BE BREAKING DOWN & WILL FOLLOWUP.

UPDATE 1−17−99 11:00HRS CALLED D.E.P TO REPORT WATER LEAK, AND SPOKE TO WOMEN BY THE NAME OF KAREN. SHE SAID THAT SHE WILL LOG IT AND CANT PROMISE THAT ANY CREW WILL BE THERE TONIGHT.

UPDATE 1−18−99 01:25HRS FLUSH CLEANED HOLE AGAIN , AND TANKER FILLED UP. FOD COMPLETED TAGGING . AND LEFT ENV. STOP TAG IN PLACE. HOLE IS MAKING WATER AT VERY QUICK RATE.

UPDATE: 1/20/99 20:40HRS−AS PER TINO−FLUSH OPS−PUMPED M/H DOWN WITH 3 TANKERS−DEP ON LOCATION−DEP FOUND WATER LEAK F/O 784 MACON STREET−LEAK SHOULD BE REPAIRED WITHIN 24 HOURS AND CLEANUP PENDING REPAIRS.

UPDATE: 1/21/99 − 0830 SPOKE WITH SUSAN OF D.E.P. AT 699−9811 REGARDING AMOUNT OF TIME GIVEN CUSTOMER TO HAVE WATER LEAK REPAIRED BY PLUMBER. I WAS TOLD THEY GET 72 HOURS FOR REPAIR. I THEN CALLED THE SHIFT MANAGER FOR THE LOCAL D.E.P. YARD AT 389−4451 TO SEE IF I COULD ARRANGE A MEET WITH ONE OF HIS CREWS FOR 6 P.M. SAT. 1/23/99. HE TOLD ME THAT THE 72 HOURS DOES NOT INCLUDE WEEKENDS AND THAT THE EARLIEST HE COULD SEND AN INSPECTOR THERE WOULD BE MON. 1/25/99 AT 6 P.M. AT THAT POINT IF THE INSPECTOR FINDS NONCOMPLIANCE BY THE CUSTOMER, A CREW IS SENT THE FOLLOWING DAY TO DIG UP THE STREET AND CUT OFF THE CUSTOMER.

UPDATE: 1/26/99 − 1800 J. DEKANCHUK − O.S. − ENV. OPS., REPORTS 3 TANKERS FILLED UP AT THIS LOCATION AND STRUCTURES CONTINUE TO FILL UP WITH WATER.

UPDATE: 1/27/99 − 0700 DEP APPRISED OF SITUATION AND WILL SEND INSPECTOR TO LOCATION AS SOON AS POSSIBLE.

UPDATE: 1/28/99 − 0630 CALLED DEP, SPOKE TO MR. GILL. I WAS TOLD THAT THE INSPECTOR THAT WENT OUT YESTERDAY CHECKED THE WORK THAT WAS DONE IN FRONT OF 784 MACON STREET AND FOUND IT COMPLETED. I TOLD MR. GILL THAT THERE IS EVIDENTLY ANOTHER BREAK SOMEWHERE IN THAT AREA BECAUSE THE STUCTURES CONTINUE TO FILL UP WITH WATER. HE TOLD ME THAT HE WOULD SEND A TEAM OUT THERE TO FIND THE SECOND BREAK AND THAT WE WERE NOT REQUIRED TO BE THERE.

UPDATE: 1/28/99 − 0730 I RECEIVED A PHONE CALL FROM ED JENKINS, SHIFT SUPERVISOR FOR THE DEP. HE TOLD ME WE WOULD NEED TO MEET WITH HIM WITH A TANKER. I TOLD HIM THE TANKERS WERE SENT OUT TO OTHER FEEDER JOBS. HE THEN TOLD ME HE WOULD ATTEMPT TO FIND SOMETHING OUT THERE WITHOUT US.

UPDATE: 1/28/99 − 0830 C. FERNANDEZ − O.S. − ENV. OPS. DECIDED HE WOULD TAKE A TEAM AND 12 VOLT PUMP TO LOCATION TO PUMP OUT 2 NON−OIL SERVICE BOXES ON EITHER SIDE OF THE TROUBLE HOLE TO DETERMINE WHERE THE WATER WAS COMING FROM. MR. JENKINS WILL MEET HIM AT LOCATION.

UPDATE: 1/28/99 − 1200 C. FERNANDEZ − O.S. − ENV. OPS., REPORTS THAT MR. JENKINS DETERMINED WHERE THE WATER WAS COMING FROM AND WILL SHUT OFF THE WATER MAIN FEEDING THE AREA TOMORROW MORNING. THE CUSTOMERS WILL BE ALERTED OF THIS. TWO TANKERS WILL MEET US AND THE DEP TOMORROW MORNING.

UPDATE :02−24−1999 1400 CLEAN UP COMPLETE WITH SLIX BY WALKER FROM FLUSH DEPT TAG REMOVED. INCIDENT IS CLOSED.

Map Identification Number 49 **SB #53417** **Spill Number: 0001472** **Close Date: 09/21/2001**
32A WOODBINE ST BROOKLYN, NY TT−Id: 520A−0044−200

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (2)
Approximate distance from property: 1171 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:	Affected Persons	Notifier Name:	MR DONATON	Notifier Phone:	(212) 580−6763
Caller Name:	MARK SCHLAGEL	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	MARK SCHLAGEL	Contact Person Phone:	(212) 580−6763

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
05/05/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1 PINT OF ABOVE MATERIAL DISCOVERED AT ABOVE LOCATION. SAMPLE TAKEN AND CLEANUP IS PENDING LAB RESULTS. CON ED # 131231.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis #131231 Notes:

5−5−00 1pint unknown oil on 130gal water in service box. Sample taken returned <1ppm PCB. CLeanup completed by double washing with slix. Liquids removed by tanker, solids by vactor. No leaking equipment. No sump.

Map Identification Number 50 **SARATOGA AVE & DECATUR ST** **Spill Number: 9309456** **Close Date: 11/04/1993**
SARATOGA AVE & DECATUR ST BROOKLYN, NY TT−Id: 520A−0039−385

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1198 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: SARATOGA AVE / DECATUR ST
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	TRICARICO CO.	Spiller Phone:	(718) 493−4887
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:	SHIRLEY SYMONDS	Caller Agency:	NYC DEP	Caller Phone:	(718) 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
11/04/1993	11/04/1993	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	25.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

F.D. IS THERE ARE CLEANING UP − SAND BAGS USED. TRAFFIC ACCIDENT.

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

Map Identification Number 51 **SPILL NUMBER 0104561** **Spill Number: 0104561** **Close Date: 07/31/2001**

63 ELDERT ST BROOKLYN, NY TT−Id: 520A−0046−680

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1230 feet to the E

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

Source of Spill:	PRIVATE DWELLING	Spiller:		Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	LEWIS ANDERSON	Notifier Phone:	(718) 453−2636
Caller Name:	LEWIS ANDERSON	Caller Agency:	TENANT	Caller Phone:	(718) 453−2636
DEC Investigator:	MXTIPPLE	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
07/28/2001		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:

BLDG HAS 2 ADDRESS − 1287 BUSHWICK AV IS OTHER ADDRESS FOR THE BLDG − FIRE DEPT DID RESPOND TODAY − CALLER IS SAYING ITS DEISEL FUEL − SMELL IS TERRIBLE

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 07/28/01 TENNANT STATED THAT THE LANDLORD WAS WORKING IN THE BASEMENT AND SPILLED A LITTLE OIL, LESS THAN A FEW GALLONS. WHEN ASKED FOR A DESCRIPTION OF THE SITE THE TENNANT SAID THAT HE REFUSED TO GO INTO THE BASEMENT. I CALLED THE LANDLORD TO FIND INFORMATION ON THE NATURE OF THE WORK I WAS TOLD THAT HE

WOULDNT RETURN UNTIL SUNDAY.

FDNY COMPANY 252 AND LADDER COMPANY 176 WERE BOTH AT THE SCENE EARLIER THAT DAY. I SPOKE WITH AN OFFICER FROM EACH COMPANY AND WAS RELAYED THE SAME INFORMATION. THE CALLER AND THE TENNANT ON THE FIRST FLOOR HAVE HAD MOMENTS OF VIOLENCE, THE SPILL IS A STAIN ON THE BASEMENT FLOOR, THERE IS NO RECOVERABLE PRODUCT. THE SPILL IS CLOSED.

Map Identification Number 52 **SERVICE BOX #28718** **Spill Number: 0501479** **Close Date: 07/12/2005**
755 MACON ST BROOKLYN, NY TT−Id: 520A−0044−914

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1289 feet to the SW

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MARK PIROPATO	Notifier Phone:	(212) 580−6763
Caller Name:	MARK PIROPATO	Caller Agency:	CON ED	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	ERT DESK	Contact Person Phone:	(212) 580−8383

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
05/05/2005		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:

1 AT ON 60 GALLONS WATER. CON ED REF #158429

DEC Investigator Remarks:

e2mis no. 158429:

05−MAY−2005 0935HRS COSTANZO # 16245 UG REPORTS FOUND 1 QT UNKNOWN OIL ON 60 GALLONS WATER IN SB28718. NO SEWERS OR WATERWAYS AFFECTED. IT APPEARS TO BE CONTAINED TO STRUCTURE. TOOK SAMPLE ON A 4 TO 6 HOUR PRIORITY E TURNAROUND. CLEANUP PENDING RESULTS. PLACED ENVIROMENTAL STOP TAG # 41100. NO VISUAL WATER MOVEMENT.

Update − 5/5/05 − 1515hrs Samples arrived at chemlab at this time in the wrong jars. Resampling needs to be done.

UPDATE***************** 5−5−05 20:40HRS SECOND SAMPLE ARRIVED TO CHEM LAB WITHOUT A CHAIN OF CUSTODY NUMBERS. J. HENDRIX (SUPERVISOR) STATES THAT HE CAN NOT EXCEPT NEW SAMPLE WITHOUT IT. NEW SAMPLE WILL HAVE TO BE TAKEN. SAMPLE WILL BE RE− TAKEN AGAIN AND WILL CALL ENV DESK AT THAT TIME WITH SAMPLE UPDATE.

UPDATE 5−6−05 00:05HRS MR. PERROTTA (UG(REPORTS, TOOK NEW SAMPLE AND NEW CHAIN OF CUSTODY IS DD−00179. S. PACE 49874.

PCB Analysis by EPA 608/8082

N. DREVITCH − ENV. OPS., REPORTS CLEANUP COMPLETED BY DOUBLE WASHING STRUCTURE WITH SLIX. TAG # 41100 REMOVED. TJ − 50495

Closed. 7−12−05. George Breen

−− Aroclor 1242 < 1.0 ppm EPA 608/8082
Aroclor 1254 < 1.0 ppm EPA 608/8082 Aroclor 1248 < 1.0 ppm EPA 608/8082 Aroclor 1260 < 1.0 ppm EPA 608/8082
−−

Map Identification Number 53 **SERVICE BOX #28721** **Spill Number: 0501478** **Close Date: 07/12/2005**

738 MACON ST BROOKLYN, NY TT−Id: 520A−0040−676

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1368 feet to the SW

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

Source of Spill: UNKNOWN
Spiller: UNKNOWN
Spiller Phone:
Notifier Type: Affected Persons
Notifier Name: MARK PIROPATO
Notifier Phone: (212) 580−6763
Caller Name: MARK PIROPATO
Caller Agency: CON ED
Caller Phone: (212) 580−6763
DEC Investigator: JHOCONNE
Contact for more spill info: ERT DESK MIKE DAUGHTERY
Contact Person Phone: (212) 580−8383

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
05/05/2005		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:

APPR 1QT ON 50 GALLONS WATER. CON REF # 158427

DEC Investigator Remarks:

e2mis no. 158427:

5/5/05 − 0940hrs − Joe Costanzo # 16245 Splicer, UG, reports while on location to revamp structure found 1 qt unknown oil on 50 gallons water in SB28721. Sample taken marked E priority − chain of custody AA27140. Clean up pending test results.

Update − 5/5/05 − 1515hrs Samples delivered to chemlab at this time and were in the wrong jars. Resampling needs to be done.

UPDATE**** 5−5−05 20:40HRS SECOND SAMPLE ARRIVED TO CHEM LAB WITHOUT A CHAIN OF CUSTODY NUMBERS. J. HENDRIX (SUPERVISOR) STATES THAT HE CAN NOT EXCEPT NEW SAMPLE WITHOUT IT. NEW SAMPLE WILL HAVE TO BE TAKEN. SAMPLE WILL BE RE− TAKEN AGAIN AND WILL CALL ENV DESK AT THAT TIME WITH SAMPLE UPDATE.

UPDATE***** 5−6−05 00:08HRS NEW SAMPLE TAKEN AND CHAIN OF CUSTODY IS DD−00178. S. PACE 49874.

PCB Analysis by EPA 608/8082 −− Aroclor 1242 < 1.0 ppm EPA 608/8082 Aroclor 1254 < 1.0 ppm EPA 608/8082 Aroclor 1248 < 1.0 ppm EPA 608/8082 Aroclor 1260 < 1.0 ppm EPA 608/8082 −− UPDATE: 5/6/05 − 1940. N. DREVITCH − ENV. OPS., REPORTS CLEANUP COMPLETED BY DOUBLE WASHING STRUCTURE WITH SLIX. TAG # 41090 REMOVED. TJ − 50495

Closed. 7−12−05. George Breen

Map Identification Number 54 **RESIDENCE** **Spill Number: 0411465** **Close Date: 11/25/2005**

702 DECATUR ST BROOKLYN, NY TT−Id: 520A−0046−080

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1385 feet to the SSE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	DENNIS GOLDSTEIN − FERRANTINO FUEL	Spiller Phone:	(347) 242−1077
Notifier Type:	Responsible Party	Notifier Name:	DENNIS GOLDSTEIN	Notifier Phone:	(718) 832−6700
Caller Name:	DENNIS GOLDSTEIN	Caller Agency:	FERRANTINO FUEL	Caller Phone:	(718) 832−6700
DEC Investigator:	rmpiper	Contact for more spill info:	DENNIS GOLDSTEIN	Contact Person Phone:	(347) 242−1077

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
01/24/2005		OTHER	NO	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:

Material is approx. 5 gallons and clean up crews are in route. This was due to the fill box not being cemented.

DEC Investigator Remarks:

The homeowner is Miss Fishella Thomas (718−443−6774) Sangesland spoke with her, she says the basement is full of oil Dennis at Ferrantino fuel say it's a minor spill and his company will do the cleanup. Property owner had an open fill port, but switched to gas heat sometime in the past. Miss Thomas says she bought the house 3 years ago and the change was made before that.

1/24/05 − Sawyer − Responded to the site and met with homeowner Miss Thomas. Less than 40 gallon were released to the basement floor. The basement floor is dirt on concrete and no drains were impacted. There were two men from Ferrantino Fuel onsite recovering fuel oil with speedi dry. All free porduct was recovered. Just some staining and a light odor remained after Ferrantino workers left.

2/1/05 − Sawyer − Received a call for Fishella Thomas the smell is still in the house and it is unbearable. Called Dennis at Ferrantino Fuel and he said he would get professionals to powerwash the basement floor. He will call Ms. Thomas to set up a time for service.

2/3/05 − Sawyer − Called Ms. Thomas back and the smell is still giving them problems. Instead of power waashing Ferrantino Fuel sent a man with a Shop−Vac. Visited site on way home. Fumes and volatiles still present. Gave homeowner NYCDOH numbers and contact names.

Called Ferrantino Fuel and talked to Roger Lockman and he said he is sending PTC. I will meet them there.

6/15/05 − Austin − Project reassigned from Sawyer to Rahman − end 11/25/05− DEC Piper spoke w/ Ms. Thomas. As per her the cleanup crew returned a number of times to powerwash the concrete floor. .. All is ok now. She is satified w/ cleanup. No complaints.

Map Identification Number 55 **854 MONROE STREET** **Spill Number: 9503168** **Close Date: 06/09/2008**
854 MONROE STREET BROOKLYN, NY TT−Id: 520A−0041−621

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1415 feet to the WNW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Police Department	Notifier Name:		Notifier Phone:	
Caller Name:	PO MCNALLY	Caller Agency:	NYCPD 81ST PRECINT	Caller Phone:	(718) 574−0421
DEC Investigator:	hrpatel	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
06/13/1995		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	−1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

UNKNOWN AMT SPILLED; ONGOING OCCURRENCE − CONTAMINATED SOIL REPORTED TO ABOVE OFFICED BY NEIGHBORS OF LOCATION

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was M TIBBE

transferred to C.O. − no action taken

Spill transferred back to Region 2

3/10/08 − Austin − Spill assigned to Patel for followup − end

06/09/08−Hiralkumar Patel. visited site. site is redeveloped and has three story residential building. all new sidewalk. no additional complaints.

case closed.

Map Identification Number 56 **MANHOLE #2361** **Spill Number: 0008001** **Close Date: 12/14/2001**
CONELIA ST & EVERGREEN AVE BROOKLYN, NY TT−Id: 520A−0051−135

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1450 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: CORNELIA ST / EVERGREEN AV
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	MS NEVILLE	Notifier Phone:	(212) 580−6763
Caller Name:	BRIAN JOYCE	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	KMFOLEY	Contact for more spill info:	BRIAN JOYCE	Contact Person Phone:	(212) 580−6763

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
10/07/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

3 ON 20 GALS OF WATER − SAMPLE TAKEN − CLEAN UP PENDING LAB RESULTS CON ED #133832

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was FOLEY Con Ed e2mis #133832 Notes:

10−7−00 3qts unknown oill on 20gal water in manhole. PCB sample taken. No oil filled equipment in structure.

10−11−00 Sample returned <1ppm PCBs.

11−16−00 Cleanup completed by double washing with slix. Liquids removed by tanker, solids by vactor. No leaking company equipment.

Map Identification Number 57 **MANHOLE # 2361** **Spill Number: 0007334** **Close Date: 11/28/2001**
EVERGREEN AV/CORNELOUS ST BROOKLYN, NY TT−Id: 520A−0044−915

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1450 feet to the NNE

ADDRESS CHANGE INFORMATION
Revised street: EVERGREEN AV / CORNELIA ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR DONATONE	Notifier Phone:	
Caller Name:	ANTHONY NATALE	Caller Agency:	CON ED	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	ANTHONY NATALE	Contact Person Phone:	(212) 580−6763

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
09/22/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

AMOUNT REPORTED AS 1 PINT ON TOP OF 100 GALLONS OF WATER. SAMPLE HAS BEEN TAKEN AND CLEANUP IS PENDING LAB RESULTS. CON ED 133538. NO CALL BACK REQUESTED.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis #133538 Notes:

9−21−00 1 pint unknown oil on 100gal water in manhole. Sample returned <1ppm PCB. Cleanup completed by double washing with slix. Liquids removed by tanker, solids by vactor. No leaking equipment. No sump.

Map Identification Number 58 **RESIDENTIAL BUILDING** **Spill Number: 0411790** **Close Date: 10/24/2006**
555 BAINBRIDGE STREET BROOKLYN, NY TT−Id: 520A−0046−081

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1466 feet to the SSE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	SCOTT ELIZIA − RESIDENTIAL BUILDING	Spiller Phone:	(516) 903−3869
Notifier Type:	Fire Department	Notifier Name:	KEVIN MCENTYRE	Notifier Phone:	(718) 476−6288
Caller Name:	KEVIN MCENTYRE	Caller Agency:	NYFD 1	Caller Phone:	(718) 476−6288
DEC Investigator:	rmpiper	Contact for more spill info:	SCOTT ELIZIA	Contact Person Phone:	(516) 903−3869

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 − 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
02/03/2005		OTHER	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	190.00	GALLONS	190.00	GALLONS	SOIL

Caller Remarks:

Has been cleaned up. DUe to a broken pipe, contained in the basement.

DEC Investigator Remarks:

03/07/05 − Sawyer − Talked with Scott Eliza and told him to send documentation of the clean up to the Department.

03/16/05 − Sawyer − The environmental contractor RND Services called the Department and remarked that more work has to be done to remediate the spill. Nick from RND (845 348 6355)is going to forward a proposal for subsurface investigation to the insurance company for authorization to complete the work. Mr. Eliza was not happy with the original cleanup.

6/15/05 − Austin − Project reassigned from Sawyer to Rahman − end 11/25/05− DEC Piper left message for nick at RND to get info/ update. 12/5/05− DEC Piper contacted Sharima from RND after message was left on 12/2/05. As per Sharina, proposal was sent out to insurance co. on 3/17/5 though was not accepted. Piper then spoke w/ Scott Eliza, Owner. and he stated that there is still oil staining on floor. Piper spoke w/ insurance co. Lamarche Assoc. Inc. regarding proposal. He will look into it. Site visit tent. scheduled for Wed 12/7/5. 4/5/06− Left message for Eric Gagnon at Lamarche assoc. requesting callback. 5/9/06− DEC Piper met with Sharima of RND services and Scot Elija at property. Spill was due to equipment failure during delivery. An overfill expanded the tanks adn spread the manifolded tanks apart and broke the feed line on bottom of tank. RND to excavate sump area and

collect endpoint samples for 8260 and 8270 analysis.

10/24/06− DEC Piper received closure reauest. Soil was excavated and endpoints are below TAGM. Closed.

Map Identification Number 59 **SPILL NUMBER 0104030** **Spill Number: 0104030** **Close Date: 02/13/2003**
1080 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0040−055

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1477 feet to the NNW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	CALLER − THE KINGS HOTEL	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	HILTON HOSANNAH	Notifier Phone:	(718) 574−5771
Caller Name:	HILTON HOSANNAH	Caller Agency:		Caller Phone:	(718) 574−5771
DEC Investigator:	SMSANGES	Contact for more spill info:	HILTON HOSANNAH	Contact Person Phone:	(718) 574−5771

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
07/16/2001		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN HAZARDOUS MATERIAL	HAZARDOUS MATERIAL	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

caller states this hotel has been spilling this unknown material onto his property for the last 6 or so months and now is noticing plants dying and dead etc − req followup and call

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND ADMINISTRATIVE CLOSURE − AUSTIN

Map Identification Number 60 **SB 41971** **Spill Number: 0008616** **Close Date: 12/17/2001**
35 SCHAFFER ST BROOKLYN, NY TT−Id: 520A−0045−784

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1486 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: 35 SCHAEFER ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	CALLER − CON ED	Spiller Phone:	(212) 580−6763
Notifier Type:	Responsible Party	Notifier Name:	MR TOJEIRA	Notifier Phone:	
Caller Name:	RICHARD ROACH	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	OKWUOHA	Contact for more spill info:	RICHARD ROACH	Contact Person Phone:	(212) 580−6763

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
10/24/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
MOTOR OIL	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1 gal motor oil in service box − believed to be from con ed. clean up pending crew. con ed 134−069

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:

Con Ed e2mis #134069 Notes:

10−24−00 1gal of what appears to be motor oil on 50gal water in service box 41971.

LSN 00−10208 <1ppm PCB

10−26−00 Structure was double washed with slix. Liquids removed by tanker, solids by vactor. No leaking company equipment.

Map Identification Number 61 **MANHOLE 695** **Spill Number: 9814887** **Close Date: 03/31/1999**
DECATUR ST/HOWARD AVE BROOKLYN, NY TT−Id: 520A−0037−572

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1490 feet to the SSW

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKNOWN − UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR DOMATONE	Notifier Phone:	
Caller Name:	BILL MURPHY	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	BILL MURPHY	Contact Person Phone:	(212) 580−6763

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
03/15/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SHEEN ON 50 GALLONS OF WATER. CON ED 123636. PRESSURE TEST ONNTRANSFORMER NEGATIVE. PCB HISTORY OF 10PPM.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con ed e2mis notes:

A sheen of unknown oil on 50 gallons of water. PCB records show 10ppm. No records to show sewer connection. Pressure tested unit found to hold. Unable to see sump pump due to water. Contained no sewers or waterways affected.

<1.00ppm, Reports cleanup completed and tag removed.

Map Identification Number 62 **556 EVERGREEN AVE** **Spill Number: 9601214** **Close Date: 04/24/1996**
556 EVERGREEN AVE BROOKLYN, NY TT−Id: 520A−0041−822

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1502 feet to the N

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Local Agency
Caller Name: KIM HANNA
DEC Investigator: O'DOWD
Spiller: UNKNOWN − Unknown
Notifier Name: FIRE DEPT
Caller Agency: NYC DEP
Contact for more spill info: MR LAROCCHIA
Spiller Phone:
Notifier Phone: (000) 000−0000
Caller Phone: (718) 595−4784
Contact Person Phone: (917) 769−0483

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
04/24/1996		UNKNOWN	NO	NO

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

Caller Remarks:

FIRE DEPT ON THE SCENE GAS IS IN THE BASEMENT OF A BUILDING CALL FD# 4X− BUSY NO ANS AT DEP

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

Map Identification Number 63 **CAR LEAK** **Spill Number: 0407975** **Close Date: 10/20/2004**
615 MACDOUGH ST BROOKLYN, NY TT−Id: 520A−0044−196

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1512 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 615 MAC DONOUGH ST
Revised zip code: NO CHANGE

Source of Spill:	PASSENGER VEHICLE	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	(311) −
Caller Name:	AZALIA MADDOX	Caller Agency:	NYC DEP	Caller Phone:	(212) 689−1520
DEC Investigator:	CESAWYER	Contact for more spill info:	WILLIAM	Contact Person Phone:	(718) 443−3621

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
10/18/2004		UNKNOWN	NO	NO

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

Caller Remarks:

Late model Cadillac (Burgundy) leaking gasoline in front of the location above.

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

Map Identification Number 64 **SPILL NUMBER 0402541** **Spill Number: 0402541** **Close Date: 08/20/2004**
1369 BROADWAY BROOKLYN, NY TT−Id: 520A−0040−526

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1559 feet to the NW

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

Source of Spill:	GASOLINE STATION OR PBS FACILITY	Spiller:	DANIEL GERRARD	Spiller Phone:	(212) 935−4136
Notifier Type:	Other	Notifier Name:	CHRISTINE CHEN	Notifier Phone:	(212) 768−0516
Caller Name:	CHRISTINE CHEN	Caller Agency:	AIRTEK	Caller Phone:	(212) 768−0516
DEC Investigator:	JMROMMEL	Contact for more spill info:	DANIEL GERRARD	Contact Person Phone:	(212) 935−4136

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
06/08/1995		UNKNOWN	NO	NO

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

Caller Remarks:

the spill happened years ago.they just found out that the ground was contaminated.the people that owned the property before never reported the spill. the previous owners were NYC economic development corporation.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL 6/9/04 Tipple sent contaminated soil letter. Ms. Chen stated that in the past only a portion of the on−site contamination had been addressed and there was no paper trail known of at this time to substantiate any claims. MS. CHEN CONDUCTED A SANBORN SEARCH SHE STATED THAT THIS PROPERTY WAS AN OLD SERVICE STATION WITH 5 550 GAL GAS TANKS. Two 55 tanks found during excavation, one of which was a gas tank.

06/16/04 Reviewed LAW Environmental Consultants, Inc. Report of Petroleum−Contaminated Soil Removal dated 5/17/96, received by Dept on 6/14/04.

12/94 550 gallon UST discovered on SE prtions.

2/95 tank removed − no contamination found

5/95

LAW’s Environmental Site Assessment Report − 29 Geoprobe borings. Contamination noted within 4−12 foot interval, also as deep as 17 ft below grade in the NW portion of property

2/96 2000 tons of soil removed 550 UST discovered in the western portion near Gates Avenue tank removed 2/21/96. North wall endpoint grab sample BTEX 13,974 ppb. Endpoint sample − below TAGM. Soil at NW corner bounded between Gates Ave on West and resident on north was contaminated. Exc 14 ft deep, 65ft by 45 ft.

8/20/04 Reviewed 8/9/04 Soil Boring Assessment in area of old tanks, at prior B4 and prior NW1. All samples non−detect. Spill closed. See file. Rommel.

Map Identification Number 65 **AP MART** **Spill Number: 0611079** **Close Date: 01/05/2007**
951 PUTNUM AVE BROOKLYN, NY TT−Id: 520A−0047−983

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1633 feet to the W

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
Revised zip code: 11221

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Spiller: MR WILSON − AP MART
Spiller Phone: (718) 453−0641
Notifier Type: Local Agency
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: SMSANGES
Contact for more spill info: MR WILSON
Contact Person Phone: (718) 453−0641

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
01/04/2007		OTHER	NO	

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

Caller Remarks:

LARGE OIL SPILL ON SIDEWALK HAS NOT BEEN CLEANED UP

DEC Investigator Remarks:

Sangesland confirmed that 5 Boro fuel (718−953−2900) responded to the site and cleaned up the sidewalk

Map Identification Number 66 **TRANSFORMER VAULT 715** **Spill Number: 0503939** **Close Date: 09/09/2005**
1038 GATE AVE BROOKLYN, NY TT−Id: 520A−0044−197

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (4)
Approximate distance from property: 1647 feet to the NW

ADDRESS CHANGE INFORMATION
Revised street: 1038 GATES AVE
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:		Spiller Phone:	
Notifier Type:	Other	Notifier Name:	TOJERIA, JULIO	Notifier Phone:	(212) 580−6763
Caller Name:	MARCINEK,TOM	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	GDBREEN	Contact for more spill info:	ERT DESK MIKE DAUGHTERY	Contact Person Phone:	(212) 580−8383

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
07/01/2005		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:

5 pints of unknown oil on 300 gallons of water. Clean−up pending removal of car blocking access.

159540.000

DEC Investigator Remarks:

159540.000

K. DAVIS − 16852 − BQE, REPORTS FINDING APPROX 5 PTS OF AN UNKNOWN OIL ON APPROX 300 GALS OF WATER IN TM715. SPILL IS CONTAINED. NO SEWERS OR WATERWAYS AFFECTED. NO FIRE OR SMOKE INVOLVED. NO INJURIES. NO PRIVATE PROPERTY AFFECTED. NO MOVEMENT IN THE WATER. NO SEWER CONNECTIONS. CANNOT VERIFY THE EXISTENCE OF ANY SUMPS OR DRAINS. TAG # 08283 PLACED IN STRUCTURE. PCB SAMPLE TAKEN. CHAIN OF CUSTODY FORM # EE09736 FILLED OUT AND MARKED 'E' PRIORITY. CLEANUP PENDING LAB RESULT. TJ − 50495

7/01/2005 20:45 HRS. −− K. DAVIS OF EQUIPMENT GROUP REPORTS TRANSFORMER WAS PRESSURE−TESTED AND HELD PRESSURE. −− W.W. #17344 −−

7/02/2005 03:17 HRS. RECEIVED PCB RESULTS

30 PPM, AROCLOR 1260, LAB SEQ # 05−06412−001. −− W.W. #17344 −−

UPDATE: 7/2/05 − 1150. N. DREVITCH − ENV. OPS., REPORTS A VEHICLE BLOCKING THE TM. PLATE WAS RUN. VEHICLE BELONGS TO THE NEW YORK PUBLIC LIBRARY IN MANHATTAN. WE WILL FOLLOW UP MONDAY MORNING WHEN PARKING ALLOWS ACCESS. INCIDENT IS NOW OFF THE 24 HR CLOCK. TJ − 50495

UPDATE 03−JUL−2005 01:30 HRS. ENVIR. OPER. MECH−A D.CARSON REPORTS: WILL NEED A TANKER TO COMPLETE THE CLEANUP. C.HOGAN 07511

7/3/05 1045HRS J.IOCCO ENVIR OPPS REPORTS CLEANUP COMPLETED DOULBED WASHED STRUCTURE USING BIO−GEN 760.TANKER REMOVED ALL LIQUIDS.FOUND SUMP SEALED.REMOVED ENVIR TAG#08283.

G DONATONE

Closed. 9−9−05. GB

Map Identification Number 67 **IN FRONT OF** **Spill Number: 1312168** **Close Date: 05/01/2014**
429 BAINE BRIDGE STREET BROOKLYN, NY TT−Id: 520A−0297−657

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1652 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: IFO 429 BAINBRIDGE ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RWAUSTIN	Contact for more spill info:	ERT	Contact Person Phone:	(212) 580−8383

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
03/28/2014		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

clean up pending results

DEC Investigator Remarks:

5/1/14 − Austin − 1/2 gal unk. oil found in service box − Con Ed contained and cleaned up the spill; no source identified − See D2 files for further information − Spill closed − end

Map Identification Number 68 **IN FRONT OF** **Spill Number: 1312167** **Close Date: 11/21/2014**
434 BAINE BRIDGE STREET BROOKLYN, NY TT−Id: 520A−0297−658

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 1665 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: IFO 434 BAINBRIDGE ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RWAUSTIN	Contact for more spill info:	ERT	Contact Person Phone:	(212) 580−8383

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
03/28/2014		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

in service box. clean up pending sample results

DEC Investigator Remarks:

11/21/14 − Austin − 1 gal unk oil atop 4 gals water in service box in front of address given − Con Ed contained and cleaned up the spill; no surce identified − See document files for further information − Spill closed − end

Map Identification Number 69 **SERVICE BOX 41972 IFO** **Spill Number: 9810334** **Close Date: 10/31/2002**
63 SCHAEFER ST BROOKLYN, NY TT−Id: 520A−0046−679

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1676 feet to the E

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

Source of Spill: MAJOR OIL FACILITY (>400,000 GAL) Spiller: UNKNOWN Spiller Phone:
Notifier Type: Affected Persons Notifier Name: MR CAPPADONA Notifier Phone: (718) 802−5196
Caller Name: STEVE ROMERO Caller Agency: CON EDISON Caller Phone: (212) 580−6763
DEC Investigator: CAENGELH 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
11/16/1998		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

FOUND 1/2 GAL UNKNOWN PETRO MIXED W/3 GALS H20 − TEST BEING DONE AND CLEANUP WILL BEGIN WHEN RESULTS ARE IN.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT

Map Identification Number 70 **SERVICE BOX 14548** **Spill Number: 9903141** **Close Date: 05/18/2000**
411−413 BAINBRIDGE ST BROOKLYN, NY TT−Id: 520A−0044−198

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (2)
Approximate distance from property: 1718 feet to the SSW

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

Source of Spill: UNKNOWN Spiller: UNKNOWN Spiller Phone:
Notifier Type: Affected Persons Notifier Name: MR PAVARELLI Notifier Phone:
Caller Name: FRANK MASSERIA Caller Agency: CON EDISON Caller Phone: (212) 580−6763
DEC Investigator: JHOCONNE 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
06/18/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

CON EDISON #125624 SAMPLE TAKEN CLEAN UP PENDING − 1 PINT ON 2 GALLONS OF WATER

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL con ed e2mis notes:

Approx 1 pt of unknown oil on 2 gallons water in sb. No oil filled equipment. <1ppm cleanup complete and tag removed. Incident is closed.

Map Identification Number 71 **MANHOLE 63913** **Spill Number: 9813679** **Close Date: 05/19/2000**
CHAUNCEY ST/SARATGOA AVE BROOKLYN, NY TT−Id: 520A−0043−003

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1736 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: CHAUNCEY ST / SARATOGA AVE
Revised zip code: 11233

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:	TONY CONSTANTINE	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	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
02/09/1999		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 reported sheen on water in manhole of unk origin. con ed # 122924

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con ed e2mis 122−924 notes:

2/09/99 13:35 hrs Ed Rasa #42951, O/S with Underground, reports at 13:20 hrs while doing scheduled work he found an undiaperable sheen of unknown oil on approx. 3 gal water in MH−63913. Location is S/S Chauncey St., 35' E/O S/E/C Saratoga Ave. Spill is contained. No sewers or waterways affected. Not able to tell if there is a sump due to mud underneath the water in hole.. No oil−filled equipment in manhole. Env. stop tag #03654 installed. One liquid sample oil & water taken on a 4−6 hour priority turnaround. Cleanup pending PCB test results from Chem Lab.

UPDATE 2/9/99 2031HRS − CHEM LAB RESULTS RECD <1PPM − LAB SEQ# 99−01378.

UPDATE: 2/10/99 − 1115 J. LIPORI − 11179 − ENV. OPS., REPORTS <1.0 PPM CLEANUP COMPLETE WITH SLIX AND TAG #03654 REMOVED. INCIDENT IS CLOSED.

Map Identification Number 72 **SERVICE BOX 15457** **Spill Number: 9903145** **Close Date: 05/18/2000**
416 BAINBRIDGE ST BROOKLYN, NY TT−Id: 520A−0046−118

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1846 feet to the SSW

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR POVERALLI	Notifier Phone:	
Caller Name:	STEVEN CRIBBIN	Caller Agency:	CON ED	Caller Phone:	(212) 580−8576
DEC Investigator:	JHOCONNE	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
06/18/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

1 pt of unk oil on 2pt of water − con ed #125626− sample taken clean up pending results

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con ed e2mis notes:

Approx 1 pt of unknown oil on 2 gallons water in sb, No parking tues and friday. <1.00 ppm, Cleanup complete Incident is closed.

Map Identification Number 73 **SERVICE BOX 21468** **Spill Number: 9812957** **Close Date: 10/18/2002**
861 JEFFERSON AVE BROOKLYN, NY TT−Id: 520A−0044−195

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1877 feet to the W

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:	MR THORTON	Notifier Phone:	(212) 580−6763
Caller Name:	TONY CONSTANTINE	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	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
01/21/1999		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

con edison #122594 no waterways affected. sample taken. results pending results.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL DEC responder notes: 1/21/99: 5 gallons unknown oil w/40 gallons water in service box. Checking service. Sample collected for PCBs, told them to also analyze for oil ID and update me with results. (JHO)

e2mis no. 122−594: 11:38 1/21/98 W.WESTERVELT OPP.SUPER. I&A REPORTED FINDING 3 GAL. UNKNOWN OIL ON TOP OF 40 GAL. WATER IN SB21468 F/O 861 JEFFERSON AVE. WHILE CHECKING S/B FOR SALES JOB ON UPGRADING SER. AT THIS TIME CAN NOT TELL IF S/B HAS SUMP OR IS CONNECTED TO SEWER. NO SEWERS OR WATERWAYS AFFECTED. A SAMPLE WAS TAKEN PUT IN FOR 4−6 HRS. TURNAROUND. INSTALLED E.S.TAG #04676. CLEAN UP PENDING SAMPLE RESULTS.

1/21/99−18:25HRS−LAB SEQ# 99−00639−RESULTS <1.00PPM.

UPDATE 2/18/99 11:20 J.HIPP FLUSH DEPT REPORTED HE COMPLETED OIL CLEAN UP WITH SLIX IN SB21468 AND REMOVED OIL TAG.

Map Identification Number 74 **RESIDENCE** **Spill Number: 0008216** **Close Date: 03/24/2003**
333 MARION STREET BROOKLYN, NY TT−Id: 520A−0046−083

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1921 feet to the SSE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	IRIS ROBB − RESIDENCE	Spiller Phone:	(718) 485−0855
Notifier Type:	Other	Notifier Name:	SERVICE TECH	Notifier Phone:	
Caller Name:	LAURIE GRAF	Caller Agency:	PETRO OIL	Caller Phone:	(516) 686−2042
DEC Investigator:	SACCACIO	Contact for more spill info:	IRIS ROBB	Contact Person Phone:	(718) 485−0885

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
10/13/2000		UNKNOWN	NO	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:

CALLER REPORTING A SPILL OF MATERIAL OF UNK AMOUNT NO CLEAN UP HAS BEEN DONE. NO CALLBACK NECESSARY BELIEVED TO BE A PRE−EXISTING CONDITION.

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

Map Identification Number 75 **SERVICE BOX 16718** **Spill Number: 9813780** **Close Date: 02/23/1999**
334 CHAUNCEY ST BROOKLYN, NY TT−Id: 520A−0046−111

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1949 feet to the SSW

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	CON EDISON	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:	SCHILLING	Notifier Phone:	
Caller Name:	STEVEN CRIBBIN	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	CAENGELH	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
02/12/1999		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:

UNDIAPERABLE SHEEN ON TOP OF 5 GAL OF WATER IN BOX − CONTAINED − SAMPLE TAKEN − CASE #122981

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT Con ed e2mis 122−981 notes:

2/12/99 09:30 hrs Charles Schilling #38938, O/S with Underground, reports that at 09:25 hrs found an undiaperable sheen of unknown oil on approx. 5 gal water in SB−16718, F/O 334 Chauncey St. Spill is contained. No sewers or waterways affected. Env. stop tag #16070 installed. Took one liquid sample oil & water on a 4−6 hour priority turnaround. Cleanup pending PCB results from Chem Lab.

2/13/99−−−LAB RESULTS RETURNED <1PPM−−LAB SEQ #99−01526.

UPDATE 2−13−99 11:36 G.KERN #50632 FLUSH DEPT. REPORTED OIL CLEAN UP COMPLETED WITH SLIX IN SB16718 AND OIL E.S.TAG 16070 WAS REMOVED.

Map Identification Number 76 **BASEMENT** **Spill Number: 0612263** **Close Date: 06/09/2008**
371 BAINBRIDGE ST BROOKLYN, NY TT−Id: 520A−0047−967

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1977 feet to the SW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Citizen	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	SFRAHMAN	Contact for more spill info:	EVETTE MODOO	Contact Person Phone:	(718) 443−5765

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
02/07/2007		UNKNOWN	NO	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:

CALLER REPORTS SPILL ONTO FLOOR NEXT TO THE FURNACE. HOMEOWNER ATTEMPTED TO CLEAN UP. UNK HOW MUCH? UPDATE FROM VINCENT BOVE WITH VANDERBILT OIL COMPANY CALLED TO STATE A SPILL OF APPROX 1 GALLON ONTO CONCRETE. CALL BACK 917−416−2438. 02/08/07@00:47.

DEC Investigator Remarks:

Fill line corroded, Vanderbilt oil going to replace the fill line.Contact person, Vinny @(917)842−9826. 02/26/07 Inspected the tank and spill location 02/21/07. A letter went to Modoo, Adrian N 371 Bainbridge St Brooklyn NY 11233−2315

06/09/08 Kumar Patel inspected the house today on my request, as he was in the neighborhood. As per Kumar, there was no olfactory/visual evidence of spill in the house and the vent line which had a hole/crack before has been fixed. As per Kumar, there is no odor/smell of petroleum in the tank room and spill can be closed.(sr)

Map Identification Number 77 **SEVICE BOX 16709** **Spill Number: 0000947** **Close Date: 12/28/2001**
347 CHAUNCY ST BROOKLYN, NY TT−Id: 520A−0043−249

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1989 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: 347 CHAUNCEY ST
Revised zip code: 11233

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:		Notifier Phone:	
Caller Name:	TONY LOPEZ	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	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
04/24/2000		UNKNOWN	NO	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks:

caller reported 1 qt oil on 4 gallons water. con ed # 131011.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis #131011 Notes:

4−24−00 0930hrs 1qt unknown oil on 4gal water in service box 16709. Sample taken.

4−24−00 1605hrs LSN 00−03970 <1ppm PCB

4−24−00 1425hrs LSN 00−03971−001 ID returned similar to lubricating oil.

6−22−00 1020hrs Cleanup completed by double washing with slix. Liquid waste removed by tanker, solids by vactor. No leaking equipment. No sump.

Map Identification Number 78 **MANHOLE # 112** **Spill Number: 0004677** **Close Date: 10/22/2001**
BROADWAY & COPPER AVE BROOKLYN, NY TT−Id: 520A−0042−583

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 1995 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / COOPER ST
Revised zip code: NO CHANGE

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	MR PACE	Notifier Phone:	(212) 580−6763
Caller Name:	BILL MURPHY	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	BILL MURPHY	Contact Person Phone:	(212) 580−6763

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
07/19/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

2 qts on 100 gals of water − sample taken − clean up pending lab results

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis Notes:

7/19/00 2qts unknown oil on 100gal water in manhole. Liquid sample returned <1ppm PCB. Cleanup completed by double washing with slix. Liquids removed by tanker, solids by vactor. No leaking equipment. No sump.

Map Identification Number 79 **561 CHAUNCEY STREET** **Spill Number: 9513028** **Close Date: 01/19/1996**
561 CHAUNCEY STREET BROOKLYN, NY TT−Id: 520A−0041−746

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2031 feet to the SE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Local Agency	Notifier Name:	MR PALMINTERI	Notifier Phone:	(718) 403−3100
Caller Name:	RICKY WATTS	Caller Agency:	NYC DEP	Caller Phone:	(718) 595−6777
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	Meets Cleanup Standards	Penalty Recommended
01/18/1996		UNKNOWN	NO	NO

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

Caller Remarks:

BROOKLYN UNION GAS FOUND A PETROLEUM BASED PRODUCT IN SEWER LINES AT SITE. NO FURTHER INFORMATION. HAZ−MAT AND INDUSTRIAL WASTE ENROUTE TO SCENE.

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

Map Identification Number 80 **PS296 SCHOOL** **Spill Number: 9810352** **Close Date: 11/06/2008**
125 COVERT ST BROOKLYN, NY TT−Id: 520A−0046−602

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2045 feet to the ENE

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	FRANK CARDELLO − PS296 SCHOOL	Spiller Phone:	(718) 391−6832
Notifier Type:	Other	Notifier Name:	ISAAC MUNGRA	Notifier Phone:	(718) 624−4842
Caller Name:	ISAAC MUNGRA	Caller Agency:	PETROLEUM TANK CLEANERS	Caller Phone:	(718) 624−4842
DEC Investigator:	kkchanda	Contact for more spill info:	FRANK CARDELLO	Contact Person Phone:	(718) 391−6832

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
11/16/1998		OTHER	NO	NO

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

Caller Remarks:

PLUG TO TANK LEFT OPEN CAUSING SPILL− SPEEDI DRY PUT IN PLACE ACTUAL CLEANUP TO BE COMPLETED BY TOMORROW.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN

06/12/06: This spill is transferred from Mike Mulqueen to Mr. koon Tang.

02/02/07: Re−assigned to Chanda.

5/4/07: Kartik Chanda of DEC has reviewed all documents regarding this spill case.On 5/4/07, Chanda sent a letter to James Merlo, Manager Fuel Division, NYC Department of Education, requiring that the following documents be submitted to DEC for review by June 20, 2007:

1. An explanation of the cause of the tank system failure; 2. Either a description of the work performed to restore the integrity of the tank system (including retesting results), or a description of the work performed to close (decommission) the tank; 3. Information regarding petroleum contamination found at the site and cleanup activities (if any) associated with a

release from this tank system; 4. Any available documentation (i.e., invoices, bills, sampling analysis reports, etc.) pertaining to the work performed at this site associated with this violation.

6/15/07: Chanda received a letter from James Merlo, NYC Department of education regarding this spill case. He stated that his office does not have any information pertaining to this spill.

7/10/07: Chanda sent a letter to Ms. Guterman, NYC School Construction Authority, requiring that information regarding petroleum contamination found at the side and cleanup activities (if any) associated with a release from the tank system be submitted to DEC for review by Auguest 22, 2007.

9/6/07: Chanda received a letter regarding this spill case from Alex Lempert, Director, Industrial & Environmental Hygiene Division. He wrote that NYCSCA has not been able to locate any documentation of the clean up performed in 1998.Mr. Drew Pardus of the NYCSCA performed a site Inspection on July 30, 2007 and noted that the school has two 10,000 gallon #6 fuel oil ASTs to fuel the school boiler. Both ASTs have containment and are located in the basement of the school. De minims staining was observed in the containment from routine operation and maintenance of the ASTs. No significant accumulated product was observed inside the containment.

10/23/08: A meeting was held on 10/21/08 among DER staff, the NYCSCA representative to discuss the site status and updated information for this site. The meeting´s consensus was that a site visit is required with NYCSCA representative.

11/3/08: Chanda visited the spill site with Mr. Drew Pardus and observed that two #6 fuel oil AST on site. Both AST s have containment from routin operation. No significant accumulated product was observed inside the containment. Chanda took several photographs around the #6 fuel oil ASTs.(see eDocs)

11/5/08: Chanda reviewed the spill related documents and discussed with Mark Tibbe(NYSDEC) regarding the site visit and NYCSCA's letter dated October 7, 2008. Based on the information presented to the Department, DEC closed this spill, dated 11/6/08.

11/7/08: Chanda sent an NFA letter to Ms. Lee Geterman, NYCSCA and copy to Drew Pardus, NYCSCA via regular mail and e−mail.

Map Identification Number 81 **MANHOLE # 32303** **Spill Number: 0410019** **Close Date: 04/29/2005**
SE CORNER OF GATES AVE / BROOKLYN, NY TT−Id: 520A−0050−838

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2055 feet to the WNW

ADDRESS CHANGE INFORMATION
Revised street: SE CORNER OF GATES AVE / RALPH AVE
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN
Notifier Type: Affected Persons
Caller Name: LARRY COSTA
DEC Investigator: JHOCONNE

Spiller: Unknown Spiller
Notifier Name: JULIO DONATONE
Caller Agency: CON ED
Contact for more spill info: ERT DESK

Spiller Phone:
Notifier Phone: (212) 580−8383
Caller Phone: (212) 580−8383
Contact Person Phone: (212) 580−8383

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
12/08/2004		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SE CORNER OF GATES AVE / RALPH AVE

1 pint of unknown oil on 20 gallons of water in manhole. As of 0150 taken off drain found in structure which was clogged. Drain was unclogged and then cemented. In process of cleaning up spill. Ref. # 156495

DEC Investigator Remarks:

e2mis no. 156495:

08−DEC−2004 1020HRS SPLICER VINCENT FAILLA, EMPLOYEE NO 14567, WHILE ON LOCATION TO PERFORM PRIMARY WORK ON FEEDER 5B28 IN MH 32303, LOCATED ON THE S/E/C OF GATES AVENUE & RALPH AVENUE, REPORTS FINDING APPX 1 PT OF UNK OIL ON APPX 20 GALS OF WATER IN THE STRUCTURE. SPILL APPEARS TO BE CONTAINED TO THE STRUCTURE. SEALED SUMP IN THE STRUCTURE. ENVIRONMENTAL TAG NO. 35471 WAS PLACED IN THE STRUCTURE, A SAMPLE TAKEN FOR PCB'S WHICH WILL BE TRANSPORTED VIA COURIER TO ASTORIA LAB ON CC NO DD20417.

12/8/04 1906HRS LAB RESULT RETURNED 90 PPM LSN04−10174−001

UPDATE: 12/8/04 − 2130 CALCULATIONS INDICATE THAT NO EPA # IS REQUIRED FOR LIQUID WASTE.

12/9/04 0140HRS A.GLODOWSKI ENVIR OPPS REPORTS A DRAIN WAS FOUND CLOGGED UP. DRAIN WAS CLEANED AND CEMENTED NO SIGNS OF OIL WERE FOUND. CLEANUP CONTINUES.

UPDATE: 12/9/04 − 0445 A. WALKER − O.S. − ENV. OPS., REPORTS LEAKING FITTING ON JT REG TANK REPAIRED BY #9. STRUCTURE DOUBLE WASHED WITH BIO GEN 760 & A1 HYDRO. 100 GALS OF LIQUIDS REMOVED BY ASTORIA TANKER. 1 DRUM OF SOLID WASTE REMOVED FROM STRUCTURE.

Map Identification Number 82 **30 COOPER ST** **Spill Number: 0006985** **Close Date: 02/23/2006**
30 COOPER ST MANHATTAN, NY TT−Id: 520A−0039−875

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2103 feet to the ESE

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

Source of Spill: UNKNOWN
Spiller: 1987−93 WASHINGTON REALTY Spiller Phone:
Spiller: EUGENE TAVARES − 1987−93 WASHINGTON REALTY Spiller Phone:
Notifier Type: Other Notifier Name: MR SEAGRIFF Notifier Phone:
Caller Name: BILL MURPHY Caller Agency: CON EDISON Caller Phone: (212) 580−6763
DEC Investigator: JCGRATHW Contact for more spill info: EUGENE TAVARES 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	PBS # Involved	Meets Cleanup Standards	Penalty Recommended
09/13/2000		UNKNOWN	2−457299	NO	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:

during some digging they cam across contaminated soil ref #133377 samples taken

DEC Investigator Remarks:

e2mis no. 133377:

CON ED GAS CONSTRUCTION MECHANIC T. JEROME DISCOVERED FUEL OIL ABSORBED INTO THE SOIL AT THIS LOCATION WHILE EXCAVATING A GAS LEAK. SUPER OF BUILDING NOTIFIED.

Lab Sequence Number 00−08906: THE SUBMITTED SAMPLE IS SIMILAR TO HEAVY FUEL OIL.

9/18/00 Jane O'Connell and Kerry Foley, NYSDEC met with Gary Windman (Con Ed Gas Ops) on location at 30 Cooper Street. ChemLab to run another PCB analysis on oil that was in excavation. Oil appears to be seeping from below the excavation, indicating prior leak.

On 9/27/00, Gas Construction crew completed service repair to 30 Cooper Street. Gas Construction crew excavated the service and

generated 6 x 55 gallon drums of contaminated soil.

1/11/2006 − Haggerty − Wilfredo Martinez (718−583−4905), property manager remembers Con Edison digging up old phone lines in front of the property when the contaminated soil was found. Besides the excavation performed by Con Ed, the site was not remediated further. Keep open & site visit recommended.

2/15/2006 − site visit − 30 Cooper Street uses #6 Fuel oil − currently, no contamination observed. Spill decribed as #2 Fuel oil − 6 drums of oil−contaminated soil removed previously. Therefore, it not related to Cooper St. facility. Spill closed.

Map Identification Number 83 **MANHOLE 2386** **Spill Number: 0501596** **Close Date: 07/19/2005**
CENTRAL AVE/WEIERFIELD BROOKLYN, NY TT−Id: 520A−0051−134

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2120 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: CENTRAL AVE / WEIRFIELD ST
Revised zip code: NO CHANGE

Source of Spill: UNKNOWN Spiller: Spiller Phone:
Notifier Type: Responsible Party Notifier Name: TOJIERA,MR Notifier Phone: (212) 580−6763
Caller Name: PAUL DINONATO Caller Agency: CON ED Caller Phone: (212) 580−6764
DEC Investigator: GDBREEN Contact for more spill info: ERT DESK Contact Person Phone: (212) 580−8383

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
05/09/2005		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:

1 QT OF UNKNOWN OIL ON 1500 GALLONS OF WATER. NO TO ALL 5 QUESTIONS. CON ED REF #158464.

DEC Investigator Remarks:

158464.000

5/9/2005 08:45 HRS V. BOWDEN #85588 U/G REPORTS FINDING APPROX 1 PT OF UNKNOWN OIL ON APPROX 1500 GAL OF WATER IN M2386. THIS WAS FOUND WHILE DOING SECONDARY WORK ON ACCT#20090. THERE WAS NO SMOKE, FIRE, OR INJURIES RELATED TO THE SPILL, NOR WERE ANY SEWERS, WATERWAYS, OR PRIVATE PROPERTY AFFECTED. THE SOURCE AND CAUSE OF THE SPILL IS UNKNOWN. THE EXISTENCE OF ANY SEWER CONNECTIONS, SUMPS, OR DRAINS COULD NOT BE VERIFIED AT THIS TIME. THE STANDING WATER HAD NO MOVEMENT. ENV STOP TAG#35241 WAS PLACED AND ONE LIQUID SAMPLE TAKEN ON E PRIORITY FOR PCB ANALYSIS ON CHAIN OF CUSTODY #EE04414. CLEANUP PENDING LAB RESULTS. STRUCTURE IS ON CORNER. ==========J ANDERSON========== LAB RESULT RECEIVED 5/9/05 − 2035. 05−04272.

<1.0 PPM.

TJ − 50495 ========== UPDATE: 5/10/05 − 0435. DUE TO THE AMOUNT OF WORK WE HAD ON THIS SHIFT AND THE SHORTAGE OF CREWS TO WORK THEM, WE ARE UNABLE TO COMPLETE THIS INCIDENT WITHIN THE 24 HR TIME FRAME. THIS INCIDENT, THERFORE, IS NOW OFF THE 24 HR CLOCK. TJ − 50495
========== CIG DIDONATO NOTIFIED AT 0444 HRS. TJ − 50495

UPDATE − 5/10/05 − 2045 HRS. F. SCOTT ENV. OPS MECH REPORTS DOUBLE WASHED WITH BIOGEN 760 AND A−1 HYDRO. NO SUMPS FOUND IN STRUCTURE. NO LEAKING CO. EQUIPMENT FOUND. REMD ENV. STOP TAG # 35241. CLEAN UP COMPLETED 100%. CN#19661

Closed. 7−19−05. George Breen

Map Identification Number 84 **MANHOLE 2386** **Spill Number: 0004587** **Close Date: 10/19/2001**
WEIRFIELD ST/CENTRAL AVE BROOKLYN, NY TT−Id: 520A−0038−704

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2120 feet to the NE

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR WAINWRIGHT	Notifier Phone:	(212) 580−6763
Caller Name:	BILL MURPHY	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	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
07/17/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

caller reporting aspill of material from unk source coned#132418 samples taken clean up pending lab results no callback necessary a sheen of oil

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL Con Ed e2mis Notes:

7/17/00 Reports that while on location to replace service, found an undiaperable sheen of unknown oil on 1300gal water. Liquid sample taken returned <1ppm PCB. Cleanup completed by double washing with slix. Liquids removed by tanker, solids by vactor. No leaking equipment. No sump.

Map Identification Number 85 **SERVICE BOX 20343** **Spill Number: 9911681** **Close Date: 03/04/2002**
732 HALSEY ST BROOKLYN, NY TT−Id: 520A−0044−193

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2126 feet to the WSW

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

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Responsible Party
Caller Name: STEVEN CRIBBIN
DEC Investigator: JHOCONNE
Spiller: CON EDISON
Notifier Name: CLARK
Caller Agency: CON ED
Contact for more spill info:
Spiller Phone:
Notifier Phone:
Caller Phone: (212) 580−8576
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
01/07/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

ON 10GAL OF WATER − CASE #129524

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL

Map Identification Number 86 **SPILL NUMBER 0101053** **Spill Number: 0101053** **Close Date: 05/15/2001**

CENTRAL AVE/PUTNAM AVE BROOKLYN, NY TT−Id: 520A−0038−871

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2166 feet to the NNE

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:	DEPT. OF SANITATION	Notifier Phone:	
Caller Name:	STANLEY BALDWIN	Caller Agency:	NYC DEP	Caller Phone:	(718) 595−4658
DEC Investigator:	TJDEMEO	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
04/27/2001		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:

55 gallon oil drum was leaking waste oil. unknown how much has spilled. spill was cleaned with speedy dry.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO 5/15/01 TJD No Drum Found 5/10/01

Map Identification Number 87 **SERVICE BOX 1673** **Spill Number: 0502165** **Close Date: 07/26/2005**
498 CHAUNCEY ST BROOKLYN, NY TT−Id: 520A−0040−686

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2190 feet to the SE

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

Source of Spill: UNKNOWN
Notifier Type: Other
Caller Name: CHRIS SHIKARIVES
DEC Investigator: SKARAKHA

Spiller:
Notifier Name: MS. NEVILLE
Caller Agency: CON ED
Contact for more spill info: ERT

Spiller Phone:
Notifier Phone: (212) 580−6764
Caller Phone: (212) 580−6763
Contact Person Phone: (212) 580−8383

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
05/23/2005		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:

1 PT OIL ON 3 GALLONS OF WATER. NO TO ALL 5 QUESTIONS. CLEAN UP PENDING ACCESS. CON ED REF # 158721.

DEC Investigator Remarks:

e2mis no 158721

M.LOVADA FOUND APPROX. 1PT OF UNKNOWN OIL ON APPROX. 3 GALS OF WATER. NO SEWERS OR WATERWAYS APPEAR TO BE AFFECTED. THE SPILL APPEARS TO BE CONTAINED. OWNER OF SUBSTANCES IS UNKNOWN.NO KNOWN SUBSTANTIAL CRACKS IN STRUCTURE. ENIVIR. TAG# 44111 PLACED. 1 LIQ. SAMPLE TAKEN FROM SPILL.

Lab Sequence Number: 05−04817−001 − Aroclor 1260 < 1.0 ppm.

UPDATE 6−3−05 09:30 P. ROSADO REPORTS, DOUBLE WASHED STRUCTURE USING BIO GEN 760, REMOVED ALL LIQUIDS WITH VACTOR AND NO SUMP FOUND. TAG WAS REMOVED AND JOB 100% COMPLETED. S. PACE 49874.

Closed. 7−26−05. George Breen

Map Identification Number 88 **MH 63919** **Spill Number: 0103937** **Close Date: 08/23/2001**
GROVE ST/ BROADWAY BROOKLYN, NY TT−Id: 520A−0038−901

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2205 feet to the NW

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	NEVIL	Notifier Phone:	
Caller Name:	STEVE ROMERO	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	JHOCONNE	Contact for more spill info:	STEVE ROMERO	Contact Person Phone:	(212) 580−6763

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
07/12/2001		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	3.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

3 gal on 50 gal of water...spill wont be able to be lceaned up w/ in 24 hrs. ref # 138171. samples taken less than 1 ppm.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was O'CONNELL CON ED E2MIS REPORT 7−12−01 Approx. 3gals.of an unknown oil on approx. 50gals. of water in MH63919. No sewers/waterways affected. PCB sample taken.

7−13−01 0049hrs. Structure drained of liquids. Found cable on floor of structure and laying on feeders. UG contacted to go rerack able. Remove incident from 24hr. Deminimus.

1030hrs. <1.0ppm cleanup completed by double washing structure with slix. Waste removed with vactor. Sump cleaned and cemented. No leaking equipment . Tag remoed.

Map Identification Number 89 **SPILL NUMBER 9808332** **Spill Number: 9808332** **Close Date: 05/30/2001**
229−233 MARION ST BROOKLYN, NY TT−Id: 520A−0044−199

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (2)
Approximate distance from property: 2211 feet to the SSW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	JAY KAPLAN	Notifier Phone:	(914) 452−1658
Caller Name:	JAY KAPLAN	Caller Agency:	ECO SYSTEMS STRATEGIES	Caller Phone:	(914) 452−1658
DEC Investigator:	MXTIPPLE	Contact for more spill info:	JAY KAPLAN	Contact Person Phone:	(914) 452−1658

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
09/03/1998		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 FOUND SOIL CONTAMINATION DURING A TANK REMOVAL FROM A VACANT LOT − TANK WAS JUST CLOSED AND CALLER TO CONTACT THEIR CLIENT ABOUT CLEAN UP

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 01/26/01 Reassigned from O'Dowd to Tipple

Map Identification Number 90 **ABANDONED BLDG** **Spill Number: 9614376** **Close Date: 08/14/2009**
966 GATES AVE BROOKLYN, NY TT−Id: 520A−0041−958

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2282 feet to the WNW

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

Source of Spill:	UNKNOWN	Spiller:	ABOVE − ABANDONED BLDG	Spiller Phone:	
Notifier Type:	DEC	Notifier Name:	NYC FIRE DEPT	Notifier Phone:	
Caller Name:	KIM HANNA	Caller Agency:	NYC DEP	Caller Phone:	(718) 595−6700
DEC Investigator:	JBVOUGHT	Contact for more spill info:	ABOVE	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
03/11/1997		UNKNOWN	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	SOIL

Caller Remarks:

SPILL IN BASEMENT ON DIRT FLOOR SEEPING INTO DIRT

SPEEDI−DRY APPLIED FOUND BY FIRE DEPT

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 5/12/04 − AUSTIN − TRANSFERRED FROM MULQUEEN TO TIPPLE − END

8/23/05 − Raphael Ketani. Case transferred to Jeff Vought.

8/6/09− Complete file review by Intern EM Ibeh and DEC Vought

File being reviewed is SP#9614376, PIN# 00027, spill date− 3/11/97, at an abandoned building on 966 Gates Ave., Brooklyn. Caller´s remarks state ˆspill in basement on dirt floor, seeping into dirt. Speedi−Dry applied. Found by Fire Department˜.

Closed SP# #9614384− Spill date 3/11/97 at 964 Gates Ave., an abandoned building. ˆAST below grade−someone went into basement and disconnected line from tank causing tank to leak through dirt floor. Oil getting into next door building˜. Close date 8/12/97. See SP#9614376.

No PBS records found.

3/13/97− Materials used by Milro included Level D, 55gal. drums, plastic bags, lumber 2´x4´, Quick Wick, Bad Air sponges, deodorant.

3/17/97− Miscellaneous drum disposal

3/21/97− Level D, grain Control, Quick Wick and oil/water per gallon.

3/27/97− Level D, Quick Wick, plastic bags, 2 part Epoxy, Quick Wick, rollers and 4˜ brushes.

8/15/97− Personal note by Robert Leung telling that Milro never received check and Albany had no record.

8/18/98− ISR to Albany.

8/6/09− As per Bechard at OAG, no records in database.

8/14/09−Vought−08/14/09−Vought−Vought and Ibeh reviewed site with DEC Austin and spill closed as contract payment packages document cleanup via use of thirteen 55−gallon drums (most likely used for soil removal), deodorizers, powerwasher, air sponges and Quick Wick. Ibeh spoke with NYSOAG Bechard and they had no record of spill. No endpoint sample analyticals in file. Due to age of spill (greater than six years) cost recovery not possible due to statute of limitations and no known RP. Vought left message for DEC Farrar to determine whether Final ISR is required.

08/18/09−Vought−Spoke to DEC Farrar and as Att. Gen. Close Date box is filled out in UIS, no Final ISR needed.

Map Identification Number 91 **WINQ RES** **Spill Number: 9812474** **Close Date: 04/17/2001**
242 SUMPTER ST BROOKLYN, NY TT−Id: 520A−0046−102

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2383 feet to the SSE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	BEVERLY REITH, ENV. REVIE − HPD DEMOLITION SITE	Spiller Phone:	(212) 863−7941
Notifier Type:	Affected Persons	Notifier Name:	DEVON WING	Notifier Phone:	(718) 363−1293
Caller Name:	DEVON WING	Caller Agency:	HOMEOWNER	Caller Phone:	(718) 363−1293
DEC Investigator:	SIGONA	Contact for more spill info:	MR WING	Contact Person Phone:	(718) 363−1293

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
01/08/1999		OTHER	YES	NO

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

Caller Remarks:

with recent rains product coming from a tank in a vacant lot adjacent to comp property

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:

1/11/1999 mmm: A. RUSSO WRECKING DEMOLISHED EXISTING STRUCTURES TO EAST OF HOUSE LOCATED AT 167 MACDOUGAL STREET, SOUTH OF SUMPTER AVENUE. WRECKING COMPANY LEFT 275 GAL UST IN GROUND ADJACENT TO 167 MACDOUGAL. RAIN WATER DISPLACED CONTENTS OF TANK AND PETROLEUM CONTAMINATION THAT RAN NORTHWARD TOWARD THE REAR OF THE AFFECTED RESIDENTIAL BUILDING AT 272 SUMPTER AVE. RESIDENTS OF 167 A MACDOUGAL ALSO WERE COMPLAINING OF ODORS. CALLED HPD AND SPOKE TO THOMAS IN ASBESTOS UNIT (ROSS NOT AVAILABLE). THOMAS TO SPEAK TO ROSS.

4/15/199: PROPOSAL TO HPD FROM TYREE REVIEWED AND APPROVED. LETTER SENT.

On August 3, 1999, DEC Sigona received results of the endpoint soil sampling from Tyree Bros Environmental Services. On March 29, 2001, DEC Sigona sent letter to HPD − Tracey Washington to close the spill no further action required.

Map Identification Number 92 **SB32349** **Spill Number: 1408896** **Close Date: 01/23/2015**
RALPH AVE AND CHAUNCEY ST BROOKLYN, NY TT−Id: 520A−0303−309

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 2387 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: RALPH AVE / CHAUNCEY ST
Revised zip code: NO CHANGE

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	ERT − CONEDISON	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	RWAUSTIN	Contact for more spill info:	ERT	Contact Person Phone:	(212) 580−8383

Category: Investigation indicates there was no spill.
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
12/02/2014		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

Oil from an outside source has leaked into a service box. Clean up is pending an investigation.

DEC Investigator Remarks:

12/2/14 TJD Con Ed EMIS report not yet available. 1/23/15 − Austin − 1 pint of unk. blue substance with 80 gals water found in Con Ed service box − Con Ed contained and cleaned up the material (no id lab analyisis done) − See document files for further information − Spill closed − end

Map Identification Number 93 **SERVICE BOX 20476** **Spill Number: 9811536** **Close Date: 02/19/2003**
1167 HALSEY ST BROOKLYN, NY TT−Id: 520A−0046−675

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2420 feet to the NE

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Affected Persons	Notifier Name:	MR PACE	Notifier Phone:	
Caller Name:	MIKE CESARE	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	CAENGELH	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
12/14/1998		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

FOUND 2 OZ UNKNOWN PETRO FLOATING ON 25GALS OF WATER. SAMPLE TAKEN TEST BEING DONE. CON ED 121939

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was ENGELHARDT E2MIS 121939

B.LUCEY #18161 OS I&A SERVICES REPORTS WHILE DOING A HOUSE SERVICE FOUND IN SB20476 APPROX 2 OUNCES OF AN UNKNOWN OIL ON 25 GALLONS OF WATER. CONTAINED TO STRUCTURE, NO SEWERS OR WATERWAYS AFFECTED, LIQUID SAMPLE TAKEN WITH A 4−6 HR TURN AROUND, STOP TAG #12461 PLACED. #12255 VDC. UPDATE********** CIG WAS NOTIFIED AT 13:13HRS, AFTER B.DONOVAN CALLED S. PACE AND ASKED IF CIG WAS NOTIFIED. WHEN CIG WAS ASKED, THEY VARIFIED THAT IT WAS NOT. AT THAT TIME S.PACE TURNED IT IN. S.PACE 49874.
UPDATE********** 12−14−98 LAB SEQ# 98−13879−001 FLASHPOINT >161 DEG.F. & LAB SEQ# 98−13876 <1.0.

N.P. 0700 TO 1900. MON., WED., & FRI. TJ − 50495

UPDATE: 1/11/99 − 1030 A. WALKER − 55495 − ENV. OPS., REPORTS <1.0 PPM CLEANUP COMPLETE WITH SLIX AND TAG #12461 REMOVED. INCIDENT IS CLOSED. Detailed Description:

Map Identification Number 94 **MANHOLE #DS2884** **Spill Number: 0503913** **Close Date: 09/09/2005**
RALPH AVE/LEXINGTON AVE BROOKLYN, NY TT−Id: 520A−0050−111

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2429 feet to the NW

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

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ERT DESK MIKE DAUGHTERY − MANHOLE #DS2884	Spiller Phone:	(212) 580−8383
Notifier Type:	Responsible Party	Notifier Name:	PETE MCGURIE	Notifier Phone:	(212) 580−6763
Caller Name:	PETE MCGURIE	Caller Agency:	CONED	Caller Phone:	(212) 580−6763
DEC Investigator:	SKARAKHA	Contact for more spill info:	ERT DESK MIKE DAUGHTERY	Contact Person Phone:	(212) 580−8383

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
07/01/2005		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
DIELECTRIC FLUID	PETROLEUM	4.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

TRANSFORMER BLEW UP AND INJURED FOUR PEOPLE. SO TO FOUR QUESTIONS. CON ED#159536

DEC Investigator Remarks:

e2mis no 159536

J. BUIVIDAS − 07974 − FOD, REPORTS APPROX 4 GALS OF DIEL FLUID BLEW OUT FROM VS2884 ONTO ASPHALT, CONCRETE & A BUILDING. 5 PEOPLE WERE INJURED BY THE EXPLOSION. NO SEWERS OR WATERWAYS APPEAR TO BE AFFECTED. HE IS UNABLE TO DETERMINE THE AMOUNT OF OIL IN THE STRUCTURE AS YET. SAMPLES WILL BE TAKEN AND TAGS WILL BE HUNG WHEN IT IS OK TO DO SO.

UPDATE: 7/1/05 − 1415 HISTORICAL PCB COUNT OF TRANSFORMER IS 10 PPM DTD 11/30/95. EPA # ISSUED NYP004133120.

UPDATE: 7/1/05 − 1452 PCB SAMPLE TAKEN FROM TRANSFORMER BY B. BENOIT.

7/01/2005 18:59 HRS. −− PCB RESULTS

<1.0 PPM,

LAB SEQ # 05−06390−001.

7/01/05 21:37 HRS −− BROOKLYN ENV OPS O/S GENE WILLIAMS REPORTS SURFACE OF STREET AND SIDEWALK WAS DOUBLE WASHED WITH SAFEWASH AND ALL LIQUIDS WERE REMOVED FROM STREET WITH TANKER. GENERATED 17 DRUMS OF FRUIT THAT WAS CONTAMINATED WITH OIL AND THE DRUMS ARE BEING TRANSPORTED BY CENTRAL FIELD SERVICES TO ASTORIA. OIL FROM TRANSFORMER RAN OFF STREET INTO A MANHOLE THAT LOCATED ON STREET DIRECTLY IN FRONT OF VS−2884 ON SIDEWALK. ENV OPS CREW IS SETTING UP TO CLEAN THE MANHOLE. −− W.W. #17344 −−

7/01/05 21:46 HRS. −− I CHECKED C&DO PLATE 42−AA AND FOUND MH−15740 LOCATED ON STREET IN FRONT OF VS−2884 ON SIDEWALK. GAVE STRUCTURE NUMBER TO ENV OPS O/S GENE WILLIAMS. −− W.W. #17344 −−

7/01/05 21:51 HRS. NOTIFIED C.I.G. T. PARKER OF ADDITIONAL STRUCTURE AFFECTED: MH−15740. −− W.W. #17344 −−

UPDATE 02−JUL−2005 02:43 HRS. ENVIR. OPER MECH−A D.RODRIGUEZ EMP# 83694 REPORTS: FOUND AN EARTHEN SUMP WHILE IN THE PROCESS OF CLEANING STRUCTURE. C.HOGAN 07511

7/02/2005 03:00 HRS. −− D. RODRIGUEZ OF BROOKLYN ENV OPS REPORTS EQUIP. GROUP REMOVED TRANSFORMER FROM TM−2884 THEN ENV OPS TRIPLE WASHED STRUCTURE WITH A1−HYDRO AND CEMENTED EARTHEN SUMP. ALSO DOUBLE−WASHED MH−15740 WITH A1−HYDRO AND NO SUMP IN MANHOLE. THERE WERE NO ENV STOP TAGS TO REMOVE. CLEANUP OF BOTH STRUCTURES IS 100% COMPLETE AT THIS TIME. −− W.W.

7−5−05 08:45hrs MR. GARCIA (NETWORKS) REPORTS, UNIT READS 330 GALLONS ON TAG, 290 GALLONS DRAINED AND 36 GALLONS UNCOUNTED FOR. UNIT WAS REMOVED AND NEW UNIT INSTALLED. S. PACE 49874.

UPDATE FROM ANN IP. −−−−−Original Message−−−−− From: Ip, Ann S. Sent: Tuesday, July 05, 2005 10:09 AM To: Hearns, Dennis J. Cc: Ip, Ann S. Subject: FW: Addition Information − e2mis 159536 Dennis −

As we discussed, the following provide additional information and clarification to incident 159536: − B/Q EH&S (A.Ip and E. Silano) arrived at the site at 1415 hrs and 1425 hrs, respectively, on 7/1/05. A command post has already be established at the time B/Q EHS arrived. Vito Vavallo of the ERG manned the command post. Nick Caputo was the white hat of this incident. − Nick Captuo informed A. Ip that two NYCDEP representatives were at the scene and he requested A. Ip to coordinate with the DEP on the cleanup scheme. − A. Ip met with John Wilson and Roberto Dias of the NYCDEP (Hazmat) and toured the site. The areas impacted by this incident included the sidewalk and street located around and in front of the transformer vault, and the food stand and awning located in front of the food store (i.e., Farm Fresh owned by Ms. Kaekae Lee at 2 Ralph Avenue). The inside of the store appeared clean and it was not impacted by this incident. Most of the fruits on the food stand and the awning appeared burned due to the transformer fire. The catch basin (at the corner of Ralph Ave. and Lexington Ave.) and the sewer (in front of VS 2884 on Ralph Ave.) were also examined by the DEP and B/Q EHS. Both structures were found to be clean. As a result, the DEP agreed that there was no need to clean the nearby catch basin and sewer. However, all the impacted fruits must be removed and disposed of. − The statement Oil from transformer ran off street into a manhole located on street in front of VS 2884 on sidewalk indicated in the 7/1/05 21:37 hrs entry of this incident report is not entirely correct. It should be clarified that oily wash liquid ran off street and entered the line manhole (MH 15740) during the process of cleaning the street and sidewalk. Initially, MH 15740 was not impacted by this transformer incident. − Ed Silano of B/Q EHS left the site at 1450 hrs to deliver oil sample to the Chem Lab. ERT (Andrew Fiore) arrived at the site at 1515 hrs and left at 1800 hrs. John Wilson of the DEP also left the site at 1915 hrs after A. Ip provided him with a hard copy of the current PCB lab result. Mr. Wilson commented that the Con Ed crew had done a very good job in cleaning up this spill. After the street and sidewalk were cleaned, and all the fruits on the food stand were removed, A. Ip updated the EHS manager of this incident and left the site at 2030 hrs.

Closed. 9−9−05. GB

Map Identification Number 95 **NEW CONSTRUCTION** **Spill Number: 9712516** **Close Date: 02/09/1998**
150 SUMPTER ST BROOKLYN, NY TT−Id: 520A−0046−115

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2461 feet to the S

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Other
Caller Name: KEITH PETTEY
DEC Investigator: SMMARTIN

Spiller: UNKNOWN
Notifier Name: SITE WORKER
Caller Agency: SARATOGA 3 HOUSING CORP.
Contact for more spill info: KEITH PETTEY

Spiller Phone:
Notifier Phone:
Caller Phone: (718) 875−8500
Contact Person Phone: (718) 875−8500

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
02/09/1998		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN MATERIAL	OTHER	0	GALLONS	0	GALLONS	SOIL

Caller Remarks:

DURING GRADING OF DIRT, A TANK WAS FOUND. UNKNOWN SIZE, UNKNOWN PRODUCT INSIDE. APPEARS TO HAVE BEEN NO LEAKAGE.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT ADVISE: 1. NOTIFIY OWNER. 2. FIND SIZE. 3. PUMP OUT TANK. 4.REGISTRATION IF NECESSARY. 5. CLOSURE OF TANK.

Map Identification Number 96 **233 HOWARD AVENUE** **Spill Number: 9401030** **Close Date: 04/22/1994**
233 HOWARD AVENUE BROOKLYN, NY TT−Id: 520A−0046−114

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2499 feet to the S

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER
Notifier Type: Federal Government
Caller Name: HOLLIS
DEC Investigator: SMMARTIN
Spiller:
Notifier Name:
Caller Agency: DEP
Contact for more spill info:
Spiller Phone:
Notifier Phone:
Caller Phone: (718) 595−6777
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
04/21/1994	04/22/1994	UNKNOWN	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SEWER

Caller Remarks:

FUEL OIL CO WASHED IT DOWN THE SEWER− THEY ARE STILL THERE. CALLED DEP−POST OFFICE # IS WRONG. DEP EN ROUTE DEP WILL CALL BACK WITH MORE INFORMATION.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT

Map Identification Number 97 **PS # 040** **Spill Number: 0607553** **Close Date: 02/07/2007**
265 RALPH AVE BROOKLYN, NY TT−Id: 520A−0038−225

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2500 feet to the SSW

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

Source of Spill: COMMERCIAL/INDUSTRIAL
Spiller: MUNENDRA SHARMA − PS # 040
Spiller Phone: (718) 349−5738
Notifier Type: Local Agency
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: rmpiper
Contact for more spill info: MUNENDRA SHARMA
Contact Person Phone: (718) 349−5738

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
10/03/2006		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#6 FUEL OIL	PETROLEUM	2000	GALLONS	0	GALLONS	SOIL

Caller Remarks:

SPILL IS CONTAINED IN VAULT: OCCURED DURING TRANFERRING OF MATERIAL FROM ONE TANK TO THE OTHER: CLEAN UP IN PROGRESS;

DEC Investigator Remarks:

DEC Piper spoke w/ Jim Merlo, DEPT of ED , Fuel Div., aS per converation, during a transfer of oil from one tank to another, stick cap was left off and resulted in overfill of tank in approx of 2K gallons. Spill was discovered next morning. PTC on site to pump vault of oil. Vault seems to be static indicating no loss to subsurface. PTC to contact DEPT with update. 2/6/07− DECP iper received documentation of cleanup from James MErlo. CLosed. See e−docs if warranted.

Map Identification Number 98 **DRUM RUN** **Spill Number: 0713502** **Close Date: 04/07/2008**
76 MOFFAT ST BROOKLYN, NY TT−Id: 520A−0215−882

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2532 feet to the ESE

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

Source of Spill:	PASSENGER VEHICLE	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Police Department	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	HRAHMED	Contact for more spill info:	OFFICER ZIEGLER	Contact Person Phone:	(718) 574−1814

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/21/2008		OTHER	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:

found 6 50g drums in a stolen car; unsure where they came from; not leaking; drums are rusty; would like a call to tell him what to do with them;

DEC Investigator Remarks:

Tried to call PD few times, the officer in charge of the drums is not around.Need to find out the car owner’s contact number.

04/07/08−Hasan Ahmed− Six 55 gallon drum found and pumped out and notified Dept. of Sanitation to pickup the empty drums.

This case is closed.

Map Identification Number 99 **VACANT LOT NEXT TO HER** **Spill Number: 9515842** **Close Date: 07/15/2005**
83 MACDOUGAL ST BROOKLYN, NY TT−Id: 520A−0046−086

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2565 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 83 MAC DOUGAL ST
Revised zip code: 11233

Source of Spill: UNKNOWN
Notifier Type: Citizen
Caller Name: ALICE GARDENER
DEC Investigator: TLDiaz

Spiller: NYC
Notifier Name: ALICE GARDENER
Caller Agency: CITIZEN
Contact for more spill info:

Spiller Phone:
Notifier Phone: (718) 778−4295
Caller Phone: (718) 778−4295
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
03/11/1996		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:

nyc tore bldg down 10 or 11 years ago and left the tank − now tank is exposed and open

DEC Investigator Remarks:

7/15/05 Site inspection conducted. There is no vacant lot next to #83 however there is a vacant lot next to #93. This lot was fenced off with chain link and access could not be obtained, however, there was a large item under a new looking tarp, but it was not in the shape of a tank. No neighbors were available to verify what this item was. All listed phone numbers on spill report are no longer valid.

Map Identification Number 100 **MENAHAN APT LLC** **Spill Number: 1308386** **Close Date: 11/18/2013**
20 MENAHAN ST BROOKLYN, NY TT−Id: 520A−0293−261

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2575 feet to the NNW

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

Source of Spill: COMMERCIAL/INDUSTRIAL
Notifier Type: Other
Caller Name:
DEC Investigator: AAOBLIGA

Spiller: INV ERIC JOSEPH − MENAHAN APT LLC
Notifier Name:
Caller Agency:
Contact for more spill info: INV ERIC JOSEPH

Spiller Phone:
Notifier Phone:
Caller Phone:
Contact Person Phone: (646) 632−6104

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
11/18/2013		OTHER	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

during delivery loss occurred to floor approx 6−10 gallons, stains evident, slight fuel odor present. voc's 5.1 and below

DEC Investigator Remarks:

Obligado − (Desk Duty) − I spoke with the DOH investigator Joseph tel://9177312769. Last week a tenant compalined of fuel odor after a delivery. A delivery occurred last week between around the 12th or 13th. The building just did an oil to gas conversion approximately 2 weeks ago. According to DOH inspector, fuel company delivered 6−10 gallons before stopping delivery. This number is according to conversation with the tenants. According to the DOH there was a mild odor and 5.1 ppm on the meter on Friday the 15th during the inspection of the basement. There was staining on the floor around the boiler area. He said there were 2 tanks but the fill line to the tank appeared intact and was not disconnected.

DOH inspected the basement, common areas, and 2nd floor complaining tenant's apartment. In the common areas and basement, the PIDs readings were around background levels and there were no odors. DOH only reported to DEC because the spill was greater than 5 gallons. Due to low readings and only minor odors in basement, the DOH inspector did not request any action by DEC, but was only notifying as required by the spill quantity.

I called the building owner Joe (917)660−3630. He said he was unaware of any spill. He confirmed they did an oil to gas conversion. There are two tanks in the basement which may have residual oil which he plans to dispose of. I advised Joe to seal the fill line to prevent future deliveries. Due to small quantity and no health concern raised by DOH, this spill is closed.

Map Identification Number 101 **SERVICE BOX 31332** **Spill Number: 0208654** **Close Date: 02/20/2003**
129 PATCHEN AVE BROOKLYN, NY TT−Id: 520A−0048−086

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2582 feet to the W

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

Source of Spill:	UNKNOWN	Spiller:	UNKNOWN	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:	STEVE PACE	Notifier Phone:	
Caller Name:	SEAN MCKEEVER	Caller Agency:	CON EDISON	Caller Phone:	(212) 580−6763
DEC Investigator:	KMFOLEY	Contact for more spill info:	SEAN MCKEEVER	Contact Person Phone:	(212) 580−6763

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
11/20/2002		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
UNKNOWN PETROLEUM	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SPILL IN A SERVICE BOX LAB RESULTS CAME BACK LESS THEN 1PPM SPILL COULD NOT HAVE BEEN CLEANED UP DUE TO A CAR PARKED OVER THE TOP OF IT CON EDISON REF #146084

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was FOLEY Con Ed e2mis #146084:

20−NOV−2002 0930HRS PETRIE #49755 PROPERTY PROTECTION DEPT REPORTS FOUND 1 GALLON UNKNOWN OIL ON 6 GALLONS WATER IN SB− 31332. NO FIRE OR SMOKE . NO PRIVATE PROPERTY AFFECTED . NO INJURIES. IT APPEARS TO BE CONTAINED TO STRUCTURE. NO SEWERS OR WATERWAYS APPEAR TO BE AFFECTED. NO VISUAL WATER MOVEMENT. NO CRACKS IN STRUCTURE WALLS. TOOK SAMPLE ON A 4 TO 6 HOUR E PRIORITY TURNAROUND. PLACED ENVIROMENTAL STOP TAG # 05318 IN STRUCTURE. CLEAN UP PENDING RESULTS.

UPDATE: 20−NOV−2002 1850HRS LAB RESULTS RETURNED. LSN# 02−10845−001 <1.0PPM

11/21/02 13:30 HRS. −− USED COAGULANT TO SOLIDIFY OIL THEN REMOVED SOLIDS WITH VACTOR. DOUBLE WASHED STRUCTURE. NO SUMP OR DRAIN. REMOVED ENV STOP TAG. CLEANUP 100% COMPLETE.

Map Identification Number 102 **SPILL NUMBER 0030010** **Spill Number: 0030010** **Close Date: 06/28/2000**
1435 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0039−995

MAP LOCATION INFORMATION
Site location mapped by:
Approximate distance from property: 2602 feet to the ESE

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

Source of Spill:	UNKNOWN	Spiller:	MS. YOOLANDO − UNKNOWN	Spiller Phone:	(718) 802−3777
Notifier Type:	Local Agency	Notifier Name:	MS YOOLANDO	Notifier Phone:	(718) 802−3777
Caller Name:	MS YOOLANDO	Caller Agency:	BKLYN BOROUGH PRES.OFFICE	Caller Phone:	(718) 802−3777
DEC Investigator:	MXTIPPLE	Contact for more spill info:	MS.YOOLANDO	Contact Person Phone:	(718) 802−3777

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
06/28/2000		UNKNOWN	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
GASOLINE	PETROLEUM	1.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

cALLER STATED THAT THERE IS A POSSIBLE GAS LEAK AT THIS LOCATION

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE sITE INVESTIGATION REVEALED AN EMPTY STAINLESS STEEL FOOD HAULING TANK OF 6000 GAL CAPACITY

Map Identification Number 103 **NEXT TO 85 MACDOUGAL ST** **Spill Number: 9708059** **Close Date: 11/14/1997**
BY HOWARD AVE & MACDOUGAL BROOKLYN, NY TT−Id: 520A−0050−383

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 2623 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: NEXT TO 85 MACDOUGAL ST
Revised zip code: 11233

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	JOE SCARPULO − HPD	Spiller Phone:	(212) 863−
Notifier Type:	Affected Persons	Notifier Name:	ANTHONY GARDINER	Notifier Phone:	(718) 778−4295
Caller Name:	ANTHONY GARDINER	Caller Agency:	SUPER FOR 85 MACDOUGAL ST	Caller Phone:	(718) 778−4295
DEC Investigator:	MMMULQUE	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
10/02/1997		OTHER	NO	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:

CALLER REPORTS CONSTRUCTION WORKERS WERE EXCAVATING SITE NEXT TO HIS BUILDING WHEN THEY RUPTURED TANK − CALLER REPORTED THIS INCIDENT TO EPA − CALLER'S COMPLAINT TODAY IS FUMES FROM OIL ARE ENTERING HIS BUILDING

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN CALLED HPD ON 10/9/97 GOT REPONSE ON 10/10/97 FROM JOE SCARPULO. HPD INVESTIGATION INDICATES THAT THE OIL TANK WAS RUPTURE BY URBAN RENEWAL CONTRACTOR − HUDSON COMPANY WHO IS INVOLVED IN THE SARATOGA STREET COMPLEX. HUDSON COMPANY WAS USING VACANT LOT TO GAIN ACCESS TO THE CURRENT CONSTRUCTION SITE AND IN THE PROCESS THEY RUPTURED A TANK. AN UNKOWN CONTRACTOR REMOVED THE TANK. THE CASE HAS GONE TO FELINE REVOLUS OF HPD − PHONE (212) 863−6404. UNABLE TO REACH FELINE. SPILL IS ACTIVE UNDER SPILL # 97−07862 AND IS A PIN CLEANUP.

Map Identification Number 104 **77 MACDOUGAL ST** **Spill Number: 9707862** **Close Date: 09/30/2008**
77 MACDOUGAL ST BROOKLYN, NY TT−Id: 520A−0046−087

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2626 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 77 MAC DOUGAL ST
Revised zip code: 11233

Source of Spill:	UNKNOWN	Spiller:	FELINE REVOLOUS − CITY OF NEW YORK(HPD)	Spiller Phone:	(212) 863−6404
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:	MR SCAUSO	Caller Agency:	NYC FIRE HAZMAT	Caller Phone:	(917) 769−0483
DEC Investigator:	SRPAIGE	Contact for more spill info:	MR SCAUSO	Contact Person Phone:	(718) 476−6288

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
10/03/1997		OTHER	NO	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:

VACANT LOT DE3MOLITION REVEALED AN 1000 GALLON TANK WHICH WAS PULLED−SPILL WHEN PULLING TANK

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 11/14/97 mmm: HUDSON COMPANY WORKING ON THE SARATOGA STREET URBAN RENEWAL PROJECT WAS UTILIZING THE VACANT HPD LOT AS ACCESS TO SARATOGA STREET CONSTRUCTION. THE LOT IS OWNED BY HPD, AND NO ACCESS PERMISSION WAS GRANTED. HUDSON COMPANY ALLEGEDLY RUPTURED THE TANK WHEN THEY WERE MOVING HEAVY EQUIPMENT AND SOIL AROUND THE LOT, CAUSING RELEASE. DEC INVESTIGATION REVEALED HPD TO OWN PROPERTY AND HPD, FELINE REVOULOS WAS SUPPOSED TO BE WORKING WITH THE HUDSON COMPANY TO RECTIFY THE SITUATION. THE SPILL WAS ALSO INVESTIGATED UNDER DEC SPILL # 97−08059 WHICH WAS CLOSED AND REFERED TO THIS ACTIVE SPILL NUMBER.

5/10/04 − AUSTIN − TRANSFERRED FROM TOMASELO TO TIPPLE − END

8/23/05 − Raphael Ketani. Case transferred to Jeff Vought.

07/25/08−Vought−Spill reassigned from DEC Vought to DEC Ketani as per DEC Austin.

9/30/08 − S. Paige conducted Technical Review of project file.

An abandoned 1000 gallon UST that had been resting on ground surface for many years was punctured during construction activities. C. Tomasello (DEC) called out Winston Contracting Corporation on 10/3/1997 to clean up the surface spill. Winston Contracting cleaned and removed the abandoned tank and excavated three (3) tons of contaminated soil.

The Attorney General’s Office (OAG) sent demand letters in August and December of 2001 to potential responsible parties (City of

New York (HPD), Monadnock Construction, Inc. and P. Guppy & A.H. Mercede). The costs expended by the Spill Fund were recovered and the case was closed by OAG on 3/6/2002.

A search of the spills database showed that there are no open spills in close proximity to this site as of 10/8/08.

Given readily available documentation, the completed cleanup activities and the closed cost recovery case, no further action is required at this time.

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 105 **DRUM RUN** **Spill Number: 1104918** **Close Date: 08/08/2011**
976 JEFFERSON AVE BROOKLYN, NY TT−Id: 520A−0265−992
IFO CLOSED AUTO SHOP

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 312 feet to the W

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

Source of Spill: COMMERCIAL/INDUSTRIAL Spiller: DIANNA BROWN − UNKNOWN Spiller Phone:
Notifier Type: Local Agency Notifier Name: Notifier Phone:
Caller Name: Caller Agency: Caller Phone:
DEC Investigator: HRAHMED Contact for more spill info: DIANNA BROWN Contact Person Phone: (646) 265−2130

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
07/29/2011		ABANDONED DRUM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

4 Abandon drums of non flamable petroleum material.

DEC Investigator Remarks:

add to next drum run

08/08/11−HRAHMED−Four drums were found at this location during DRUM RUN on 08/04/11. Fenley & Nicol pumped out the waste oil from the partially filled drums. NYC DEP and Sanitation were notified.

This case is closed.

Map Identification Number 106 **KINKED FUEL LINE IN BASEMENT OF HOME** **Spill Number: 0507099** **Close Date: 11/15/2005**
1015 JEFFERSON AVE BROOKLYN, NY TT−Id: 520A−0044−917

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 327 feet to the NW

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	THIRD PARTY SPILL	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	TIMOTHY PARKER	Notifier Phone:	(212) 580−6765
Caller Name:	TIMOTHY PARKER	Caller Agency:	CON ED	Caller Phone:	(212) 580−6765
DEC Investigator:	GDBREEN	Contact for more spill info:	ERT DESK‘	Contact Person Phone:	(212) 580−8383

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
09/12/2005		EQUIPMENT 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

Caller Remarks:

1 quart of product. Has not been cleaned up.

DEC Investigator Remarks:

1601008.000

12−SEP−2005 18:00 HRS. #9 EMERGENCY DEPT.O.S. R.TUCKER EMP# 12264 REPORTS: WHILE RESPONDING TO LOCATION FOR A CUSTOMER COMPLAINT (B−TICKET #BE05030655) 1051 JEFFERSON AVE BELONGING TO T.JONES (P# 718−452−6780) FOUND: APPROX. 1QT OF FUEL OIL (6’ X 4’ AREA COVERED WITH SAND BY THE CONSUMER) FROM A KINKED FUEL LINE, ON TO A DRY CONCRETE FLOOR IN BASEMENT. #9 EMERGENCY OG.S. R. ASHRAF SPOKE WITH O.G.S. S.LORENZON OF THE I&A TO CONFIRM THAT THE I&A EAST GROUP WORKED IN BASEMENT AS THE CUSTOMER CLAIMS. NO WATER.

NO SEWERS OR WATERWAYS APPEAR TO BE AFFECTED. THE SPILL APPEARS TO BE CONTAINED AT THIS TIME. THERE IS NO FIRE INVOLVEMENT. NO SMOKE INVOLVEMENT. THERE WERE NO INJURIES RELATED TO THIS INCIDENT. THERE ARE NO INCLEMENT WEATHER CONDITIONS OR HAZARD THAT CONTRIBUTED TO THIS SPILL. SOME PRIVATE PROPERTY AFFECTED. OWNER OF SUBSTANCES IS 3RD PARTY, THE CONSUMER. MR TUCKER PROVIDED THE CONSUMER WITH THE PHONE NUMBER TO MAKE A CLAIM. THE CUSTOMER WAS INSTRUCTED TO HAVE SPILL CLEANED AND SUBMIT THE BILL. CIG T.PARKER NOTIFIED 18:21 HRS. EH&S B.O'KANE NOTIFIED 18:10 HRS. C.HOGAN 07511

Closed. 11−15−05. see eDocs. GB

Map Identification Number 107 **SARATOGA SQUARE HOUSES −NYCHA** **Spill Number: 9913865** **Close Date: 01/07/2003**
930 HALSEY ST BROOKLYN, NY TT−Id: 520A−0044−187

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 543 feet to the SE

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

Source of Spill:	PRIVATE DWELLING	Spiller:	EDWARD MALONE − NEW YORK CITY HOUSING AUT	Spiller Phone:	(212) 306−8480
Notifier Type:	Responsible Party	Notifier Name:	STEVE SACCACIO	Notifier Phone:	
Caller Name:	EDWARD MALONE	Caller Agency:	NEW YORK CITY HOUSING AUT	Caller Phone:	(212) 306−8480
DEC Investigator:	SACCACIO	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
03/08/2000		EQUIPMENT 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

Caller Remarks:

Bottom bar is missing from a joint, causing a leak and wear on the pipes causing a stain on the ground. A boom has been placed and plumbers are going to the site tomorrow. No callback necessary.

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

Map Identification Number 108 **ABANDONED APT. BUILDING** **Spill Number: 1200165** **Close Date: 05/30/2014**
1102 PUTNAM AVE BROOKLYN, NY TT−Id: 520A−0273−556

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 626 feet to the NNW

ADDRESS CHANGE INFORMATION
Revised street: NO CHANGE
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:	RWAUSTIN	Contact for more spill info:	DEP	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
04/05/2012		DELIBERATE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

SPILLED TO BASEMENT AREA, HEATING OIL.

−−−−−−−−−−−−−− DEP called back to advise material is flamible and they will contract to have it removed.

DEC Investigator Remarks:

FD pumped out tank, 275 AST.House is abandoned.DEP Hazmat considering disposing the fuel.(sr)

08/07/12 csl was sent to

George Lemuel F 229 Albany Avenue Brooklyn, NY 11225 and 1102 Putnam Avenue, Brooklyn.(sr)

** Letter which were sent to George Lemuel F, 1102 Putnam Avenue, Brooklyn, NY 11221 returned undelivered.**

5/30/14 − Austin − Spill contained by NYCDEP Minor spill event − Closed − end

Map Identification Number 109 **PRIVATE RESD ABANDON** **Spill Number: 1200163** **Close Date: 04/10/2012**
1102 PUTNAM AVE BROOKLYN, NY TT−Id: 520A−0273−555

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 626 feet to the NNW

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

Source of Spill: PRIVATE DWELLING
Spiller: FDNY HAZMAT 1 − PRIVATE RESD ABANDON
Spiller Phone:
Notifier Type: Fire Department
Notifier Name:
Notifier Phone:
Caller Name:
Caller Agency:
Caller Phone:
DEC Investigator: SFRAHMAN
Contact for more spill info: FDNY HAZMAT 1
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
04/05/2012		VANDALISM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	10.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Subject ripped out copper lines and spilled oil from tank into basement. 10 gals on floor and FD pumping out remander.

DEC Investigator Remarks:

cross reference to 1200165.

Map Identification Number 110 **765 MACON ST** **Spill Number: 0810922** **Close Date: 05/05/2009**
765 MACON ST BROOKLYN, NY TT−Id: 520A−0223−918

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1209 feet to the SW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	EVERTIGHT TANK CO	Spiller Phone:	
Notifier Type:	Responsible Party	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	SFRAHMAN	Contact for more spill info:	TERRANCE WARNER	Contact Person Phone:	(718) 455−5551

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
12/30/2008		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

INTERIOR TANK, ABOVE GROUND FAILURE. CLEAN UP DONE. GENERATOR OF SPILL IS EVERTIGHT TANK COMPANY− NOT CALLER. THEY HAVE REPAIRED TANK 12/27, MADE DELIVERY TODAY AND FOUND TANK STILL LEAKING.

DEC Investigator Remarks:

12/31/08 Rec'd call from hotline around 8:30 pm on 12/30/08,called home owner @(718)455−5551,no pick up.I responded to the site at around 09:30 pm on 12/30/08.The home owner indicated that he has a contract with Petro Oil for tank repair/service. As such Evertight Tank,on behalf on Petro Oil did repair of the tank few days ago and Petro made oil delivery on 12/30/08.Home owner found oil spill when returned home in the evening.Unknown quantity of oil spilled from the tank nozzle area.Crews emptied the tank and put speedi dry on the floor to absorb the oil.There are woods on the floot that is oil soaked.I spoke with Joe from Evertight this morning and asked him to engage spill clean up experienced crews to do the clean up.I also asked him to take end point sample from the impacted area after removing all oil contaminated stuff and perform a PID survey in the basement/house for air quality reading.Joe indicated that he will hire Petroleum Tank Cleaners to do the work. Spill clean up letter was sent to

Terrence Warner 765 Macon Street Brooklyn, NY 11233−1313 &

Evertight Tank Lining 11 Lansing Street Staten Island, NY 10305 Attn: Joe Ribertelli (sr)

01/02/08 Rec'd call from Joe Ribertelli and Mark Salamic of PTC confirming that PTC has been hired to perform the additional clean up.PTC will make site visit today and work on removing oil soaked wood and check the floor concrete for cracks/holes and removal of contaminated debris.(sr)

05/05/09 Rec'd report from PTC who performed the clean up.Tank was repaired by Evertight.Floor was a concrete floor and had cracked on it.The loose contaminated debris was collected in 55 gallon drums for disposal.The floor was broken and removed and the soil beneath also collected into drums for disposal.PTC indicated that about the entire section of the basement required

removal.Five end point samples were taken.All analytes were below detectable levels.Report in edocs.Case closed.(sr)

Map Identification Number 111 **183 RALPH AVE** **Spill Number: 8909471** **Close Date: 05/06/2008**
183 RALPH AVE BROOKLYN, NY TT−Id: 520A−0044−176

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 1793 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 183 RALPH AVE.
Revised zip code: NO CHANGE

Source of Spill:	INSTITUTIONAL, EDUC, GOV, OTHER	Spiller:	ALMAR FUEL OIL	Spiller Phone:	(212) 438−6676
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:	STANLEY SEMENBERG	Caller Agency:	DEP	Caller Phone:	(212) 566−1235
DEC Investigator:	rvketani	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
12/31/1989		EQUIPMENT FAILURE	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:

2−275G TANKS 1 TANK FAILED AND SPILLED 50 G

DEC Investigator Remarks:

3/17/06 Probably need site visit. Not much info to go on in the file.

Previous entry by KJCARPEN

3/5/08 − Austin − Assigned to Ketani for further investigation − end

5/5/08 − Raphael Ketani. The site had a 50 gal. spill on 12/31/1989. There were two 275 gal. tanks with #2 oil. One failed. The NYFD was on the scene. Almar Fuel Oil (212) 438−6676 was the fuel company. The spill was called in by Stanley Semenberg of DEP (212) 566−1235.

There was a note on a sheet of paper in the file indicating that the former case manager tried to find the site by using Property Shark, but no such address was found. This is the extent of the paper file.

I tried to locate Almar Fuel Oil, and found them in the Brooklyn White Pages. They are at 918 McDonald Avenue. The phone number is (718) 438−6676. I called them up and I was told that their new name is Chief Energy. I asked the person who handles the fuel oil accounts whether there is an account for 183 Ralph Avenue. He said that his records don't go back to 1989 and right now there is no account that would have an address similar to 183.

I tried to locate the site via the DEC PBS database, Property Shark, NYC Property Tax database, and ACRIS. None of these databases listed the site or could find the site.

I will make a site visit.

5/6/08 − Raphael Ketani. I attempted to make the site visit. There is no address marked as 183 Ralph Avenue. There is a small church at the corner of Ralph Avenue and Macon Street. It looked to be of fairly recent construction, no more than maybe 18 years. I took some pictures of the church and the neighboring property, 185 Ralph Avenue. The pictures are in the E−docs. I went to Property Shark and put in the address of the church as 694 Macon Street. The database showed an alternate address as 179 Ralph Avenue, but NOT 183 Ralph Avenue. I entered 185 Ralph Avenue into Property Shark, and it only came up with a McDonough Street alternate address. So it appears that there are no in between addresses for Ralph Avenue.

As there is no more information to go on for locating the site and since the spill took place about 18 years ago, I am closing the spill case.

Map Identification Number 112 **DRUM RUN** **Spill Number: 1002698** **Close Date: 06/10/2010**
25 ROCKAWAY AVE BROOKLYN, NY TT−Id: 520A−0252−646
ON SIDEWALK

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2181 feet to the SE

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

Source of Spill:	UNKNOWN	Spiller:	NYC HAZ MAT 1 − UNKNOWN	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	HRAHMED	Contact for more spill info:	NYC HAZ MAT 1	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
06/09/2010		ABANDONED DRUM	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected

Caller Remarks:

2 drums were left on sidewalk. DEP also advised.

DEC Investigator Remarks:

will try to include in today's drum run (6/9/2010)

6/10/10−HRAHMED−Felney and Nicol pumped out two drums during DRUM RUN on 6/9/10. DEP and Sanitation were notified.

This case is closed.

Map Identification Number 113 **358 BAYBRIDGE ST** **Spill Number: 9514547** **Close Date: 12/31/1997**
358 BAYBRIDGE ST BROOKLYN, NY TT−Id: 520A−0043−468

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2217 feet to the SW

ADDRESS CHANGE INFORMATION
Revised street: 358 BAINBRIDGE ST
Revised zip code: 11233

Source of Spill:	PRIVATE DWELLING	Spiller:	UNKNOWN − Unknown	Spiller Phone:	
Notifier Type:	Other	Notifier Name:	BOB DECK	Notifier Phone:	(718) 624−4842
Caller Name:	BOB DECK	Caller Agency:	PETROLEUM TANK CLEANERS	Caller Phone:	(718) 624−4842
DEC Investigator:	MMMULQUE	Contact for more spill info:	MR BROWN	Contact Person Phone:	(718) 919−2057

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
02/13/1996		VANDALISM	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:

vandals removed piping going to tank. 250 gals in basement

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN

Map Identification Number 114 **ABANDONED BUILDING** **Spill Number: 9614384** **Close Date: 08/12/1997**
964 GATES AVE BROOKLYN, NY TT−Id: 520A−0041−959

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2299 feet to the WNW

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

Source of Spill: INSTITUTIONAL, EDUC, GOV, OTHER Spiller: ABANDONED BUILDING Spiller Phone:
Notifier Type: Fire Department Notifier Name: JOE POLCHA Notifier Phone: (718) 694−2534
Caller Name: JOE POLCHA Caller Agency: NYC FIRE DEPT Caller Phone: (718) 694−2534
DEC Investigator: MMMULQUE 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: Unable or Unwilling RP − DEC Field Response − DEC Corrective Action Required

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
03/11/1997		DELIBERATE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	275.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

ABOVE GROUND TANK THAT IS BELOW GRADE − SOMEONE WENT INTO BASEMENT OF BUILDING AND DISCONNECTED LINE FROM TANK CAUSING TANK TO LEAK INTO THE BASEMENT AND THROUGH THE DIRT FLOOR − OIL IS NOW GETTING INTO THE NEXTDOOR BUILDING

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN PIN JOB CLEANUP. SEE SPILL # 9614376.

Map Identification Number 115 **TANK FAILURE AND POSSIBLE RELEASE TO SOIL** **Spill Number: 1205633** **Close Date: 08/12/2013**
477 DECATUR STREET BROOKLYN, NY TT−Id: 520A−0275−760

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2340 feet to the SW

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

Source of Spill:	PRIVATE DWELLING	Spiller:	ILYA LEFTWICH	Spiller Phone:	
Notifier Type:	Other	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	vszhune	Contact for more spill info:	ILYA LEFTWICH	Contact Person Phone:	(718) 574−6776

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
09/05/2012		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	135.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

Caller advised aprx 135 gallons spilled onto basement floor and seeped through basement crack into soil. Clean up is pending.
Resident is requesting a call back.

DEC Investigator Remarks:

9/5/12−Vought−Primary off−hours responder. Called and spoke to Petro (Dexter Ph:800−645−4328) and tank was a 275−gallon #2 fuel oil AST in one family residential home. Petro last made a delivery of 176 gallons of #2 on 8/29/12. Petro noted that AST was no empty and there as a 20' wide oil stain on concrete in the basement and no signs of liquid prodoct and noted that the oil may have seeped into cracks in the concrete. Vought called and spoke to homeowner (Ilya Leftwich Ph:917−682−2942) and she noted that she is the only one living in the residence and she was away from house for five days and upon returning she had no hot water. She called Petro who then performed a site visit and noted missing oil. Leftwich noted that there were vapors in the basement and first floor of the residence but not the second or third floor where she resides. Vought noted that as no impact to her living areas for the night, that Vought would return call tomorrow with DEC project manager who will perform a site visit. Ilya noted that best time for site visit was 4:30pm for her. Vought spoke to DEC Zhune who resides in close proximity to site and as such

she will perform site visit and also manage spill. Spill assigned to DEC Zhune. Vought called Ilya and left message with DEC Zhune's cell phone contact information and note that DEC Zhune will be onsite today at 4:30pm to perform site visit.

Ealia@Aol.com

09/07/12− Zhune emailed to Ilya the contractor's list.

09/07/12−Zhune called Ilya. She said that she called one of the contractors that Sharif Rahman recommended to her. They came today in the morning about 7:30am. They will sent the proposal to her.

09/19/12−Brian 914−276−2560 from Hydro Environmental Solution. He said they are going to remove the soil contaminaton at this site.

09/21/12− Zhune visited the site. Met Paul Basso from Milro and Brian from Hydro Environmental. Contaminated soil has been excavated. There are some contamination left in place due to structural limitation. A subslab depressurization system and a vapor barrier is going to be installed.

11/29/12− Milro Associates emailed the AST Spill Closure Report dated November 2012. On septembber 10, 2012 Milro removed one leaking 275 gallon AST. The tank was located in the basement of the site. The AST was in poor condition with one corrosion hole noted. Fuel oil impacted soil was excavated. Soil samples were collected as excavation end−point samples from the sidewalks and bottom of the excavation.

The soil anliytical results indicated VOC exceedance in samples collected from the south sidewall (1,3.5 trimethylbenzene 15000 ug/kg, 1,2,4 trimethylbenzene 56000ug/kg, ethylbenzene 7400 ug/kg, isopropylbenzene 3900 ug/kg, n−propylbenzene 11000 ug/kg, total xylenes 35000 ug/kg, n−butylbenzene 10000 ug/kg and naphthelene 25000 ug/kg) and from the west sidewall (1,2,4 trimethylbenzene 5100 ug/kg and total xylenes 1600 ug/kg). Futher excavation could not be completed in the southern and western part of the excavation becouse to the south of the excavation there is the foundation of the residence and to the west of the excavation there ware two support columns for the garage above the basement. A vapor barrier and vapor extraction system to control the petroleum vapors were installed.

93/08/13− A review and receive letter was sent to the owner Ealia Leftwich and the Insurance Company (State Farm). The letter requested the following: 1.− Delineation of soil and grounwater contamination via installation of monitoring well in the driveway adjacent to the south sample.

07/11/13− Hydro Environmental Solution Inc. sent the Groundwater Monitoring and Sampling update letter, dated June 26, 2013. One monitoring well (MW−1) was installed in the driveway approximately 10 feet away from the former AST location. The well was installed to a completion depth of 45 ftbg. One groundwater sample was collected at a depth of 40.9 ftbg. The laboratory analytical results indicate that no VOC constituents were detected in the groundwater collected from MW−1. Some SVOC constituents were detected slightly exceeded their respective Ambient Water Quality Standards of 0.002 ug/l and included; benzo(a) anthracene (0.03 ug/l), benzo (b) fluoranthene (0.2 ug/l), and Chrysene (0.02 ug/l). Spill Closed

Map Identification Number 116 **BASEMENT** **Spill Number: 0612742** **Close Date: 01/11/2016**
1419 BUSHWICK AVE BROOKLYN, NY TT−Id: 520A−0038−317

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2484 feet to the ESE

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

Source of Spill:	COMMERCIAL/INDUSTRIAL	Spiller:	UNKOWN.	Spiller Phone:	
Notifier Type:	Fire Department	Notifier Name:		Notifier Phone:	
Caller Name:		Caller Agency:		Caller Phone:	
DEC Investigator:	hrpatel	Contact for more spill info:	GREG PERROTA	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
02/24/2007		EQUIPMENT FAILURE	NO	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	250.00	GALLONS	250.00	GALLONS	SOIL

Caller Remarks:

heavy odor of fuel in building tank failure FDNY HAZ MAT has clean spill up Barrell 2 85 galdrumms and 2 55gal gal drumm to contain materila violation issed # 14664

DEC Investigator Remarks:

02/26/07−Hiralkumar Patel. visited site on 02/24/07. site has two 275 gal #2 oil ASTs on leg. petro technician was working on scene. as per him, oil leaked from bottom of one of these tanks. he was disconnecting all lines from this leaking tank and installing supply line, vent line from other good tank. technician tested supply/return lines and found tight. he observed some corrosion at bottom of the no leaking tank also. oil leaked on broken concrete floor in tank area and ran towards boiler room. there is room between tank area and boiler room, filled with debris. sheetrock soaked with oil. space between this sheetrock wall and foundation wall and found contamination there also. no knowledge of floor condition in this area. four drums filled with oil, left outside of building (inside building boundry) by FDNY. they pumped out remaining oil from tank and put in drums. no labels were on drums.

spoke with Joe (718−628−3300) at Petro. they have delivered 356 gal oil on 02/23/07. as per their record, they delivered 529 gal oil on 02/06/07 as owner compalined no oil in tanks. owner explained to Joe for not having oil as there was leak in steam line which ran boiler all time.

spoke with Ms. Vennis Hernandez, building super. she asked to call Rocky. spoke with owner's friend Mr. Rocky (PH. 917−709−0511, fax: 718−279−9464), who is handling property. asked him to hire contractor for detail cleanup and to removed drums from outside of building. Rocky asked to send letter to owner at following address:

Gregory Prrotta (owner) Regional Management & Construction Inc. 203−20 Rocky Hill Road Bayside, NY 11361

spoke with Rocky today. he hasn't hired anybody and blaming oil company for spill. he sounds like he will not do any cleanup.

spoke to Joe. he hasn't got any call from owner or owner's management for cleanup. and they are not taking responsiblity.

02/27/07−Hiralkumar Patel. received message from Ms. Hernandez. she gave Mr. Prrotta's phone number (718−357−5801). left message for Mr. Prrotta.

received call from Mr. Prrotta. he believes oil spilled was less than one gallon. he mentioned that drums, which were left out of building by FDNY, were stolen during night. he told that Petro did replaced supply line on 02/22/07 and delivered oil on 02/23/07. spill happened on 02/24/07. Mr. Prrotta asked to send letter at following address:

Gregory Prrotta Regional Management 12−40 Clintonville Street Whitestone, NY 11357 Ph. (718) 357−5801 Ext. 522 Fax (646) 304−1118

sent CSL to Mr. Prrotta, to both addresses (whitestone, bayside) requiring soil/groundwater delineation, endpoint samples and vapor barrier installation. letter faxed to Mr. Prrotta.

06/19/07−Hiralkumar Patel. left message for Mr. Prrotta. 10/09/07−Hiralkumar Patel. left message for Mr. Prrotta. 10/10/07−Hiralkumar Patel. received message from Mr. Prrotta. left message for Mr. Prrotta. 10/15/07−Hiralkumar Patel. received message from Mr. Prrotta asking fax number. left message for Mr. Prrotta with office fax number. 10/31/07−Hiralkumar Patel. left message for Mr. Prrotta. 11/13/07−Hiralkumar Patel. received message from Mr. Prrotta asking for fax number. sent fax to Mr. Prrotta with fax number and email address.

11/29/07−Hiralkumar Patel. left message for Mr. Prrotta. 01/31/08−Hiralkumar Patel. left message for Mr. Prrotta to response by Feb. 4, 2008. 02/05/08−Hiralkumar Patel. received message from Mr. Prrotta. left message for Mr. Prrotta.

08/17/12−Hiralkumar Patel. tried Mr. Prrotta's number, but not in−service.

11/17/14−Hiralkumar Patel. alternate address: none

no PBS or other spills found.

11/20/14−Hiralkumar Patel. using address for Regional Managment & Construction Inc., found new number for Mr. Perrotta. 11:52 AM:− spoke with Mr. Perrotta. informed him about the open spill case. he mentioned that spill was cleaned up in 2007. he will look for documents. informed him that a subsurface investigation is needed, if cleanup documents are not available. Mr. Perrotta mentioned that the site is using gas heating service now.

Regional Management & Construction, Inc.

property owner c/o Gregory Perrotta 108 West Merrick Road Freeport, NY 11520 Ph. (800) 573−0739

(718) 279−9880

(516) 662−8422 email: gperrotta@aol.com

12:29 PM:− sent letter (including copy of letter dated 02/27/07) to Mr. Perrotta requiring submission of either spill cleanup documents from 2007 or subsurface investigation report, by the end of 01/30/2015. letter emailed to Mr. Perrotta.

01/12/13−Hiralkumar Patel. from junk mailbox, found email from Mr. Perrotta (at 12:36 PM) dated 12/19/14. he sent copy of lab report. as per the lab report, Berninger Environmental collected one sample of exposed sand/soil on basement, on 03/12/2007. the sample was analyzed for SVOCs only. no SVOCs found in the sample.

9:59 AM:− left message for Mr. Perrotta. 10:02 AM:− left message for Walter Berninger at Berninger Environmental.

2:24 PM:− received call from Mr. Perrotta. informed him that soil/sand sample in 2007 was analyzed for SVOCs only and further investigation may be needed based on information received from Berninger Env. scheduled a site inspection at 2:30 PM on 01/21/15.

01/14/15−Hiralkumar Patel. 12:00 PM:− received call from Mr. Berninger. he could not find any documents related to the site.

01/21/15−Hiralkumar Patel. 2:30 PM:− went to the site for inspection, but Mr. Perrotta did not come. no access to the basement for inspection.

01/22/15−Hiralkumar Patel. 8:12 AM:− left message for Mr. Perrotta.

02/04/15−Hiralkumar Patel. received message from Mr. Perrotta (at 4:56 PM on 02/03/15).

01/07/16−Hiralkumar Patel. 10:53 AM:− spoke with Mr. Perrotta and scheduled a site inspection at 10 AM on 01/11/16.

01/11/16−Hiralkumar Patel. 10:15 AM:− visited site and met Mr. Perrotta. inspected building basement. Mr. Perrotta mentioned that the on−site tanks were removed after the spill incident in 2007. concrete floor in the former tank area was found in good condition. drywalls of the small storage room between the tank location area and the boiler room, have been replaced. no odors noted in basement or in space between the storage room wall and the building’s foundation wall.

case closed based on available information and field observations.

Map Identification Number 117 **SPILL NUMBER 0105366** **Spill Number: 0105366** **Close Date: 09/28/2001**
233 HOWARD AVENUE BROOKLYN, NY TT−Id: 520A−0046−113

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2499 feet to the S

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:	WAIMAN WONG	Caller Agency:	NYC DEP	Caller Phone:	(718) 595−4784
DEC Investigator:	TJDEMEO	Contact for more spill info:	WAIMAN WONG	Contact Person Phone:	(718) 595−4784

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
08/17/2001		ABANDONED DRUM	YES	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	305.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

4 55 gal drums and 1 85 gal drum of waste oil on sidewalk − do not appear to be leaking

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO 09/28/2001 − Drums were pumped out by Milro under State Pin # for drum removel. Empty drums were left on site for pick up by New York City Sanatation Department. wtc

Map Identification Number 118 **73 GROVE ST/BKLYN** **Spill Number: 9102458** **Close Date: 06/03/1991**
73 GROVE STREET BROOKLYN, NY TT−Id: 520A−0044−368

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2504 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: Citizen | Notifier Name: | Notifier Phone:
Caller Name: BOB THOMPSON | Caller Agency: CITIZEN | Caller Phone: (718) 453−3352
DEC Investigator: MCTIBBE | Contact for more spill info: | Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
05/27/1991	06/03/1991	EQUIPMENT FAILURE	UNKNOWN	NO

NO MATERIAL INFORMATION GIVEN FOR THIS SPILL

Caller Remarks:

SEWAGE BACKING UP IN BASEMENT,EPA & DOH NOTIFIED,REFERRED TO NYCDEP SEWER MAINTENANCE.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE 10/10/95: This is additional information about material spilled from the translation of the old spill file: SEWAGE

Map Identification Number 119 **STOLEN VAN** **Spill Number: 0713341** **Close Date: 03/21/2008**
76 MOFFAT ST BROOKLYN, NY TT−Id: 520A−0215−880

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2532 feet to the ESE

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

Source of Spill: COMMERCIAL VEHICLE | Spiller: UNKNOWN | Spiller Phone:
Notifier Type: Fire Department | Notifier Name: | Notifier Phone:
Caller Name: | Caller Agency: | Caller Phone:
DEC Investigator: smsanges | Contact for more spill info: DONALD ENG | Contact Person Phone: (646) 584−6483

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
03/17/2008		ABANDONED DRUM	NO	

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
WASTE OIL/USED OIL	PETROLEUM	330.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

NY ECB−6589 abandoned veh at location for 6 days. Has 6

55 gal drum of waste oil. nothing leaking at this time.

DEC Investigator Remarks:

Sangesland called the NYPD 83rd Pct. 718−574−1605 to check status of oil drums. (Auto theft contact at 83rd Pct is Mr. Lampkin) They will check and call back. Encon Police ran the plate: Vehicle − 1994 Blue Chevy AstroVan Owner: Mohammad Chowdhry, 39 Turner Pl #1B, Brooklyn, NY 11218

3/21/2008 Sangesland has made several calls to the 83rd Pct. and spoke to Mr Lampkin. He knows nothing about this vehicle and nothing about the oil in the drums inside this vehicle. If he finds out about the vehicle and needs help disposing of the oil, he will contact the DEC for assistance. No additional information − Spill Closed

Map Identification Number 120 **119 LINDEN STREET/BKLYN** **Spill Number: 8809175** **Close Date: 02/27/1989**
119 LINDEN STREET BROOKLYN, NY TT−Id: 520A−0040−902

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 2577 feet to the NNW

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

Source of Spill: PRIVATE DWELLING Spiller: WEATHER FUEL OIL CO Spiller Phone: (718) 647−1400
Notifier Type: Citizen Notifier Name: Notifier Phone:
Caller Name: OFFICER KANER Caller Agency: NYCFD Caller Phone: (212) 847−0588
DEC Investigator: JCGRATHW Contact for more spill info: Contact Person Phone:

Spill Date	Date Cleanup Ceased	Cause of Spill	Meets Cleanup Standards	Penalty Recommended
02/25/1989	02/27/1989	TANK OVERFILL	UNKNOWN	NO

Material Spilled	Material Class	Quantity Spilled	Units	Quantity Recovered	Units	Resource(s) Affected
#2 FUEL OIL	PETROLEUM	200.00	GALLONS	0.00	GALLONS	SOIL

Caller Remarks:

SPILL IN BASEMENT, NYCFD RESPONDED, CONTAINED & WAITING FOR CLEAN UP CREW.

DEC Investigator Remarks:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was GRATHWOL

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
0103489	MANHOLE #567	HALSEY ST & BROADWAY	BROOKLYN
0500513	RESIDENCE	842 MACON ST	BROOKLYN
9808291	RESIDENTS	1124 PUTNAM AVE	BROOKLYN
1504969	RESIDENCE	1103 PUTNAM AVE	BROOKLYN
9411936	1203 BUSHWICK AVENUE	1203 BUSHWICK AVENUE	BROOKLYN
1104045	PRIVATE HOME	1199 BUSHWICK AVE	BROOKLYN
0211053	ON SIDEWALK	1152 BUSHWICK AVE	BROOKLYN
0508407	PIERRE HOME	1016 HALSEY STREET	BROOKLYN
0207884	PUTNAM STREET AT	BUSHWICK AVE & PUTNAM	BROOKLYN
1005593	PRIVATE RESIDENCE	96 CORNELIA ST	BROOKLYN
1006074	PRIVATE RESD	844 HANCOCK ST	BROOKLYN
0109008	SPILL NUMBER 0109008	630 DECATUR ST	BROOKLYN
9413379	1063 HALSEY STREET	1063 HALSEY STREET	BROOKLYN
9501663	618 DECATUR ST	618 DECATUR ST	BROOKLYN
9408841	618 DECATUR ST	618 DECATUR ST	BROOKLYN
1309904	APT BLD	74 ELDERT ST	BROOKLYN
9208657	1084 BUSHWICK AVE.	1084 BUSHWICK AVE	BROOKLYN
9113071	1084 BUSHWICK AVE	1084 BUSHWICK AVE	BROOKLYN
0007341	MANHOLE 552	CORNELIUS ST/EVERGREEN AVE	BROOKLYN
9713636	RESIDENCE AT	555 BAINBRIDGE STREET	BROOKLYN
9403319	RES. FIGUE ROA	1074 HALSEY ST	BROOKLYN
1304424	APT BUILDING	449 BAINBRIDGE ST	BROOKLYN
1606715	OFFICE BASEMENT	1674 BROADWAY	MANHATTEN
0914370	217916; EVERGREEN AVE AND HALSEY AVE	EVERGREEN AVE AND HALSEY AVE	BROOKLYN
1216230	PRIVATE RESIDENCE	559 DECATUR ST	BROOKYLN
0005848	SPILL NUMBER 0005848	546 BAINBRIDGE ST	BROOKLYN
1003211	CARE FOR THE HOMELESS	1675 BROADWAY	BROOKLYN
0612127	BASEMENT	126 WEIRFIELD ST	BROOKLYN

9711144	FRAZIER BROTHERS	79 RALPH AVE	BROOKLYN
9106421	444 BAINBRIDGE ST	444 BAINBRIDGE ST	BROOKLYN
0890349	209621; RALPH AVE; M−3332 E/S RALPH AVE	RALPH AVE; M−3332 E/S RALPH AVE	
0890141	207045; RALPH AVE	RALPH AVE	
1401520	APT BUILDING	489 CHAUNCEY ST	BROOKLYN
1506752	SOIL	1193 JEFFERSON AVE	BROOKLYN
0611391	88 COVERT STREET	88 COVERT STREET	BROOKLYN
9414864	143 WEIRFIELD ST	143 WEIRFIELD ST	BROOKLYN
1502435	BROADWAY DECATUR LLC	768 DECATUR ST 8 ROCKAWAY AVE	BROOKLYN
9510814	RALPH AVE & MADISON ST	RALPH AVE & MADISON ST	BROOKLYN
8800334	766 HALSEY ST/BROOKLYN	766 HALSEY STREET	NEW YORK CITY
9512828	598 BAINBRIDGE ST	598 BAINBRIDGE ST	BROOKLYN
9608686	418 BAINBRIDGE ST	418 BAINBRIDGE ST	BROOKLYN
0901432	APT BLDG	1004−1006 GATES AVE	BROOKLYN
1216108	BASEMENT	1142 HANCOCK STREET	BROKLYN
9809495	MANHOLE 2270	MONROE ST / RALPH AV	BROOKLYN
9415088	539 CHAUNCEY STREET	539 CHAUNCEY STREET	BROOKLYN
9415076	539 CHAUNCEY STREET	539 CHAUNCEY STREET	BROOKLYN
0301275	FORMER JOSEPH JENKINS HOME	197 RALPH AVENUE	BROOKLYN
0410958	PRIVATE RES.	1214 JEFFERSON AVE	BROOKLYN
9912025	GRANT RESIDENCE	335 MARION ST	BROOKLYN
9405983	45 RALPH AVENUE	45 RALPH AVENUE	BROOKLYN
1002886	APARTMENT COMPLEX	1028 BUSHWICK AVE	BROOKLYN
9412090	746 HALSEY ST	746 HALSEY ST	BROOKLYN
9514505	VAULT 2591	1037 GATE AVE	BROOKLYN
9112908	559 CHAUNCEY ST	559 CHAUNCEY ST	BROOKLYN
9712718	STREET	915 PUTNAM AVE	BROOKLYN
0314273	PUBLIC SCHOOL	794 MONROE ST	BROOKLYN
0111790	736 HALSEY	736 HALSEY ST	BROOKLYN
0210184	SPILL NUMBER 0210184	1058 DECATUR ST	BROOKLYN
0011863	SPILL NUMBER 0011863	30 COOPER ST	MANHATTAN
1002795	PRIVATE DWELLING	734 HALSEY STREET	BROOKLYN
1500030	RESIDENCE	553 MACDONOUGH STREET	BROOKLYN
0812815	APT BLDG	38 COOPER ST	BROOKLYN
9416807	368 BAINBRIDGE STREET	368 BAINBRIDGE STREET	BROOKLYN
9902882	GIVINGS RESIDENCE	671 EVERGREEN AVE	BROOKLYN
1012886	DRUM RUN	974 GATES AVE	BROOKLYN
0605737	DRUM RUN	974 GATES AVE	BROOKLYN
9515677	AUSTIN RES	201 SUMTER ST	BROOKLYN
9415493	743 HANCOCK STREET	743 HANCOCK STREET	BROOKLYN
9311500	743 HANCOCK ST.	743 HANCOCK STREET	BROOKLYN
9010983	743 HANCOCK ST/BKLYN	743 HANCOCK STREET	BROOKLYN
9612944	ABANDONED BUILDING	288 CHAUNCEY ST	BROOKLYN
9703371	ENGINE CO. 222 FDNY −DDC	32 RALPH AVENUE	BROOKLYN

0111424	X	237 RALPH AVE	BROOKLYN
1409891	APARTMENT	66 COOPER	BROOKLYN
9713461	RESIDENCE	190 CORNELIA ST	BROOKLYN
9308510	710 HALSEY STREET	710 HALSEY STREET	BROOKLYN
9713409	SPILL NUMBER 9713409	196 CORNELIA ST	BROOKLYN
9212901	130 SCHAFFER STREET	130 SCHAFFER STREET	BROOKLYN
9911428	PILGRIM CHRISTIAN ACADEMY	600 CENTRAL AVE	BROOKLYN
9312168	35 GROVE STREET	35 GROVE STREET	QUEENS
0013488	SPILL NUMBER 0013488	EVERGREEN AV/COOPER ST	BROOKLYN
9208024	464 DECATUR STREET	464 DECATUR STREET	BROOKLYN
1411277	DRUM RUN	181 PATCHEN AVE	BROOKLYN
9412173	509 MCDONOUGH ST	509 MCDONOUGH ST	BROOKLYN
9003612	MACDOUGAL ST/SARATOGA AVE	MACDOUGAL ST/SARATOGA AVE	NEW YORK CITY
9214459	940 GATES AVE	940 GATES AVE	BROOKLYN
0811999	PRIVATE DWELLING	1224 HANCOCK ST	BROOKLYN

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 121 **SING KIT WONG** **Facility Id: NY09086** **Source: NYC FIRE DEPT**
10 SARATOGA AVE BROOKLYN, NY 11233 TT−Id: 660A−0001−982

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 186 feet to the WNW*

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

NOTE: This is an archived database

Comments: FUEL OIL 2000G

Map Identification Number 122 **SARATOGA VILLAGE (OCEAN HILL APTS)** **Facility Id: 2−474258** **Source: NYS DEC**
940 HANCOCK STREET BROOKLYN, 11223 TT−Id: 640A−0016−128

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 243 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 33−35 SARATOGA AVE
Revised zip code: 11233

Operator Name: FUEL OIL REMEDIATION UNIT
Owner Name: − FUEL OIL REMEDIATION COORDINATOR
Owner Company: NEW YORK CITY HOUSING AUTHORITY
Owner Address: 23−02 49TH AVENUE, LONG ISLAND CITY, NY 11101

Operator Phone #: (718) 707−5725
Owner Type: NYC Housing Authority (Local Gov)

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
OLD 1	Closed − Removed	#2 Fuel Oil	15000	Underground	10/01/1966		06/01/2000
1	In Service	#2 Fuel Oil	5000	Underground	07/01/2000		
The following tank(s) were either deleted from the reported data or the number was re−assigned.							
001	Temp Out of Service	#1 2 OR 4 FUEL OIL	15000	Underground	10/01/1966		
NEW TK #1	In Service	#1 2 OR 4 FUEL OIL	5000	Underground	07/01/2000		
OLD TK #1	Closed−Rmvd from Ground	#1 2 OR 4 FUEL OIL	15000	Underground	10/01/1966		06/01/2000

**** TANK INFO FOR THIS SITE CONTINUES ON NEXT PAGE ****

TANK NUMBER:	OLD 1	TANK TYPE:	Steel/Carbon Steel/Iron	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	Wrapped	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Steel/Carbon Steel/Iron	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	Product Level Gauge (A/G)	SPILL PREVENTION:		DISPENSER METHOD:	Suction
TANK NUMBER:	1	TANK TYPE:	Fiberglass Coated Steel	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial − Electronic Monitoring In−Tank System (ATG)	TK SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING EXT. PROTECTN:	Jacketed	PIPING LEAK DETECTN:	Interstitial − Manual Monitoring Exempt Suction Piping	PIPE SEC. CONTAINMNT:	Double−Walled (Underground)
PIPING TYPE:	Flexible Piping	PIPING LOCATION:	Underground/On−ground		
OVERFILL PROTECTION:	High Level Alarm Automatic Shut−Off	SPILL PREVENTION:	None	DISPENSER METHOD:	Suction

The following tank data pertains to a tank or tanks that were either deleted from the reported data or the tank number was re−assigned.

TANK NUMBER:	001	TANK TYPE:	Steel/Carbon Steel	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	Wrapped (Piping)	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Steel/Iron	PIPING LOCATION:	Underground		
OVERFILL PROTECTION:		SPILL PREVENTION:		DISPENSER METHOD:	Suction
TANK NUMBER:	NEW TK #1	TANK TYPE:	Fiberglass Coated Steel	TK INT. PROTECTION:	
TANK EXT. PROTECTION:	Fiberglass	TANK LEAK DETECTN:	Interstitial Monitoring In−Tank System	TK SEC. CONTAINMNT:	Double−Walled Tank
PIPING EXT. PROTECTN:	Other	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:		PIPING LOCATION:	Underground		
OVERFILL PROTECTION:		SPILL PREVENTION:		DISPENSER METHOD:	Suction
TANK NUMBER:	OLD TK #1	TANK TYPE:	Steel/Carbon Steel	TK INT. PROTECTION:	None
TANK EXT. PROTECTION:	None	TANK LEAK DETECTN:	None	TK SEC. CONTAINMNT:	None
PIPING EXT. PROTECTN:	Wrapped (Piping)	PIPING LEAK DETECTN:		PIPE SEC. CONTAINMNT:	
PIPING TYPE:	Steel/Iron	PIPING LOCATION:	Underground		
OVERFILL PROTECTION:		SPILL PREVENTION:		DISPENSER METHOD:	Suction

Map Identification Number 123 **HENRYS HARDWARE** **Facility Id: NY04722** **Source: NYC FIRE DEPT**
1547 BROADWAY BROOKLYN, NY 11221 TT−Id: 660A−0002−689

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 383 feet to the E

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

NOTE: This is an archived database

Comments: RM PNTS 150G KO 25G TURPS 25G
LEMON OIL 5G BENZINE 20G

Map Identification Number 124 **NYCHA TRIBOROUGH PRESERVATION** **Facility Id: 2−474266** **Source: NYS DEC**
930 HALSEY STREET (AKA 55 SARATOGA AVENUE) BROOKLYN, 11233 TT−Id: 640A−0016−129

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 516 feet to the S

ADDRESS CHANGE INFORMATION
Revised street: 930 HALSEY STREET
Revised zip code: NO CHANGE

Operator Name: C&C APARTMENT MANAGEMENT LLC
Operator Phone #: (212) 348−3248
Owner Name: −
Owner Company: NEW YORK CITY HOUSING AUTHORITY
Owner Type: NYC Housing Authority (Local Gov)
Owner Address: 23−02 49TH AVENUE, LONG ISLAND CITY, NY 11101

TANK NUMBER	TANK STATUS	TANK CONTENT	CAPACITY GALLONS	TANK LOCATION	INSTALL DATE	TEST DATE	CLOSE DATE
1	Closed − In Place	#2 Fuel Oil	15000	Underground	11/01/1980	03/04/2013	02/25/2016
The following tank(s) were either deleted from the reported data or the number was re−assigned.							
001	In Service	#1 2 OR 4 FUEL OIL	15000	Underground	11/01/1980	05/18/1998	

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 125 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004060885**
NYSDEC Address: MH37688−W BROADWAY & JEFFERSON NEW YORK, NY 10001 TT−Id: 740A−0015−133

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 152 feet to the NNW*

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / JEFFERSON AVE
Revised zip code: 11221

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	2	CUBIC YDS	GENERATED	2000		

Map Identification Number 126 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004185443**
NYSDEC Address: BROADWAY & HANCOCK ST BROOKLYN, NY 11221 TT−Id: 740A−0067−943
EPA (RCRA) Name: CON EDISON − MANHOLE 15780
EPA (RCRA) Address: BROADWAY & HANCOCK ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 246 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / HANCOCK ST
Revised zip code: UNKNOWN

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: FRANKLYN MURRAY Source Type: Annual/Biennial Report update with Notification Contact Phone: 212−460−2808 Contact Info Date: 03/23/2010
Contact Name: CAROLINE ISKANDER Source Type: Emergency Contact Phone: 718−666−4714 Contact Info Date: 07/23/2009

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	400	GALLONS	GENERATED	2009		

Map Identification Number 127 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004613824**
NYSDEC Address: 1038 JEFFERSON AVE SB 21488 BROOKLYN, NY 11221 TT−Id: 740A−1000−861

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 270 feet to the NNE

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	150	GALLONS	GENERATED	2014		

Map Identification Number 128 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004663886**
NYSDEC Address: 1038 JEFFERSON AVE STRUCTURE # 21488 BROOKLYN, NY TT−Id: 740A−1001−127

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 270 feet to the NNE

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

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	50	GALLONS	GENERATED	2014		

Map Identification Number 129 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004668851**
NYSDEC Address: 1038 JEFFERSON AVE BROOKLYN, NY TT−Id: 740A−1001−146
STRUCTURE # 21488

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 270 feet to the NNE

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

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	30	GALLONS	GENERATED	2014		

Map Identification Number 130 **NYSDEC Name:** **NYCHA − OCEAN HILL HOUSES** **Facility Id: NYR000075663**
NYSDEC Address: 33−35 SARATOGA AVE BROOKLYN, NY 11233 TT−Id: 740A−0014−645
EPA (RCRA) Name: NYCHA − OCEAN HILL HOUSES
EPA (RCRA) Address: 33−35 OCEAN HILL & SARATOGA SQ BROOKLYN, NY 112332516

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 297 feet to the SSE

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

This facility has been deleted from the reported data. Data reflects last reported information.

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 08/12/1999
Incinerator:
Transporter:
Contact Name: FRANK OCELLO Source Type: Implementer Contact Phone: 212−306−3229 Contact Info Date: 01/01/2007
Contact Name: FRANK OCELLO Source Type: Notification Contact Phone: 212−306−3229 Contact Info Date: 08/12/1999

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	No hazardous waste activity reported by NYS up to 12/26/2016.						

Map Identification Number 131 **NYSDEC Name:** **NYCTA − BROADWAY CORNALIA SUBSTATION** **Facility Id: NY0000228999**
NYSDEC Address: 1482 BROADWAY BROOKLYN, NY 11221 TT−Id: 740A−0014−191
EPA (RCRA) Name: NYCTA − BROADWAY CORNALIA SUBSTATION
EPA (RCRA) Address: 1482 BROADWAY BROOKLYN, NY 112214211

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 301 feet to the NW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 04/15/1994
Incinerator:
Transporter:
Contact Name: CHARLES BURRUS Source Type: Notification Contact Phone: 718−330−4581 Contact Info Date: 04/15/1994

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE 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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
NONE	Site reported by US EPA. No hazardous waste activity reported by NYS.						

Map Identification Number 132 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004808079**

NYSDEC Address: 1041 JEFFERSON AVE SB 21486 BROOKLYN, NY TT−Id: 740A−0140−947

EPA (RCRA) Name: CON EDISON

EPA (RCRA) Address: 1041 JEFFERSON AVE BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 357 feet to the N

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 07/16/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 07/16/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2015		

Map Identification Number 133 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004413181**

NYSDEC Address: 1547 BROADWAY BROOKLYN, NY 11221 TT−Id: 740A−0100−010

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 382 feet to the E

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	1300	POUNDS	GENERATED	2014		

Map Identification Number 134 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004589594**
NYSDEC Address: FO 912 HALSEY ST SB 20302 BROOKLYN, NY 11233 TT−Id: 740A−1002−027

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 383 feet to the S

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2014		

Map Identification Number 135 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004473575**
NYSDEC Address: 917 HANCOCK ST SB20686 BROOKLYN, NY 11233 TT−Id: 740A−0106−327
EPA (RCRA) Name: CON EDISON SERVICE BOX: 20686
EPA (RCRA) Address: 917 HANCOCK ST BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 384 feet to the WSW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 03/20/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 04/20/2014

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	GALLONS	GENERATED	2014		

Map Identification Number 136 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004558847**
NYSDEC Address: FO 996 HANCOCK ST MH 2026 BROOKLYN, NY 11221 TT−Id: 740A−1001−701
EPA (RCRA) Name: CON EDISON MANHOLE: 2326
EPA (RCRA) Address: 996 HANCOCK ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 402 feet to the ENE

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 06/10/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 07/10/2014

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	GALLONS	GENERATED	2014		

Map Identification Number 137 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004496311**

NYSDEC Address: 999 HANCOCK AVE SB 20694 BROOKLYN, NY 11221 TT−Id: 740A−0111−354

EPA (RCRA) Name: CON EDISON SERVICE BOX: 20694

EPA (RCRA) Address: 999 HANCOCK ST FRONT OF BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 409 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: 999 HANCOCK ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 04/10/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 05/10/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2014		

Map Identification Number 138 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004476834**

NYSDEC Address: FRONT OF 869 HALSEY ST SB20356 BROOKLYN, NY 11201 TT−Id: 740A−0107−282

EPA (RCRA) Name: CON EDISON SERVICE BOX: 20356

EPA (RCRA) Address: 869 HALSEY ST BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 422 feet to the SSW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 03/24/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 04/24/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	70	GALLONS	GENERATED	2014		

Map Identification Number 139 **NYSDEC Name:** **NYNEX** **Facility Id: NYP000912832**
NYSDEC Address: BROADWAY & WEIRFIELD BROOKLYN, NY 11221 TT−Id: 740A−0011−822

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 435 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / WEIRFIELD ST
Revised zip code: NO CHANGE

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	2	CUBIC YDS	GENERATED	1994		

Map Identification Number 140 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004185450**
NYSDEC Address: BROADWAY & WEIRFIELD − MH 2327 BROOKLYN, NY 11201 TT−Id: 740A−0067−790
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: BROADWAY & WEIRFIELD ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 435 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / WEIRFIELD ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: CAROLINE ISKANDER Source Type: Emergency Contact Phone: 718−666−4714 Contact Info Date: 07/23/2009
Contact Name: CAROLINE ISKANDER Source Type: Implementer Contact Phone: 718−666−4714 Contact Info Date: 06/01/2016

Historically listed as the following USEPA RCRA Generator Size(s) as well:
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
D008	Lead	200	GALLONS	GENERATED	2009		

Map Identification Number 141 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004185492**
NYSDEC Address: BROADWAY & WEIRFIELD ST BROOKLYN, NY 11221 TT−Id: 740A−0065−805
EPA (RCRA) Name: CON EDISON − MANHOLE 2327
EPA (RCRA) Address: BROADWAY & WEIRFIELD ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 435 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / WEIRFIELD ST
Revised zip code: NO CHANGE

US EPA RCRA Type: LARGE QUANTITY GENERATOR
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: FRANKLYN MURRAY Source Type: Annual/Biennial Report update with Notification Contact Phone: 212−460−2808 Contact Info Date: 03/23/2010
Contact Name: CAROLINE ISKANDER Source Type: Emergency Contact Phone: 718−666−4714 Contact Info Date: 07/23/2009

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	600	GALLONS	GENERATED	2009		

Map Identification Number 142 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004552915**

NYSDEC Address: SEC BROADWAY & WEIRFIELD ST MH 15788 BROOKLYN, NY 11207 TT−Id: 740A−1001−200

EPA (RCRA) Name: CON EDISON MANHOLE: 15788

EPA (RCRA) Address: BROADWAY & WEIRFIELD STSE COR BROOKLYN, NY 11207

MAP LOCATION INFORMATION
Site location mapped by: ADDRESS MATCHING
Approximate distance from property: 435 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: BROADWAY / WEIRFIELD ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 06/04/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 07/04/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	100	GALLONS	GENERATED	2014		

Map Identification Number 143 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004824054**

NYSDEC Address: 48 SARATOGA AVE SB 41968 BROOKLYN, NY TT−Id: 740A−0140−514

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (4)
Approximate distance from property: 440 feet to the SSW

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

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
D003	Solid waste that exhibits the characteristic of reactivity	1000	POUNDS	GENERATED	2015		

Map Identification Number 144 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004734133**

NYSDEC Address: FRONT OF 15 CORNELIA ST SB12291 BROOKLYN, NY 11221 TT−Id: 740A−0129−972

EPA (RCRA) Name: CON EDISON

EPA (RCRA) Address: 15 CORNELIA ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 449 feet to the NNW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 02/19/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 02/19/2015

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	50	GALLONS	GENERATED	2015		

Map Identification Number 145 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004308219**

NYSDEC Address: 17 WEIRFIELD ST MH 47378 BROOKLYN, NY TT−Id: 740A−0091−536

EPA (RCRA) Name: CON EDISON SERVICE BOX: 47378

EPA (RCRA) Address: 17 WEIRFIELD ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 449 feet to the E

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: LISA HUGHES Source Type: Emergency Contact Phone: 718−321−6958 Contact Info Date: 05/07/2013
Contact Name: LISA HUGHES Source Type: Implementer Contact Phone: 718−321−6958 Contact Info Date: 06/07/2013

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	50	GALLONS	GENERATED	2013		

Map Identification Number 146 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004734141**
NYSDEC Address: FRONT O 865 HALSEY ST SB20356 BROOKLYN, NY 11233 TT−Id: 740A−0133−057
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: 865 HALSEY ST BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 450 feet to the SSW

ADDRESS CHANGE INFORMATION
Revised street: IFO 865 HALSEY ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 02/19/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 02/19/2015

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	70	GALLONS	GENERATED	2015		

Map Identification Number 147 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004750402**

NYSDEC Address: 1475 BROADWAY SB 15770 BROOKLYN, NY 11221 TT−Id: 740A−0128−717

EPA (RCRA) Name: CON EDISON

EPA (RCRA) Address: 1475 BROADWAY BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 471 feet to the NNW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 03/13/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 03/13/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	1000	POUNDS	GENERATED	2015		

Map Identification Number 148 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004499620**

NYSDEC Address: 1015 HANCOCK ST SB20695 BROOKLYN, NY 11221 TT−Id: 740A−0106−578

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 533 feet to the NE

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

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	60	GALLONS	GENERATED	2014		

Map Identification Number 149 **NYSDEC Name:** **SYK CLEANERS** **Facility Id: NYD986283364**
NYSDEC Address: 1561 BROADWAY BROOKLYN, NY 11207 TT−Id: 740A−0014−646

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 534 feet to the ESE

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

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
F002	Spent halogenated solvents	530	POUNDS	GENERATED	2002		

Map Identification Number 150 **NYSDEC Name:** **S Y K CLEANERS INC** **Facility Id: NYD986928364**
NYSDEC Address: 1561 BROADWAY BROOKLYN, NY 11207 TT−Id: 740A−0014−647
EPA (RCRA) Name: S Y K CLEANERS INC
EPA (RCRA) Address: 1561 BROADWAY BROOKLYN, NY 112071001

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 534 feet to the ESE

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

US EPA RCRA Type: SMALL QUANTITY GENERATOR
Land Disposal:
Storer:
Contact Name: HAK KIM

Receives offsite waste:
Treatment facility:
Source Type: Notification

Notification date: 10/22/1990
Incinerator:
Transporter:
Contact Phone: 718−452−3627 Contact Info Date: 10/22/1990

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE 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
More than one waste code was reported for the following waste amount:		470	POUNDS	GENERATED	2016	1490	2007
F002	Spent halogenated solvents						
D039	Tetrachloroethylene						
F002	Spent halogenated solvents	390	POUNDS	GENERATED	2007	2985	1993
D039	Tetrachloroethylene	540	POUNDS	GENERATED	2001		

NOTE: 2016 waste amounts are for 1/1/2016 to 12/26/2016 only

Map Identification Number 151 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004552923**

NYSDEC Address: 1563 BROADWAY SB 15784 BROOKLYN, NY 11207 TT−Id: 740A−1000−226

EPA (RCRA) Name: CON EDISON SERVICE BOX: 15789

EPA (RCRA) Address: 1563 BROADWAY BROOKLYN, NY 11207

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 534 feet to the ESE

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 06/04/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 07/04/2014

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	50	GALLONS	GENERATED	2014		

Map Identification Number 152 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004522801**

NYSDEC Address: FRONT OF 1066 JEFFERSON AV SB21490 BROOKLYN, NY 11221 TT−Id: 740A−0107−441

EPA (RCRA) Name: CON EDISON SERVICE BOX: 21490

EPA (RCRA) Address: 1066 JEFFERSON AVE BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 540 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: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 05/06/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 06/06/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2014		

Map Identification Number 153 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004557773**

NYSDEC Address: FO 981 JEFFERSON AVE SB 21481 BROOKLYN, NY 11221 TT−Id: 740A−1001−693

EPA (RCRA) Name: CON EDISON SERVICE BOX: 21481

EPA (RCRA) Address: 981 JEFFERSON AVE BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 543 feet to the W

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Notification date: None Given
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 06/09/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 07/09/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	100	GALLONS	GENERATED	2014		

Map Identification Number 154 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004588075**
NYSDEC Address: FO 981 JEFFERSON AVE SB 2148 BROOKLYN, NY 11221 TT−Id: 740A−1002−019

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 543 feet to the W

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	30	GALLONS	GENERATED	2014		

Map Identification Number 155 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004788642**
NYSDEC Address: 55 SARATOGA AVE SB 28730 BROOKLYN, NY TT−Id: 740A−0136−425
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: 55 SARATOGA AVE BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 547 feet to the S

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 06/01/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 06/01/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2015		

Map Identification Number 156 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004409371**
NYSDEC Address: 33 WEIRFIELD ST SB47376 BROOKLYN, NY 11201 TT−Id: 740A−0099−974

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 564 feet to the ENE

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	27	GALLONS	GENERATED	2013		

Map Identification Number 157 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004473534**
NYSDEC Address: 899 HANCOCK ST SB20685 BROOKLYN, NY 11233 TT−Id: 740A−0106−325
EPA (RCRA) Name: CON EDISON SERVICE BOX: 20685
EPA (RCRA) Address: 899 HANCOCK ST BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 566 feet to the WSW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 03/20/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 04/20/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	100	GALLONS	GENERATED	2014		

Map Identification Number 158 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004585543**
NYSDEC Address: FO 1019 HANCOCK ST STRUCTURE 20695 BROOKLYN, NY 11221 TT−Id: 740A−1001−506

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 585 feet to the NE

ADDRESS CHANGE INFORMATION
Revised street: IO 1019 HANCOCK ST
Revised zip code: NO CHANGE

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2014		

Map Identification Number 159 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004829440**
NYSDEC Address: 40 CORNELIA ST SB 12293 BROOKLYN, NY TT−Id: 740A−0141−272
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: 40 CORNELIA ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 600 feet to the N

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 08/25/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 08/25/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2015		

Map Identification Number 160 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004720249**
NYSDEC Address: F/O 841 HALSEY ST SB20354 BROOKLYN, NY 11233 TT−Id: 740A−0129−799

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 601 feet to the SW

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	764	POUNDS	GENERATED	2015		

Map Identification Number 161 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004519906**
NYSDEC Address: 930 HALSEY AVENUE BROOKLYN, NY 11233 TT−Id: 740A−0106−085
EPA (RCRA) Name: CON EDISON SERVICE BOX: 62921
EPA (RCRA) Address: 930 HALSEY AVE BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 606 feet to the SSE

ADDRESS CHANGE INFORMATION
Revised street: 930 HALSEY ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 05/02/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 06/02/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	300	GALLONS	GENERATED	2014		

Map Identification Number 162 **NYSDEC Name:** **NYCHA − OCEAN HILL SARATOGA SQUARE** **Facility Id: NYR000052803**
NYSDEC Address: 930 HALSEY ST NEW YORK, NY 11237 TT−Id: 740A−0014−637
EPA (RCRA) Name: NYCHA − OCEAN HILL SARATOGA SQUARE
EPA (RCRA) Address: 930 HALSEY ST BROOKLYN, NY 11237

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 606 feet to the SSE

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: 03/30/1998
Incinerator:
Transporter:
Contact Name: FRANK OCELLO Source Type: Implementer Contact Phone: 212−306−3229 Contact Info Date: 01/01/2007
Contact Name: FRANK OCELLO Source Type: Notification Contact Phone: 212−306−3229 Contact Info Date: 03/30/1998

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D002	Solid waste that exhibits the characteristic of corrosivity	387	GALLONS	GENERATED	2000		
U240	Acetic acid, (2,4−dichlorophenoxy)−, salts & esters	125	GALLONS	GENERATED	1998		

Map Identification Number 163 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004379988**

NYSDEC Address: O/F 33 WEIRFIELD SB437379 BROOKLYN, NY 11221 TT−Id: 740A−0103−706
EPA (RCRA) Name: CON EDISON SERVICE BOX: 47379
EPA (RCRA) Address: 33 WEIRFIELD ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 617 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: OPP 33 WEIRFIELD ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:

Notification date: None Given
Incinerator:
Transporter:

Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 10/24/2013
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 11/24/2013

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2013		

Map Identification Number 164 **NYSDEC Name:** **NYCDEP** **Facility Id: NYP003665387**

NYSDEC Address: 1102 PUTNAM AVE BROOKLYN, NY 11201 TT−Id: 740A−0081−706
EPA (RCRA) Name: NYC DEP
EPA (RCRA) Address: 1102 PUTNUM AVE BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 619 feet to the NNW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:

Notification date: None Given
Incinerator:
Transporter:

Contact Name: JOANNE NURSE Source Type: Emergency Contact Phone: 718−595−4675 Contact Info Date: 04/24/2012
Contact Name: JOANNE NURSE Source Type: Implementer Contact Phone: 718−595−4675 Contact Info Date: 08/06/2012

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
D001	Solid waste that exhibits the characteristic of ignitability	195	GALLONS	GENERATED	2012		

Map Identification Number 165 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004596391**
NYSDEC Address: 898 HANCOCK ST SB 20869 BROOKLYN, NY 11233 TT−Id: 740A−1000−748

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 622 feet to the WSW

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

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	60	GALLONS	GENERATED	2014		

Map Identification Number 166 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004519690**
NYSDEC Address: 1064 PUTNAM AV SB32261 BROOKLYN, NY 11221 TT−Id: 740A−0106−722
EPA (RCRA) Name: CON EDISON SERVICE BOX: 32261
EPA (RCRA) Address: 1064 PUTNAM AVE BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 626 feet to the WNW

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 05/02/2014
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 06/02/2014

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	70	GALLONS	GENERATED	2014		

Map Identification Number 167 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004534343**
NYSDEC Address: 1064 PUTNAM AVE SB 32261 BROOKLYN, NY 11221 TT−Id: 740A−0106−877

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 626 feet to the WNW

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	70	GALLONS	GENERATED	2014		

Map Identification Number 168 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004380002**
NYSDEC Address: 28 WEIRFIELD SB 47376 BROOKLYN, NY 11221 TT−Id: 740A−0102−298
EPA (RCRA) Name: CON EDISON SERVICE BOX: 47376
EPA (RCRA) Address: 28 WEIRFIELD ST BROOKLYN, NY 11221

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 637 feet to the E

ADDRESS CHANGE INFORMATION
Revised street: 28 WEIRFIELD ST
Revised zip code: NO CHANGE

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 10/24/2013
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 11/24/2013

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	50	GALLONS	GENERATED	2013		

Map Identification Number 169 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004713475**
NYSDEC Address: 1216 BUSHWICK AV SB19007 BROOKLYN, NY 11221 TT−Id: 740A−0128−248

MAP LOCATION INFORMATION
Site location mapped by: PARCEL MAPPING (1)
Approximate distance from property: 647 feet to the NE

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

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	70	GALLONS	GENERATED	2015		

Map Identification Number 170 **NYSDEC Name:** **NYNEX** **Facility Id: NYP000912261**
NYSDEC Address: HALSEY ST & BROADWAY BROOKLYN, NY 10036 TT−Id: 740A−0014−948

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 651 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: HALSEY ST / BROADWAY
Revised zip code: 11233

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	110	GALLONS	GENERATED	1993		

Map Identification Number 171 **NYSDEC Name:** **CONSOLIDATED EDISON** **Facility Id: NYP004085635**
NYSDEC Address: MH2328−HALSEY ST & BROAWAY BROOKLYN, NY 11201 TT−Id: 740A−0012−761

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 651 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: HALSEY ST / BROADWAY
Revised zip code: 11207

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
B002	Petroleum oil or other liquid containing 50 ppm < PCBs < 500 ppm	291	KILOGRAMS	GENERATED	2001		

Map Identification Number 172 **NYSDEC Name:** **CON EDISON** **Facility Id: NYP004834186**
NYSDEC Address: HALSEY ST & BROADWAY BROOKLYN, NY 11233 TT−Id: 740A−0144−284
TM 567
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: HALSEY ST & BROADWAY BROOKLYN, NY 11233

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 651 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: HALSEY ST / BROADWAY
Revised zip code: UNKNOWN

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 09/03/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 09/03/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	2000	POUNDS	GENERATED	2015		

Map Identification Number 173 **NYSDEC Name:** **CON ED** **Facility Id: NYP004843906**
NYSDEC Address: OPP 1573 BROADWAY SB 15803 BROOKLYN, NY 11207 TT−Id: 740A−0141−911
EPA (RCRA) Name: CON EDISON
EPA (RCRA) Address: 1575 BROADWAY BROOKLYN, NY 11207

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 651 feet to the ESE

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

US EPA RCRA Type: GENERATOR TYPE NOT GIVEN
Land Disposal: Receives offsite waste:
Storer: Treatment facility:
Notification date: None Given
Incinerator:
Transporter:
Contact Name: THOMAS TEELING Source Type: Emergency Contact Phone: 212−460−3770 Contact Info Date: 09/25/2015
Contact Name: THOMAS TEELING Source Type: Implementer Contact Phone: 212−460−3770 Contact Info Date: 09/25/2015

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	HISTORIC MAXIMUM YEAR	HISTORIC MAXIMUM AMOUNT	HISTORIC MAXIMUM YEAR
D008	Lead	2000	POUNDS	GENERATED	2015		

Map Identification Number 174 **EPA (RCRA) Name:** **MTA NYCT − HALSEY ST STATION J−LINE** **Facility Id: NYR000082107**

EPA (RCRA) Address: HALSEY ST & BROADWAY BROOKLYN, NY 11207 TT−Id: 740A−0081−371
NYSDEC Name: NYCTA
NYSDEC Address: HALSEY ST BROOKLYN, NY

MAP LOCATION INFORMATION
Site location mapped by: MANUAL MAPPING (3)
Approximate distance from property: 651 feet to the ESE

ADDRESS CHANGE INFORMATION
Revised street: HALSEY ST / BROADWAY
Revised zip code: NO CHANGE

Special Note(s): The New York State Department of Environmental Conservation and the U. S. Environmental Protection Agency have reported different locations for this hazardous waste identification number. Available information for both locations is summarized below.

US EPA RCRA Type: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR Notification date: 05/03/2000
Land Disposal: Receives offsite waste: Incinerator:
Storer: Treatment facility: Transporter:
Contact Name: WILLIAM JEHLE Source Type: Implementer Contact Phone: 646−252−3500 Contact Info Date: 01/01/2007
Contact Name: WILLIAM JEHLE Source Type: Notification Contact Phone: 646−252−3500 Contact Info Date: 05/03/2000

Historically listed as the following USEPA RCRA Generator Size(s) as well:
LARGE 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
D008	Lead	100	POUNDS	GENERATED	2003	1800	2001

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
MWBE Site C
Brooklyn, NY 11233

* 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

 January 03, 2017 'MWBE Site C'

Unmappable facilities for 'Kings' County

NPL/CERCLIS/NYSDEC Inactive Haz. Waste or Reg. Qual. Sites

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
224020	DESIGNERS WOODCRAFT	224020 DESIGNERS WOODCRAFT		UNKNOWN
224039	NJZ COLORS	224039 NJZ COLORS	BROOKLYN	UNKNOWN
NYD980531628	WILLIAM HARVEY CORP	UNKNOWN	BROOKLYN	UNKNOWN

Solid Waste Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
24D05	EMPIRE MILL DEMO			UNKNOWN
24D07	RED HOOK CONTAINER DEMO			UNKNOWN
24M01	ASHMONT METALS RES.REC.			UNKNOWN
24T13	NY CROSS HARBOR RR			UNKNOWN
24T55	CARDELLA TRUCKING			UNKNOWN
24T75	ROBERT BOLOGNA WCTB INC.			UNKNOWN
24TA8	U.S. COAST LINE, INC.			UNKNOWN
24TA9	NY CROSS HARBOR RR CORP.			UNKNOWN
24TB3	J. WISE EXCAVATING			UNKNOWN
24Y81	NYCDPR YARD WASTE COMPOST			UNKNOWN
		RALPH AVE.	BROOKLYN	UNKNOWN
NY00000001681	BIG EXCAVATING & DEMO	UNKNOWN	UNKNOWN	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9200971	BREVOORT -NYCHA	329 PATCHEN AVE	BROOKLYN	11233

Hazardous Spills - MISC. SPILL CAUSES - Active

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
0308367	AGUANA SUBSTATION	104-27 STREET	BROOKLYN	UNKNOWN

Hazardous Spills - TANK FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
8607075	SPILL NUMBER 8607075			UNKNOWN
9313502	1782 GLEASON AVE	1782 GLEASON AVE	BROOKLYN	UNKNOWN
9109440	HOBBY SHOP GARAGE/US NAVY	HOBBY SHOP GARAGE	BROOKLYN	UNKNOWN

Hazardous Spills - TANK TEST FAILURES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9808684	BREVOORT HOUSES -NYCHA	329 PATCHEN AVE	BROOKLYN	11233
0605577	MERIDIAN PROPERTIES	101 LINCOLN BLVD	BROOKLYN	UNKNOWN
0206822	STARRETT ST AT	SPRING CREEK COMMUNITY CTR	BROOKLYN	UNKNOWN
8802622	85-09 1ST AVENUE	85-09 1ST AVENUE	NEW YORK CITY	UNKNOWN
8806571	CLOSED-LACKOF RECENT INFO	ADMINISTRATION BLDG	NYC	UNKNOWN

Hazardous Spills - UNKNOWN CAUSE OR OTHER CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9213773	SPILL NUMBER 9213773			UNKNOWN
8603146	SPILL NUMBER 8603146			UNKNOWN
0209904	VARIOUS DEP -BWSO SITES	MISC.	BRONX/QUEENS/MANHATTAN	UNKNOWN
9912359	BOX 20341	715 PAHALEY ST	BROOKLYN	UNKNOWN
9907077	MANHOLE 58390	NECKING LAND AVE	BROOKLYN	UNKNOWN
9903270	VAULS VS3031	E SIDE OF GATES AVE	BROOKLYN	UNKNOWN
9901523	BROWNING FERRIS INDUSTRIE	115 CANGNEF STREET ?	BROOKLYN	UNKNOWN
9815288	MANHOLE 14244	29-39 HAYWOOD ST	BROOKLYN	UNKNOWN
9813982	SERVICE BOX 49009	SERVICE BOX 49009	BROOKLYN	UNKNOWN
9812837	MANHOLE 65847	SOUTHSIDE MACON ST	BROOKLYN	UNKNOWN

9812720	SPILL NUMBER 9812720	2929 BAINBRIDGE AVE	BROOKLYN	UNKNOWN
9801951	432 DRAKES AVE CORP	432 DRAKES AVE	BROOKLYN	UNKNOWN
9503788	BREVOORT HOUSES	329 PATCHEN AVE	BROOKLYN	11233
9412310	217 HYLAND ST	217 HYLAND ST	BROOKLYN	UNKNOWN
9312482	NAVESINK RIVER CHANNEL #7	NAVESINK RIVER CHANNEL #7	BROOKLYN	UNKNOWN
9306347	WHITE AVE - BLDG 114	WHITE AVE - BLDG 114	BROOKLYN	UNKNOWN
9305573	VARIOUS LOTS IN BROOKLYN	VARIOUS LOTS IN BROOKLYN	BROOKLYN	UNKNOWN
9214290	1200 NECK ROAD	1200 NECK ROAD	BROOKLYN	UNKNOWN
9214052	SPILL NUMBER 9214052		BROOKLYN	UNKNOWN
9210843	UNK	UNKNOWN	BROOKLYN	UNKNOWN
9203970	MALCOLM X BLVD & PATCHEAN	MALCOLM X BLVD	BROOKLYN	UNKNOWN
9004558	GUID AVE BRIDGE/BKLYN	GUID AVE BRIDGE	BROOKLYN	UNKNOWN
8704318	SPILL NUMBER 8704318		BROOKLYN	UNKNOWN
8504687	BROOKLYN	BROOKLYN	BROOKLYN	UNKNOWN
8503558	BROOKLYN	BROOKLYN	BROOKLYN	UNKNOWN
8503309	SUNOCO BROOKLYN	BROOKLYN	BROOKLYN	UNKNOWN
8503172	BROOKLYN, KINGS	BROOKLYN, KINGS	BROOKLYN	UNKNOWN
8502862	GAS COMPANY	GAS COMPANY	BROOKLYN	UNKNOWN
8100041	SUBWAY-NYC	SUBWAY-NYC	BROOKLYN	UNKNOWN
7900928	SPILL NUMBER 7900928		BROOKLYN	UNKNOWN
1605965	BAY RIDGE NY HARBOR	BAY RIDGE	BROOKLYN	UNKNOWN
1204789	MANHOLE 3151	5115 FRANKLIN AVE	BROOKLYN	UNKNOWN
1103986	ON WATER	OFF GARRISON BEACH	BROOKLYN	UNKNOWN
0808978	2035 MAN HOLE	QUINCY STREET	BROOKLYN	UNKNOWN
0803914	LAFARGE CEMENT CO	UNKNOWN	BROOKLYN	UNKNOWN
0711377	3424 CLINTON ROAD	3424 CLINTON ROAD	BROOKLYN	UNKNOWN
0410369	RESIDENCE	57 BRAND STREET	BROOKLYN	UNKNOWN
0405797	VAULT #VS-7930	3411 JUIEER AVE	BROOKLYN	UNKNOWN
0405023	VAULT # 3182	DEBEVOIST PLACE/LAFAYETTE	BROOKLYN	UNKNOWN
0400597	CON ED MANHOLE#65848	MACON STREET	BROOKLYN	UNKNOWN
0313741	MANHOLE 65796	SOUTHSIDE MACON ST	BROOKLYN	UNKNOWN
0312773	SUBWAY SYSTEM-A LINE	TRACK A-3- COLUMN 792	BROOKLYN	UNKNOWN
0310941	MANHOLE 32221 FRONT OF	298 HAWKSIDE AVE	BROOKLYN	UNKNOWN
0211077	ALL OVER BROOKLYN	ALL OVER BROOKLYN	BROOKLYN	UNKNOWN
0104880	ROCKAWAY AVE SUBWAY STA	ROCKAWAY AVE	BROOKLYN	UNKNOWN
0104614	ON CORNER	GREENWICH ST/BUSHWICK AVE	BROOKLYN	UNKNOWN
0101463	CABLE PIT	A-LINE ROCAWAY AVE	BROOKLYN	UNKNOWN
9904431	SPILL NUMBER 9904431	FLUSHING/QUARTER AVE	MANHATTAN	UNKNOWN
9103671	145 UNEDON ROAD/BKLYN	145 UNEDON ROAD	NEW YORK CITY	UNKNOWN
9206476	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
8504666	UNK	UNKNOWN	UNKNOWN	UNKNOWN

Hazardous Spills - MISC. SPILL CAUSES - Closed

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
9404620	BROOKLYN EXPWY	UNDER B'KLYN EXPWY	BRONX	UNKNOWN
1006871	COMMERCE PUMP STATION	COMMERCE RD	BRONX	UNKNOWN
9914811	POLE #18923	MANOR RD/HOLLYWOOD AVE	BROOKLYN	UNKNOWN
9907586	VAULT 2488	45 DEBEVOISE PLACE	BROOKLYN	UNKNOWN
9610216	RALPH 2 UNIT SUBSTATION	RALPH AVE ??	BROOKLYN	UNKNOWN
9608869	240 SECOND ST &	240 2ND ST & BROADWAY	BROOKLYN	UNKNOWN
9602674	CROSS HARBOR	BOX 182	BROOKLYN	UNKNOWN
9510467	DRIVER SERVICES CO	172 CARSON AVE	BROOKLYN	UNKNOWN
9508762	PERGAMENT STORES	57 65TH AVE	BROOKLYN	UNKNOWN
9505269	N. ELEANOR PL/WILLIAMBURG	MANHOLE #55915/ELEANOR PL	BROOKLYN	UNKNOWN
9502935	3147 BROADWAY	3147 BROADWAY	BROOKLYN	UNKNOWN
9400526	GATES AVENUE	GATES AVENUE	BROOKLYN	UNKNOWN
9314184	BET LOUISIANA & MALTA AVE	BET LOUSINANA & MALTA AVE	BROOKLYN	11207
9308950	JAMAICA REGULATOR #3	JAMAICA REGULATOR #3	BROOKLYN	UNKNOWN
9307209	HILLARY STREET	HILLARY STREET	BROOKLYN	UNKNOWN
9304944	1604 LOTS 28 & 37-44 PLUS	1604 LOTS 28 & 37-44 PLUS	BROOKLYN	UNKNOWN

9213983	1149 SLAVEY AVENUE	1149 SLAVEY AVENUE	BROOKLYN	UNKNOWN
9210698	2110 BOLTON STREET	2110 BOLTON STREET	BROOKLYN	UNKNOWN
9207289	LYNROCK NURSING HOME	LYNROCK NURSING HOME	BROOKLYN	UNKNOWN
9205306	909 AVE G	909 AVE G	BROOKLYN	UNKNOWN
9203867	280 ELDRIDGE ST	280 ELDRIDGE ST	BROOKLYN	UNKNOWN
9201537	241 N MAIN ST/TOP SHELF	241 N MAIN ST/TOP SHELF	BROOKLYN	UNKNOWN
9004479	BREVOORT	329 PATCHEN AVE	BROOKLYN	11233
8607666	CHEVRON STATION / BROOKLY	CHEVRON/DRUM	BROOKLYN	UNKNOWN
8606856	SPILL NUMBER 8606856		BROOKLYN	UNKNOWN
1603686	GERRITSEN INLET	GERRITSEN INLET	BROOKLYN	UNKNOWN
1603210	NYCTA	Q LINE	BROOKLYN	UNKNOWN
1402656	HYDRAULIC OIL SPILL TO GERRITSEN INLET	GERRITSEN INLET	BROOKLYN	UNKNOWN
1307940	WATER	REDHOOK FLATS	BROOKLYN	UNKNOWN
1303396	MOTOR VEHICLE ACCIDENT	GARRISON INLET BRIDGE	BROOKLYN	UNKNOWN
1216238	ROADWAY SPILL	GARRISON BEACH ST/LOUIS AVE	BROOKLYN	UNKNOWN
1211499	BASEMENT	36 PARGETHE STREET	BROOKLYN	UNKNOWN
1209854	NYC TRANSIT SPILL ON TRACK	MONTAQUE RAIL STATION IN TUBE	BROOKLYN	UNKNOWN
1209775	BROOKLYN	ALL STREETS	BROOKLYN	UNKNOWN
1208189	SANDY FOLLOW UP	MARGINEL STREET	BROOKLYN	UNKNOWN
1207421	NYC TRANSIT BUS	DECATUR AVE AND 4TH AVE	BROOKLYN	UNKNOWN
1207169	STREET	WHIKOSS AVE	BROOKLYN	UNKNOWN
1201439	BROOKLYN CRUISE TERMINAL	BROOKLYN CRUISE TERMINAL	BROOKLYN	UNKNOWN
1200646	HESS TERMINAL	CORTEZ RD AND CLAYTON ST	BROOKLYN	UNKNOWN
1113411	PORT NY/NJ	PORT	BROOKLYN	UNKNOWN
1101447	POLE # 62699	2715 ROUND ST	BROOKLYN	UNKNOWN
1012925	ROADWAY	WASHINGTON PLAZA	BROOKLYN	UNKNOWN
1009644	ROADWAY	WASHINGTON PLAZA	BROOKLYN	UNKNOWN
1009088	221422; S NY AVE	S NY AVE	BROOKLYN	UNKNOWN
1005512	NEWTOWN CREEK-BUCKEYE PIPE	ACROSS FROM THE BUCKEYE	BROOKLYN	UNKNOWN
1003496	TM # 78	NORTHSIDE OF MONTROSE AVE	BROOKLYN	UNKNOWN
0914587	219027; 86 STREET AND 17 STREET	86 STREET AND 17 STREET	BROOKLYN	UNKNOWN
0914424	218248; YORK STREET AND GREEN LANE	YORK STREET AND GREEN LANE	BROOKLYN	UNKNOWN
0912508	REGULATOR OH-6	BROOKLYN ARMY TERMINAL	BROOKLYN	UNKNOWN
0903615	ROADWAY	SULLIVAN ST / VAN SINBEREN AVE	BROOKLYN	UNKNOWN
0808967	DRUM RUN	RYERSON AVE	BROOKLYN	UNKNOWN
0807442	BROOKLYN CRUISE TERMINAL	1 CRUIZE WAY	BROOKLYN	UNKNOWN
0805706	MANHOLE #724	YORK ST/ GREEN LANE	BROOKLYN	UNKNOWN
0712922	BREE AVE AND BRIGGS AVE	BREE AVE AND BRIGGS AVE	BROOKLYN	UNKNOWN
0706451	ONE PINT FROM AERIAL XFMR ON POLE	IN FRONT OF 230-50 EDGEWOOD AVE	BROOKLYN	UNKNOWN
0701967	SPRAGUE ENERGY TRUCK	2449 HALLWAY AVE	BROOKLYN	UNKNOWN
0701086	FORMER BUS YARD	CARLTON AVE	BROOKLYN	UNKNOWN
0701011	IN THE STREET	KENTH AVE	BROOKLYN	UNKNOWN
0611241	HESS TERMINAL	PORT STREET	BROOKLYN	UNKNOWN
0610884	PARKING LOT	909 PROMOTIONAL DEV. IND	BROOKLYN	UNKNOWN
0606084	UNKNOWN	UNKNOWN	BROOKLYN	UNKNOWN
0506320	MANHOLE 3223	MACON ST. 20 FT WEST OF M	BROOKLYN	UNKNOWN
0406859	BUS #8401	GATES/UTICA AVE	BROOKLYN	UNKNOWN
0307966	SPILL NUMBER 0307966	QUEENS CO. HOSPITAL	BROOKLYN	UNKNOWN
0207970	OPPOSITE	1630 SEMARKS AVE	BROOKLYN	UNKNOWN
0201563	SPILL NUMBER 0201563	BROADWAY & VAN SICLEN AVE	BROOKLYN	UNKNOWN
0104610	CORONA YARD	UNKNOWN	BROOKLYN	UNKNOWN
8810118	BLDG 3 SUB STATION/BKLYN	BLDG 3 SUB STATION	NEW YORK CITY	UNKNOWN
8710502	329 PATCHEN AVE/BKLYN	329 PATCHEN AVE	NEW YORK CITY	11233
0814069	AMBROSE CHANNEL LOWER BAY	UNK	NEW YORK CITY	UNKNOWN

Petroleum Bulk Storage Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
2-237280	1160 REALTY CO	1160 REALTY CO	BROOKLYN	UNKNOWN
2-289442	412 AVENUE E	412 AVENUE E	BROOKLYN	UNKNOWN
NY03182	DEPT OF PARKS		BROOKLYN	UNKNOWN

NY08951	SECO MANAGEMENT	B KLYN NY	BROOKLYN	UNKNOWN

Hazardous Waste Generation or Transport Facilities

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYP004001319	CONSOLIDATED EDISON CO	CROSBY 165		UNKNOWN
NYP004019766	CONSOLIDATED EDISON CO	V462 WILLIAM ST		UNKNOWN
NY0000004697	NYCTA	STILLWLL AVE	BROOKLYN	UNKNOWN
NYP000788471	USEPA	ERRD	BROOKLYN	UNKNOWN
NYP000927004	CONSOLIDATED EDISON	MACON STREET	BROOKLYN	UNKNOWN
NYP000927509	CONSOLIDATED EDISON	2175 CEDAR AVENUE	BROOKLYN	UNKNOWN
NYP000928275	CONSOLIDATED EDISON	875 KAGERS AVE	BROOKLYN	UNKNOWN
NYP000928846	CONSOLIDATED EDISON	MH 64217-BROOKLYN GRAND	BROOKLYN	UNKNOWN
NYP000929257	CONSOLIDATED EDISON	5 MARKS ST	BROOKLYN	UNKNOWN
NYP004057972	CONSOLIDATED EDISON	MH21248	BROOKLYN	UNKNOWN
NYP004059010	CONSOLIDATED EIDSON	N/S	BROOKLYN	UNKNOWN
NYP004070264	CONSOLIDATED EDISON	MH12645	BROOKLYN	UNKNOWN
NYP004074357	CONSOLIDATED EDISON	MH61205	BROOKLYN	UNKNOWN
NYP004076185	CONSOLIDATED EDISON	MH7746	BROOKLYN	UNKNOWN
NYP004121414	CONSOLIDATED EDISON	PARK @ ELLIOT AVE MH4047	BROOKLYN	UNKNOWN
NYP004134862	CONSOLIDATED EDISON	MH6673-71ST ST & 35D AVE	BROOKLYN	UNKNOWN
NYP004136180	CONSOLIDATED EDISON	MH24778-E21ST CONCLAVE I	BROOKLYN	UNKNOWN
NYP004138608	CONSOLIDATED EDISON	S/E/C WILLOUGHBY LANE	BROOKLYN	UNKNOWN
NYP004183331	CONSOLIDATED EDISON MH42983	MH42983 323 TANAKING AVE	BROOKLYN	UNKNOWN
NYP004192154	CONSOLIDATED EDISON MH27077	MH27077	BROOKLYN	UNKNOWN
NYP004194890	CONSOLIDATED EDISON MH58388	HEGEMAN AVE & HERZL AVE	BROOKLYN	UNKNOWN
NYP004198099	CONSOLIDATED EDISON	F/O 1802 & 1809 AVE & 618 ST	BROOKLYN	UNKNOWN
NYP004352977	CON EDISON	88 VANDEREEN ST	BROOKLYN	UNKNOWN
NYP004399457	CON EDISON	NORTHWEST CORNER OF HAWTHORNE AVE	BROOKLYN	11221
NYP004449096	CON EDISON	SOUTH WEST CORNER OF CENTRAL AVE	BROOKLYN	11221
NYP004468377	CON EDISON	FRONT OF 317 MARLON ST	BROOKLYN	11233
NYP004473050	CON EDISON	108 WALLEN ST	BROOKLYN	UNKNOWN
NYP004478004	CON EDISON	997 MONROE STREET	BROOKLYN	UNKNOWN
NYP004482196	CON EDISON	OPP 533 & MALCOM ST	BROOKLYN	UNKNOWN
NYP004483184	CON EDISON	695 HAISEL ST	BROOKLYN	UNKNOWN
NYP004493151	CON EDISON	639 MACDOUGH ST	BROOKLYN	UNKNOWN
NYP004529970	CON EDISON	222 WITTLER ST	BROOKLYN	UNKNOWN
NYP004616785	CON EDISON	FRONT OF 889 SUTTURAU	BROOKLYN	11207
NYP004730768	CON EDISON	84 EMERIAL PL	BROOKLYN	UNKNOWN
NYP004732004	CON EDISON	476 SUMNER AVE	BROOKLYN	11233
NYR000082107	NYCTA	HALSEY ST	BROOKLYN	UNKNOWN
NYR000140855	DLX INDUSTRIES	1970 INDUSTRIAL PARK ROAD	BROOKLYN	UNKNOWN
NY0000010363	NYCDOT	N/S	N/S	UNKNOWN
NYR000067843	NEW YORK CITY DEPT PARKS & RECREATION	11 ROSENGREV AVE	N/S	UNKNOWN
NYP000960054	VERIZON NEW YORK INC.	ASHFORD STREET MANHOLE	NEW YORK	11207
NYP000960187	VERIZON NEW YORK INC.	WOODBINE AVE MANHOLE	NEW YORK	UNKNOWN
NYP004044970	CONSOLIDATED EDISON	TM3895-MARGINAL ST	NEW YORK	UNKNOWN
NYP004141438	CONSOLIDATED EDISON	4 IRIVNG PL RM 828	NEW YORK	UNKNOWN
NYR000106690	NYCTA CPM ENVIRO ENG DIV	2 BROADWAY 2ND FL	NEW YORK	11207
NYP004003778	CONSOLIDATED EDISON	V815 - UNION AVE	QUEENS	UNKNOWN
NYP004409074	CON EDISON	255-22 TERRACE PL	QUEENS	UNKNOWN

Wastewater Discharges

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
NYU200022	NYCDEP OMNIBUS IV ORDER			UNKNOWN
NYU900073	NEW YORK CITY TRANSIT AUTH.			UNKNOWN

Air Releases

FACILITY ID	FACILITY NAME	STREET	CITY	ZIP
3604700161	MOT/ARMY	NO STREET ADDRESS	BROOKLYN	UNKNOWN
3604700958	AFRO DEMOLITION CORP	SARATOGA & DEW	BROOKLYN	UNKNOWN

3604780176	AFRO DEMOLITION CORP		SARATOGA & DEW STREETS	BROOKLYN	UNKNOWN
NY047X4UE	SUPERIOR FIBRES INC	KINGS (B	NO STREET ADDRESS	NO CITY NAME	UNKNOWN
NY047XAXP	SHARMONT REALTY	KINGS (B	NO STREET ADDRESS	NO CITY NAME	UNKNOWN

Hazardous waste codes presented in individual Toxic Information Profiles are defined below.

B002 Petroleum oil or other liquid containing 50 ppm or greater of PCBs but less than 500 ppm PCBs. This includes oil from electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers and cable.

D001 Solid waste that exhibits the characteristic of ignitability, but is not listed under any other hazardous waste code.

D002 Solid waste that exhibits the characteristic of corrosivity, but is not listed under any other hazardous waste code.

D003 Solid waste that exhibits the characteristic of reactivity, but is not listed under any other hazardous waste code.

D008 Lead

D039 Tetrachloroethylene

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)

U240 Acetic acid, (2,4−dichlorophenoxy)−, salts & esters

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: 9/09/2015. Data obtained by Toxics Targeting: 9/09/2015.
New Facilities updated through: 9/30/2016. Data obtained by Toxics Targeting: 9/30/2016.

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: 12/9/2016. Data obtained by Toxics Targeting: 12/9/2016.
New Facilities updated to: 9/23/2016. Data obtained by Toxics Targeting: 9/23/2016.

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: 9/12/2016. Data obtained by Toxics Targeting: 9/16/2016.
New facilities updated through: 9/12/2016. Data obtained by Toxics Targeting: 9/16/2016.

State Data Source: New York State Department of Environmental Conservation.[2]
Data attributes updated through: 12/9/2016. Data obtained by Toxics Targeting: 12/9/2016.
New facilities updated through: 9/23/2016. Data obtained by Toxics Targeting: 9/23/2016.

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: 12/9/2016. Data obtained by Toxics Targeting: 12/9/2016.
New Facilities updated to: 9/23/2016. Data obtained by Toxics Targeting: 9/23/2016.

(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: 9/12/2016. New facilities obtained by Toxics Targeting: 9/17/2016.
Manifest transactions data updated to: 9/12/2016. Manifest transactions data obtained by Toxics Targeting: 9/17/2016.

(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: 9/12/2016. Data obtained by Toxics Targeting: 9/16/2016.
Data attributes updated through: 12/12/2016. Data obtained by Toxics Targeting: 12/21/2016.

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: 12/04/2016 New spills data obtained by Toxics Targeting: 12/04/2016
Spill attribute data through: 12/04/2016 Spill attribute data obtained by Toxics Targeting: 12/04/2016

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: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

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: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.
Tank data updated through: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

(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: 9/12/2016. New facilities obtained by Toxics Targeting: 9/17/2016.
Manifest transactions data updated to: 9/12/2016. Manifest transactions data obtained by Toxics Targeting: 9/17/2016.

(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: 9/12/2016. Data obtained by Toxics Targeting: 9/16/2016.
Data attributes updated through: 12/12/2016. Data obtained by Toxics Targeting: 12/21/2016.

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: 7/1/2016. Data obtained by Toxics Targeting: 7/1/2016.

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: 11/29/2016. Data obtained by Toxics Targeting: 12/8/2016.

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 E
LOCAL RECORDS AND FOILS

Home

Customer Services

- Pay Online
- Ways to Pay Your Bill
- eBilling
- Account Information
- Customer Assistance
- Service Line Protection Program
- Water Rates
- Property Managers & Trade Professionals

Water Utilities

- Drinking Water
- Wastewater
- Stormwater
- Harbor Water
- Long Term Control Plan

The Watershed

- Watershed Protection
- Watershed Recreation

Citywide Initiatives

- Regulatory Reform
- Environmental Education
- Conservation Programs
- Air Pollution Control
- Noise Codes & Complaints

Business and Professionals

- Forms & Permits
- Support for Businesses
- Doing Business with DEP
- Asbestos Abatement
- Construction, Demolition & Abatement

About DEP

- Inside DEP
- News
- Capital Projects
- Careers at DEP
- Environmental Reviews
- Interagency MOUs
- A to Z Index
- Contact Us

Dear Sir or Madam

We hereby acknowledge receipt of your Freedom of Information Law ("FOIL") request submitted online. Your request is important to us and will be handled as expeditiously as possible. Please be advised however, that because of the large volume of pending complex FOIL requests handled by the Department of Environmental Protection, and the available staffing, your response is anticipated to take between 120-150 days from the date of this acknowledgement.

Sincerely,
Deborah S. Fremder
Records Access Officer

My DEP Account and Online Bill Pay

New Payment Options
Water Charges

Reservoir Levels
Current: 65.4%
Normal: 87.4%

Customer Assistance

- Contact Customer Service
- NYC Lien Sale & Payment Agreements
- Multi-Family Conservation Program
- Dispute Resolution
- Learn About AMR
- Dispose of Grease & Oil Properly
- For Businesses
- More Services…

FOIL Request Main Page (SupportHome.aspx)

I want to...

Reference No: W016461-010417

Contact E-Mail: mdavis@akrf.com

Dear Margo:

Thank you for your Freedom of Information Law (FOIL) request. Your request has been received and is being processed. Your request was received in this office on 1/4/2017 and given the reference number FOIL #**W016461-010417** for tracking purposes. You may expect the Department's response to your request no later than **2/2/2017**.

Record Requested: **Information regarding underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for 7 Saratoga Avenue and 1510-1524 Broadway, Brooklyn, NY 11233 (Block 1489, Lots 6 and 11-18)**

You can monitor the progress of your request at the link below and you'll receive an email when your request has been completed. Again, thank you for using the FOIL Center.

https://mycusthelp.com/NEWYORKDEC/_rs/RequestLogin.aspx (https://mycusthelp.com/NEWYORKDEC/_rs/RequestLogin.aspx)

New York State Department of Environmental Conservation, Record Access Office

Department of Environmental Conservation

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NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE

For office use only
CONTROL NUMBER:

FREEDOM OF INFORMATION LAW REQUEST FORM

To: Records Access Officer
NYC Department of Health and Mental Hygiene
42-09 28th Street, 14th Floor, CN 31
Long Island City, NY 11101
Phone: (347) 396-6078/6116
Fax: (347) 396-6087
recordsaccess@health.nyc.gov

Date ____ / ____ / ____

Dear Record Access Officer:

I, _____ request copies of any inspection reports and/or records located in the Bureau of_____, of the New York City Department of Health and Mental Hygiene.

The records pertain to:

- ☐ Lead Poisoning
- ☐ Animal bite
- ☐ Employment/Human Resources
- ☐ Contracts/RFPs
- ☐ Pest Control
- ☐ Correctional Health
- ☐ Early Intervention
- ☐ Food Safety
- ☐ Mental Health
- ☐ Communicable Diseases
- ☐ School Health
- ☐ Day Care
- ☐ Other: _____

Please specify/describe the records you are requesting from the above program(s):

_____

_____

_____

_____

_____

There is a charge of 25¢ per page or actual costs of reproduction, payable in advance.

Requester's Name: _____ _____
(Please print) (Signature)

Requester's Organization: _____

Requester's Address: _____
Street City State Zip code

Telephone Number: (_____) _____ - _____ E-mail: _____

For more information, please visit: http://www.nyc.gov/html/doh/html/contact/ogc-foil.shtml

AKRF, Inc.

440 Park Avenue South
7th Floor
New York, NY 10016
tel: 212 696-0670
fax: 212 213-3191
www.akrf.com

January 4, 2017

VIA EMAIL

Records Access Office
New York State Department of Health
Corning Tower Room 2364
Albany, New York 12237-0044
foil@health.state.ny.us

Re: **FOIL Request**
7 Saratoga Avenue and 1510-1524 Broadway (Tax Block 1489, Lots 6 and 11-18)
Brooklyn, NY 11233

Dear Sir or Madam:

Pursuant to the Freedom of Information Law, we are requesting information regarding underground storage tanks (USTs), spill records, remediation sites, dump sites, soil and groundwater remediation, storage of hazardous materials and/or hazardous materials activities for the above referenced site. Your response can either be faxed to (212) 726-0942 or mailed to the address identified above. If you have any questions, please feel free to call me at (646) 388-9570.

Thank you in advance for your assistance and cooperation.

Sincerely,
AKRF

Margo Davis
Environmental Scientist

Form 54-79M-701581(59) 114

DEPARTMENT OF BUILDINGS

BOROUGH OF BROOKLYN, THE CITY OF NEW YORK

No. 1790964

Date APR 6 1960

CERTIFICATE OF OCCUPANCY

(Standard form adopted by the Board of Standards and Appeals and issued pursuant to Section 646 of the New York Charter, and Sections C.26-181.0 to C26-187.0 inclusive Administrative Code 2.1.3.1. to 2.1.3.7. Building Code.)

This certificate supersedes C. O. No.

To the owner or owners of the building or premises:

THIS CERTIFIES that the ~~new~~—altered—~~existing~~—building—premises located at

1520 Broadway, West Side, 79'4" North of Hancock Street

Block 1489 Lot 16

, conforms substantially to the approved plans and specifications, and to the requirements of the building code and all other laws and ordinances, and of the rules and regulations of the Board of Standards and Appeals, applicable to a building of its class and kind at the time the permit was issued; and

CERTIFIES FURTHER that, any provisions of Section 646F of the New York Charter have been complied with as certified by a report of the Fire Commissioner to the Borough Superintendent.

~~No.~~ Alt. No.— 1854/1949

Occupancy classification— class "A" multiple dwelling - Old Law

Construction classification— non-fireproof

Date of completion— amatr. 4/2/60

. Height 4 stories, 45 feet.

C Area

. Located in Business Use District.

Height Zone at time of issuance of permit plans, 12/16/59

This certificate is issued subject to the limitations hereinafter specified and to the following resolutions of the Board of Standards and Appeals: (Calendar numbers to be inserted here)

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOADS Lbs. per Sq. Ft.	PERSONS ACCOMMODATED			USE
		MALE	FEMALE	TOTAL	
cellar	ground	-	-	-	storage
first	100	-	-	-	one (1) store
second	40	-	-	-	one (1) family
third	40	-	-	-	two (2) families
fourth	40	-	-	-	two (2) families

TOTAL - five (5) families and store

Class "A" Multiple Dwelling - Old Law

Borough Superintendent

CERTIFICATE WILL BE NULL AND VOID IF ALTERED IN ANY MANNER OR ADDITIONS ARE MADE THERETO.

NO CHANGES OF USE OR OCCUPANCY NOT CONSISTENT WITH THIS CERTIFICATE SHALL BE MADE UNLESS FIRST APPROVED BY THE BOROUGH SUPERINTENDENT

Unless an approval for the same has been obtained from the Borough Superintendent, no change or rearrangement in the structural parts of the building, or affecting the light and ventilation of any part thereof, or in the exit facilities, shall be made; no enlargement, whether by extending on any side or by increasing in height shall be made; nor shall the building be moved from one location or position to another; nor shall there be any reduction or diminution of the area of the lot or plot on which the building is located.

The building or any part thereof shall not be used for any purpose other than that for which it is certified.

The superimposed, uniformly distributed loads, or concentrated loads producing the same stresses in the construction in any story shall not exceed the live loads specified on reverse side; the number of persons of either sex in any story shall not exceed that specified when sex is indicated, nor shall the aggregate number of persons in any story exceed the specified total; and the use to which any story may be put shall be restricted to that fixed by this certificate except as specifically stated.

This certificate does not in any way relieve the owner or owners or any other person or persons in possession or control of the building, or any part thereof from obtaining such other permits, licenses or approvals as may be prescribed by law for the uses or purposes for which the building is designed or intended; nor from obtaining the special certificates required for the use and operation of elevators; nor from the installation of fire alarm systems where required by law; nor from complying with any lawful order for additional fire extinguishing appliances under the discretionary powers of the fire commissioner; nor from complying with any lawful order issued with the object of maintaining the building in a safe or lawful condition; nor from complying with any authorized direction to remove encroachments into a public highway or other public place, whether attached to or part of the building or not.

If this certificate is marked "Temporary", it is applicable only to those parts of the building indicated on its face, and certifies to the legal use and occupancy of only such parts of the building; it is subject to all the provisions and conditions applying to a final or permanent certificate; it is not applicable to any building under the jurisdiction of the Housing Division unless it is also approved and endorsed by them, and it must be replaced by a full certificate at the date of expiration.

If this certificate is for an existing building, erected prior to March 14, 1916, it has been duly inspected and it has been found to have been occupied or arranged to be occupied prior to March 14, 1916, as noted on the reverse side, and that on information and belief, since that date there has been no alteration or conversion to a use that changed its classification as defined in the Building Code, or that would necessitate compliance with some special requirement or with the State Labor Law or any other law or ordinance; that there are no notices of violations or orders pending in the Department of Buildings at this time; that Section 646F of the New York City Charter has been complied with as certified by a report of the Fire Commissioner to the Borough Superintendent, and that, so long as the building is not altered, except by permission of the Borough Superintendent, the existing use and occupancy may be continued.

"§ 646 F. No certificate of occupancy shall be issued for any building, structure, enclosure, place or premises wherein containers for combustibles, chemicals, explosives, inflammables and other dangerous substances, articles, compounds or mixtures are stored, or wherein automatic or other fire alarm systems or fire extinguishing equipment are required by law to be or are installed, until the fire commissioner has tested and inspected and has certified his approval in writing of the installation of such containers, systems or equipment to the Borough Superintendent of the borough in which the installation has been made. Such approval shall be recorded on the certificate of occupancy."

Additional copies of this certificate will be furnished to persons having an interest in the building or premises, upon payment of a fee of fifty cents per copy.

7 SARATOGA AVENUE AND 1510-1524 BROADWAY

BROOKLYN, NEW YORK

Remedial Investigation Report

OER Project Number: 17TMP0332K.7

AKRF Project Number: 20568.03

Prepared for:

NYC Mayor's Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, NY 10038

Prepared by:

AKRF

440 Park Avenue South, 7th Floor
New York, New York 10016
646-388-9800

MAY 2018

REMEDIAL INVESTIGATION REPORT

TABLE OF CONTENTS

EXECUTIVE SUMMARY 6
REMEDIAL INVESTIGATION REPORT 9
1.0 SITE BACKGROUND 9
1.1 Site Location and Current Usage 9
1.2 Proposed Redevelopment Plan 9
1.3 Description of Surrounding Property 9
2.0 SITE HISTORY 10
2.1 Past Uses 10
2.2 Previous Investigations 10
2.3 Site Inspection 11
2.4 Areas of Concern 11
3.0 PROJECT MANAGEMENT 12
3.1 Project Organization 12
3.2 Health and Safety 12
3.3 Materials Management 12
4.0 REMEDIAL INVESTIGATION ACTIVITIES 13
4.1 Geophysical Investigation 13
4.2 Borings and Monitoring Wells 13
4.2.1 Drilling and Soil Logging 13
4.2.2 Groundwater Monitoring Well Construction 13
4.2.3 Water Level Measurement 14
4.2.4 Soil Vapor 14
4.3 Sample Collection and Chemical Analysis 15
4.3.1 Soil Sampling 15
4.3.2 Groundwater Sampling 15
4.3.3 Soil Vapor Sampling 16
4.3.4 Chemical Analysis 17
4.3.5 Results of Chemical Analyses 17
5.0 ENVIRONMENTAL EVALUATION 18
5.1 Geological and Hydrogeological Conditions 18
5.1.1 Stratigraphy 18
5.1.2 Hydrogeology 18
5.2 Soil Chemistry 18
5.2.1 Volatile Organic Compounds 18
5.2.2 Semivolatile Organic Compounds 18
5.2.3 Metals 19
5.2.4 Pesticides and PCBs 19
5.3 Groundwater Chemistry 20
5.3.1 Volatile Organic Compounds 20
5.3.2 Semivolatile Organic Compounds 20
5.3.3 Metals 20
5.3.4 Pesticides and PCBs 20
5.4 Soil Vapor Chemistry 20
5.5 Prior Activity 21
5.6 Quality Assurance/Quality Control (QA/QC) Sampling 21

FIGURES

Figure 1 Site Location
Figure 2 Site Plan and Sampling Locations
Figure 3 Surrounding Land Use
Figure 4 Soil Concentrations above NYSDEC Soil Cleanup Objectives
Figure 5 Groundwater Concentrations above NYSDEC AWQS
Figure 6 Soil Vapor Concentrations

TABLES

Table 1 Soil Analytical Results of Volatile Organic Compounds (VOCs)
Table 2 Soil Analytical Results of Semivolatile Organic Compounds (SVOCs)
Table 3 Soil Analytical Results of Metals
Table 4 Soil Analytical Results of Pesticides
Table 5 Soil Analytical Results of Polychlorinated Biphenyls (PCBs)
Table 6 Groundwater Analytical Results of VOCs
Table 7 Groundwater Analytical Results of SVOCs
Table 8 Groundwater Analytical Results of Metals
Table 9 Groundwater Analytical Results of Pesticides
Table 10 Groundwater Analytical Results of PCBs
Table 11 Soil Vapor Analytical Results

APPENDICES

Appendix A Phase I ESA
Appendix B Field Sampling Logs
Appendix C Investigation Derived Waste Disposal Manifest
Appendix D Laboratory Data Deliverables for Soil and Groundwater
Appendix E Laboratory Data Deliverables for Soil Vapor
Appendix F DUSRs for Soil, Groundwater, and Soil Vapor Samples

LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
CAMP	Community Air Monitoring Plan
COC	Contaminant of Concern
CPP	Citizen Participation Plan
CSM	Conceptual Site Model
DER-10	New York State Department of Environmental Conservation Technical Guide 10
FID	Flame Ionization Detector
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IRM	Interim Remedial Measure
NAPL	Non-aqueous Phase Liquid
NYC VCP	New York City Voluntary Cleanup Program
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYSDOH ELAP	New York State Department of Health Environmental Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
QEP	Qualified Environmental Professional
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective
SPEED	Searchable Property Environmental Electronic Database

CERTIFICATION

I, Deborah Shapiro, am a Qualified Environmental Professional, as defined in RCNY § 43-1402(ar). I have primary direct responsibility for implementation of the Remedial Investigation for the 7 Saratoga Avenue and 1510-1524 Broadway, (17TMP0332K). I am responsible for the content of this Remedial Investigation Report (RIR), have reviewed its contents and certify that this RIR is accurate to the best of my knowledge and contains all available environmental information and data regarding the property.

Deborah Shapiro, QEP	5/23/2018	
Qualified Environmental Professional	Date	Signature

EXECUTIVE SUMMARY

The Remedial Investigation Report (RIR) provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to RCNY§ 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance and was conducted in accordance with the Phase II Scope of Work prepared by the New York City Office of Environmental Remediation (OER).

Site Location and Current Usage

The approximately 20,000-square feet (sf) Site is located at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant section of Brooklyn, New York (hereafter referred to as the "Site"). The Site is also identified as Block 1489, Lots 6 and 11 through 18 on the New York City Tax Map. Figure 1 shows the Site location. Currently, the Site is vacant and enclosed by construction fencing. A portion of the adjacent two-story building on the Site block encroaches onto the southern portion of the Site. A map of the Site boundary is shown in Figure 2.

The Site is bounded by Jefferson Avenue, followed by a transit system substation to the north; Broadway and elevated subway (J and Z lines) tracks, followed by commercial uses to the east; a brick and cinder block building and Hancock Street, followed by a medical center and residences to the south; and a brick building and Saratoga Avenue, followed by residences to the west. The proposed redevelopment will require excavation to approximately 12 feet below grade.

Summary of Proposed Redevelopment Plan

The proposed redevelopment consists of one five-story structure with a full cellar level. The cellar will contain parking and mechanical space. The first floor will contain commercial retail space, a residential lobby, residential recreational areas, and additional mechanical rooms. Residential units would occupy the second through fifth floors. An exterior courtyard is proposed on the second floor.

Summary of Past Uses of Site and Areas of Concern

Based on AKRF's March 2017 Phase I Environmental Site Assessment (ESA), the Site was historically developed with four, three-story offices and stores as early as 1888. Nine additional four-story commercial buildings were developed by 1908. By 1932, two additional buildings were located on the Site. The Site was occupied by various uses between approximately 1932 and 1962, including a paint and oils store, a dry cleaner, and unspecified manufacturing. The Site buildings were demolished between 1976 and 1987. The Site has remained undeveloped since 1987.

The following are considered Areas of Concern (AOCs) for the Site:

1. Sanborn maps identified a dry cleaner at 7 Saratoga Avenue from approximately 1949 to 1965.
2. Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified a watch and jewelry repair at 1510 Broadway in 1949, respectively.
3. City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928.
4. City Directories identified a dress house/dress manufacturer at 1520 Broadway in 1934.
5. City Directories identified a printer at 1516 Broadway in 1934.
6. Historic uses in the surrounding area, including:
    a. Two closed New York SPILLS Database listings within 120 feet of the Site.

b. Syk Cleaners, located at 1561 Broadway, approximately 360 feet southeast of the Site, was identified as a small quantity generator (SQG) and historical large quantity generator (LQG) and conditionally exempt small quantity generator (CESQG) of spent halogenated solvents and tetrachloroethylene (PCE) from 1993 to 2016.

7. Historic fill may be present at the Site.

Summary of the Work Performed under the Remedial Investigation

On behalf of OER, AKRF performed the following scope of work:

1. Conducted a Site inspection to identify AOCs, existing utilities, and physical obstructions (i.e. structures, buildings, etc.);
2. Installed 12 soil borings across the Site, and collected 24 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Collected three groundwater samples from groundwater monitoring wells installed during this RI for chemical analysis to evaluate groundwater quality; and
4. Installed 10 soil vapor probes at the Site and collected 10 soil vapor samples for chemical analysis.

Summary of Environmental Findings

1. Elevation of the Site ranges from approximately 44 to 46 feet.
2. Depth to groundwater measurements from the installed monitoring wells ranged from approximately 35.8 to 36.5 feet beneath the Site.
3. Based on USGS reports, groundwater likely flows in a northerly direction toward Newtown Creek, located approximately 2 miles northwest of the Site. However, actual groundwater flow direction can be affected by many factors, including subsurface openings or obstructions such as basements, utilities, current or past pumping of groundwater, past filling, bedrock geology, tidal fluctuations, and other factors beyond the scope of this assessment. Groundwater in Brooklyn is not used as a source of potable water.
4. Bedrock was not encountered during the investigation. Based on USGS reports, bedrock is expected to be between approximately 300 and 400 feet below grade surface.
5. The stratigraphy of the Site, from the surface down, consists of approximately 6 to 12 feet of historic fill material (sand with varying amounts of gravel, brick, coal ash, glass and wood), underlain by native sand with varying amounts of silt and gravel. Groundwater was observed in four borings advanced during this RI at depths ranging from 37.5 to 39 feet below grade.
6. Soil/fill samples results were compared to New York State Department of Conservation (NYSDEC) Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Use Soil Cleanup Objectives (RRSCOs) as presented in 6NYCRR Part 375-6.8. VOCs were detected in 20 of 24 soil samples, including low concentrations of acetone, chloroform, chloromethane, methyl chloride, 1,2-dimethylbenzene, and tetrachloroethene, below their respective UUSCOs and RRSCOs. Seven polycyclic aromatic hydrocarbons (PAHs), a class of SVOCs commonly associated with historic fill materials, combustion products such as coal, and/or petroleum, were detected in one or more samples above their respective UUSCOs and/or RRSCOs including: benzo(a)anthracene (maximum concentration of 41.8 mg/kg), benzo(a)pyrene (maximum concentration of 39.5 mg/kg), benzo(b)fluoranthene (maximum concentration of 54.5 mg/kg), benzo(k)fluoranthene (maximum concentration of 16 mg/kg), chrysene (maximum concentration of 39.6 mg/kg), dibenzo(a,h)anthracene (maximum concentration of 6.1 mg/kg), and indeno(1,2,3-cd)pyrene (maximum concentration of 18.1 mg/kg).

Metals, including barium, cadmium, lead, mercury, selenium, and/or zinc, were detected at concentrations ranging from 0.195 mg/kg to 1,790 mg/kg, above the UUSCOs in 23 of 24 soil samples. Of the UUSCO exceedances, metals were detected at concentrations above the RRSCOs in five samples; specifically, barium (maximum concentration of 1,790 mg/kg), cadmium (maximum concentration of 8.38 mg/kg), lead (maximum concentration of 1,500 mg/kg), and mercury (maximum concentration of 1.83 mg/kg). Elevated lead concentrations above 1,000 mg/kg can indicate a potential for hazardous lead levels, but Toxicity Characteristic Leaching Procedure (TCLP) lead analysis is required to confirm whether or not hazardous levels exist within the soil.

Select pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected above their respective UUSCOs, but below their respective RRSCOs. PCBs were not detected above laboratory detection limits in any of the analyzed soil samples.

7. Groundwater sample analytical data was compared to NYSDEC Technical & Operational Series (TOGS) Ambient Water Quality Standards (AWQS). The VOC tetrachloroethylene (PCE) was detected in all three groundwater samples at concentrations between 18.9 micrograms per liter (µg/L) and 25.5 µg/L, above its AWQS of 5 µg/L. No other VOCs were detected above their respective AWQS in the analyzed groundwater samples. No SVOCs were detected above their respective AWQS in the analyzed groundwater samples.

   Up to 15 metals were detected in the unfiltered (total) analysis of the groundwater samples, and up to 12 metals were detected in the filtered (dissolved) analysis. Iron was detected above its AWQS in MW-11-20171211 (total) at a concentration of 644 µg/L. Sodium was detected above its AWQS in all three groundwater samples (both total and dissolved at maximum concentration of 118,000 µg/L).

   Pesticides and PCBs were not detected in any of the analyzed groundwater samples.

8. Twenty-six VOCs were detected in the 10 soil vapor samples. VOCs associated with petroleum [including benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX), 1,2,4- and 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene, heptane, and n-hexane] were detected at concentrations between 2.9 micrograms per cubic meter (µg/m^3) and 315 µg/m^3. Chlorinated VOCs (including chloroform, methylene chloride, TCE, PCE, and trichlorofluoromethane) were detected at concentrations between 1.12 µg/m^3 and 277 µg/m^3. Other VOCs (including 2-butanone, acetone, and carbon disulfide) were detected at concentrations between 2.5 µg/m^3 and 118 µg/m^3. PCE was detected in SV-1-20171129 and SV-2-20171129 at concentrations of 277 and 43.4 µg/m^3, respectively. TCE was detected in SV-1-20171129 and SV-2-20171129 at concentrations of 10.2 and 8.06 µg/m^3, respectively.

REMEDIAL INVESTIGATION REPORT

1.0 SITE BACKGROUND

On behalf of the New York City Office of Environmental Remediation (OER) AKRF investigated the 20,000 square foot site located at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford Stuyvesant section of Brooklyn, New York (hereafter referred to as the "Site"). The Remedial Investigation (RI) was performed on November 27, 2017 through December 11, 2017 in accordance with the OER-approved Scope of Work dated April 2017. This Remedial Investigation Report (RIR) summarizes the nature and extent of contamination and provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy that is protective of human health and the environment consistent with the use of the Site pursuant to RCNY§ 43-1407(f).

1.1 Site Location and Current Usage

The Site is located at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant section of Brooklyn, New York and is identified as Block 1489, Lots 6 and 11 through 18 on the New York City Tax Map. Figure 1 shows the Site location. The Site is approximately 20,000-square feet and is bounded by Jefferson Avenue, followed by a transit system substation to the north; Broadway and elevated subway (J and Z lines) tracks, followed by commercial uses to the east; a brick and cinder block building and Hancock Street, followed by a medical center and residences to the south; and a brick building and Saratoga Avenue, followed by residences to the west. A map of the Site boundary is shown in Figure 2. Currently, the Site is vacant and enclosed by construction fencing. A portion of the adjacent two-story building encroaches onto the southern portion of the Site.

1.2 Proposed Redevelopment Plan

The proposed redevelopment consists of one five-story structure with a full cellar level. The cellar will contain parking and mechanical space. The first floor will contain commercial retail space, a residential lobby, residential recreational areas, and additional mechanical rooms. Residential units would occupy the second through fifth floors. An exterior courtyard is proposed on the second floor.

1.3 Description of Surrounding Property

The surrounding area is predominantly residential and commercial in use, with some institutional uses. Nearby sensitive receptors include day care centers and public schools. Figure 3 shows the surrounding land usage.

2.0 SITE HISTORY

2.1 Past Uses

Based on historic records, the Site was developed with four, three-story offices and stores as early as 1888. Between 1908 and 1932, 11 additional buildings were located on the Site including but not limited to: an apparent cleaning and dying facility at 1520 Broadway. The Site was occupied by various uses between approximately 1932 and 1962; including a dress house/dress manufacturer, a printer, watch and jewelry repair a paint and oils store, a dry cleaner, and unspecified manufacturing. The Site buildings were demolished between 1976 and 1987. The Site has remained undeveloped since 1987.

2.2 Previous Investigations

Phase I Environmental Site Assessment (ESA), MWBE Site C, 7 Saratoga Avenue and 1510-1524 Broadway, Brooklyn, NY, AKRF, Inc., March 2017

AKRF, Inc. (AKRF) prepared a Phase I ESA for the Site in March 2017 in accordance with ASTM E1527-13. The Phase I ESA included the findings of a Site reconnaissance, and a review and evaluation of available historical records and regulatory database listings.

The Phase I ESA revealed evidence of on-site Recognized Environmental Conditions (RECs), including:

- Historical Sanborn maps and City Directories indicated that a dry cleaner operated at 7 Saratoga Avenue from approximately 1949 to 1965. Additionally, Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949.
- Historical Sanborn maps and electronic Buildings Department (DOB) records indicated that the Property was previously developed with commercial and residential structures. The buildings dated to before 1888 and were demolished by 1985. Buried demolition debris associated with the former buildings may be present at the Site, as could include historical fill of unknown origin and possibly abandoned underground storage tanks (USTs). Electronic DOB records included an oil burner application for 1512 Broadway.
- Industrial, automotive, and dry cleaning uses were also noted in the surrounding area, including garages with gasoline tanks south/west-adjacent to the Site on the 1932 map and approximately 75 feet south of the Site on maps from 1932 to 1962. Auto repair was shown with one of the garages 75 feet south of the Site and approximately 195 feet southwest of the Site on the 1962 map. Potential auto repair was identified in the City Directories on the east-adjacent block from 1965 to 1985. Substations were identified on the south- and northwest-adjacent blocks from 1908 to 2006 and 1976 to 2007 maps, respectively. A chemical and bleach bottling facility was noted approximately 250 feet northwest of the Site on maps from 1951 and 1962, followed by a paint manufacturer from 1965 to 2007. A dry cleaner was shown on Broadway, approximately 250 feet south-southwest of the Property on maps from 1965 to 1979. Nearby Petroleum Bulk Storage (PBS), Spills, and Resource Conservation and Recovery Act (RCRA) listings with limited potential to have affect the Site subsurface were identified in the regulatory database search.

Other On-site Environmental Concern (items outside the scope of ASTM E1527-13 such as asbestos containing material [ACM], lead-based paint [LBP] and/or polychlorinated biphenyls [PCBs] in building materials or fill/debris)

- Potential fill materials and/or demolition debris beneath the Site could contain ACM, LBP, and/or PCBs.

The Phase I ESA is included as Appendix A.

2.3 Site Inspection

Visual inspection of the Property was performed on January 11, 2017 by Ms. Margo Davis of AKRF. Mr. James Edgeworth III of New York City Housing Preservation and Development (HPD) provided access to the Site. At the time of the inspection, the weather was mostly sunny and approximately 45 ºF with good visibility.

Sparse overgrown vegetation, including trees, grass, shrubs, and weeds, was noted at the Site, primarily around the perimeter. Non-vegetated portions of the Site were gravel and sand covered. Some stockpiles of gravel were noted on the Site. Concrete blocks were observed on the southern portion of the Site. According to Site personnel, the blocks were left on-site by a previous occupant using the area for construction staging and storage. Site personnel indicated that removal of the materials was in the process of being coordinated. Miscellaneous trash was noted across the Site.

At the time of the reconnaissance, contractors were conducting work at the Site. Four small (less than 1 gallon) containers of motor oil were observed at the Site, but appeared to be associated with the on-site work. No other debris associated with petroleum or chemical use or storage was observed. The on-site workers were using a roll-off dumpster on the northwestern portion of the Site. A metal shed and a portable toilet was noted on the northwestern perimeter of the Site. Neighboring properties were also viewed, but only from public rights-of-way.

2.4 Areas of Concern

The following are considered Areas of Concern (AOCs) for the Site:

1. Sanborn maps identified a dry cleaner at 7 Saratoga Avenue from approximately 1949 to 1965.
2. Sanborn maps identified unspecified manufacturing at 1510 Broadway in 1962 and City Directories identified a watch and jewelry repair at 1510 Broadway in 1949, respectively.
3. City Directories identified an apparent cleaning and dying facility at 1520 Broadway in 1928.
4. City Directories identified a dress house/dress manufacturer at 1520 Broadway in 1934.
5. City Directories identified a printer at 1516 Broadway in 1934.
6. Historic uses in the surrounding area, including:
    a. Two closed New York SPILLS Database listings within 120 feet of the Site.
    b. Syk Cleaners, located at 1561 Broadway, approximately 360 feet southeast of the Site, was identified as a small quantity generator (SQG) and historical large quantity generator (LQG) and conditionally exempt small quantity generator (CESQG) of spent halogenated solvents and tetrachloroethylene (PCE) from 1993 to 2016.
7. Historic fill may be present at the Site.

3.0 PROJECT MANAGEMENT

3.1 Project Organization

The Qualified Environmental Professional (QEP) responsible for preparation of this RIR is Ms. Deborah Shapiro, QEP.

3.2 Health and Safety

All work described in this RIR was performed in full compliance with applicable laws and regulations, including Site and Occupational Safety and Health Administration (OSHA) worker safety requirements and Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. The work described in this RIR was also performed in accordance with a site-specific Health and Safety Plan (HASP).

3.3 Materials Management

All material encountered during the RI was managed in accordance with applicable laws and regulations. Investigation derived waste generated was drummed and stored on-site during the RI.

4.0 REMEDIAL INVESTIGATION ACTIVITIES

On behalf of OER, AKRF performed the following scope of work:

1. Conducted a Site inspection to identify AOCs, existing utilities, and physical obstructions (i.e. structures, buildings, etc.);
2. Installed 12 soil borings across the Site, and collected 24 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Collected three groundwater samples from groundwater monitoring wells installed during this RI for chemical analysis to evaluate groundwater quality; and
4. Installed 10 soil vapor probes at the Site and collected 10 soil vapor samples for chemical analysis.

4.1 Geophysical Investigation

A geophysical survey was conducted by Hager-Richter Geoscience, Inc. (Hager-Richter) on November 27, 2017. No utilities or major anomalies were detected during the geophysical survey. Prior to mobilization for drilling, AKRF obtained a Metropolitan Transportation Authority (MTA) approval because the property is designated "MTA restricted." MTA jurisdiction applies when construction is within 200 feet of a transit line or other railway right-of-way located on the first floor and/or below. Hager-Richter used the AKRF submitted MTA approval to mark out and clear the proposed boring locations. No obstructions to the borings were detected.

4.2 Borings and Monitoring Wells

4.2.1 Drilling and Soil Logging

A track-mounted Geoprobe® Direct-Push Probe (DPP) was used by Cascade Drilling LP (Cascade) to advance 12 soil borings (SB-1 through SB-12) at the locations shown on Figure 2. Soil borings extended to depths ranging between 15 and 50 feet below grade. SB-1, SB-4, SB-6, and SB-11, which were later converted into permanent groundwater monitoring wells, were advanced 50 feet. Soils borings SB-2, SB-3, SB-5, SB-7 through SB-10, and SB-12 were advanced to 15 feet.

At each boring, AKRF field personnel prepared NYSDEC DER-10 compliant boring logs using the modified Burmeister soil classification system. Prior to collecting samples, recovered soil was screened for volatile organic compounds (VOCs) using a photoionization detector (PID) with a 10.6eV lamp and evaluated for visual and olfactory evidence of contamination.

The stratigraphy of the Site, from the surface down, consisted of approximately 6 to 12 feet of fill material (sand with varying amounts of gravel, brick, coal ash, glass and wood), underlain by native sand with varying amounts of silt and gravel. Groundwater was encountered in four borings advanced during this RI at depths ranging from approximately 37.5 to 39 feet below grade. Bedrock was not encountered.

Boring logs are included in Appendix B. A map showing the locations of the soil borings is included as Figure 2.

4.2.2 Groundwater Monitoring Well Construction

Three of the soil borings were completed as 2-inch diameter permanent groundwater monitoring wells (MW-1, MW-4, and MW-11) as shown on Figure 2. The wells were constructed with 15 feet of 0.020-inch slotted polyvinyl chloride (PVC) pre-pack well screen installed approximately 10 feet into the observed water table with solid PVC riser

to the ground surface. The annular space around the well was included in the pre-pack and consisted of No. 2 sand from 50 to 33 feet below grade surface, followed by 2 feet of bentonite seal, followed 30 feet of No. 00 sand, and finally, 1 foot of grout. The wells were finished with a locking j-plug and flush-mounted protective locking well cover.

Following installation, each well was developed via pumping and surging with a Waterra pump affixed with dedicated tubing to remove any accumulated fines and establish a hydraulic connection with the surrounding aquifer. Purge water was monitored with a Horiba U-52 water quality monitor. Development continued until turbidity within the well was less than 50 nephelometric turbidity units (NTUs) for three successive readings and until water quality indicators have stabilized to within 10% for pH, temperature, oxidation reduction potential (ORP), dissolved oxygen, and specific conductivity for three successive readings. Purge water was containerized in properly labeled Department of Transportation (DOT)-approved 55-gallon drums for off-site disposal at a permitted facility. The disposal manifest is provided in Appendix C. Groundwater monitoring well development and construction logs are provided in Appendix B.

4.2.3 Water Level Measurement

The depth to groundwater was measured within each monitoring well using a Solinst oil/water interface probe. Depth to groundwater beneath the Site ranged from approximately 35.8 feet below the top of casing (MW-11) in the southeastern portion of the Site to 36.5 feet below the top of casing (MW-1) in the northwestern portion of the Site.

4.2.4 Soil Vapor

A total of 10 soil vapor sampling points (SV-1 through SV-5 and SV-7 through SV-11) were installed at the Site, at the locations shown on Figure 2. The sampling points were installed by Cascade using a track-mounted, Geoprobe® mobile drilling rig. The 0.75-inch diameter probe consisted of an expendable 6-inch long stainless steel screened drive point, which was installed to a depth of approximately 5 feet below surface grade. Dedicated Teflon tubing with threaded fittings was connected to the probe. The boring was backfilled with clean silica sand and a layer of hydrated bentonite around the tubing to grade to provide a seal ensuring the collection of a representative sample and prevent short-circuiting of ambient air into the vapor sampling point.

Prior to sampling, each soil vapor point was purged of three sample volumes using a GilAir Plus air pump. During purging, an inverted one-gallon bucket was placed over the sampling point and helium gas was introduced through a small hole in the bucket to saturate the atmosphere around the sample port with helium gas. The purged vapors were collected into a Tedlar bag and monitored using a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point and to verify the adequacy of the bentonite seal. Helium concentrations of less than 10 percent were considered sufficient to verify a tight seal. All soil vapor points passed the seal integrity tests with helium readings of 0.0 part per million (ppm). Purged vapors were also field-screened for organic vapors using a PID and concentrations ranged from 2.0 parts per million to 4.5 ppm. After purging, the tubing was connected to a laboratory-supplied 6-liter SUMMA canister equipped with a flow regulator. One soil vapor sample was paired with 6-liter SUMMA canisters for collection of an ambient air sample. The samples were each collected over a two-hour period, and the samples were analyzed for VOCs by EPA Method TO-15. The soil vapor and ambient air quality sampling logs are included in Appendix B.

4.3 Sample Collection and Chemical Analysis

Sampling performed as part of the field investigation was conducted for all AOCs and also considered other means for bias of sampling based on professional judgment, area history, discolored soil, stressed vegetation, drainage patterns, field instrument measurements, odor, or other field indicators. All media including soil, groundwater and soil vapor have been sampled and evaluated in the RIR. Discrete (grab) samples have been used for final delineation of the nature and extent of contamination and to determine the impact of contaminants on public health and the environment. The sampling performed and presented in this RIR provides sufficient basis for evaluation of remedial action alternatives, establishment of a qualitative human health exposure assessment, and selection of a final remedy.

4.3.1 Soil Sampling

During this RI, 24 soil samples were collected for chemical analysis from the 12 soil borings indicated on Figure 2. In each of the 12 borings, a surface soil sample was collected from the 0 to 2 foot below grade interval. At soil borings SB-2 through SB-5, SB-8 and SB-12, a second sample was collected from 10 to 12 feet below grade. At soil borings SB-1, SB-6, SB-7, SB- 9, SB-10 and SB-11, a second sample was collected from the 2 foot interval at the bottom of the fill horizon (approximately 4 to 12 feet below grade), immediately above the underlying native material. No evidence of contamination (e.g., odors, staining, or elevated PID readings) were detected in the soil borings advanced during the RI.

Soil samples were placed in laboratory-supplied containers in ice-filled coolers, and submitted to the laboratory via courier with appropriate chain-of-custody documentation. Soil samples were submitted to Chemtech Consulting (Chemtech) of Mountainside, New Jersey, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory for analysis of VOCs by U.S. Environmental Protection Agency (EPA) Method 8260, semivolatile organic compounds (SVOCs) by EPA Method 8270, Target Analyte List (TAL) metals (6000/7000 series), pesticides by EPA Method 8081, and polychlorinated biphenyls (PCBs) by EPA Method 8082. For quality assurance/quality control (QA/QC) purposes, one aqueous trip blank, one blind duplicate, one matrix spike/matrix spike duplicate (MS/MSD), and one field blank were collected and submitted for laboratory analysis. The QA/QC samples were analyzed for the aforementioned parameters, with the exception of the trip blank, which was only analyzed for VOCs.

Data on soil sample collection, including chemical analyses, dates of collection, and sample depths, is reported in Tables 1 through 5. Laboratory and analytical methods are discussed in Section 4.3.4 below.

4.3.2 Groundwater Sampling

During this RI, three groundwater samples were collected for chemical analysis from MW-1, MW-4, and MW-11 as shown on Figure 2. Groundwater samples were collected using low-flow sampling techniques approximately one week after development.

Groundwater samples were placed in laboratory-supplied containers in ice-filled coolers, and submitted to the laboratory via courier with appropriate chain-of-custody documentation. Groundwater samples were submitted to Chemtech for analysis of VOCs by EPA Method 8260, SVOCs by EPA Method 8270, TAL metals (6000/7000 series), pesticides by EPA Method 8081, and PCBs by EPA Method 8082. The groundwater analyses for metals were conducted on both filtered (total) and unfiltered (dissolved) samples. For QA/QC purposes, one aqueous trip blank, one blind duplicate, one MS/MSD, and one field blank were submitted with the groundwater samples. The

QA/QC samples were analyzed for the aforementioned parameters with the exception of the trip blank, which was only analyzed for VOCs.

Groundwater sample collection data is reported in Tables 6 through 10. Laboratory and analytical methods are discussed in Section 4.3.4 below.

4.3.3 Soil Vapor Sampling

Ten soil vapor probes were installed and 10 soil vapor samples were collected for chemical analysis from the locations shown on Figure 2. Soil vapor sampling probes were installed at approximately 5 feet below grade using the track-mounted Geoprobe® DPP by advancing a 0.75-inch diameter hollow probe rod fitted with an expendable 6-inch long stainless steel screen drive point. The hollow probe rod was then removed and the boring backfilled with clean silica sand around the screen. Hydrated bentonite was then used to seal up to the ground surface.

Prior to collection, each sampling point was purged of three implant volumes at a flow rate of approximately 0.2 liters per minute. During purging, an inverted five-gallon bucket was placed over the sampling point and helium gas was introduced through a small hole in the bucket to saturate the atmosphere around the sample port with helium gas. Purged vapors were collected in a Tedlar bag and field-screened for organic vapors using a PID. The purged air was also analyzed with a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point. All soil vapor points passed the seal integrity tests with helium readings below 10%. PID readings were detected at all soil vapor locations and ranged from 2.0 parts per million (ppm) to 4.5 ppm.

After purging, each probe was connected via Teflon-lined polyethylene tubing to a laboratory-supplied batch-certified clean 6-liter SUMMA canister equipped with a flow regulator set to collect a sample over a two-hour sampling period. Immediately after opening the flow control valve, the initial SUMMA canister vacuum (inches of mercury) was noted. After approximately two hours, the flow controller valve was closed, the final vacuum noted, and the canister placed in a shipping carton for delivery to Alpha for analysis of VOCs by EPA Method TO-15. The flow rate during sample collection did not exceed 0.2 liters/minute. Each SUMMA canister was labeled to identify the sample identification, date, time, and vacuum readings. The identification numbers for the SUMMA canisters and flow controllers were noted on the chain-of-custody documentation and the samples were transported by courier directly to Chemtech.

Soil vapor sample collection data is reported in Table 11. Soil vapor sampling logs are included in Appendix B. Methodologies used for soil vapor assessment conform to the updated version of the NYSDOH Final Guidance on Soil Vapor Intrusion, October 2006.

4.3.4 Chemical Analysis

Chemical analytical work presented in this RIR has been performed in the following manner:

Factor	Description
Quality Assurance Officer	The chemical analytical quality assurance is directed by Deborah Shapiro, QEP.
Chemical Analytical Laboratory	Chemical analytical laboratory(s) used in the RI is NYS ELAP certified and was Chemtech Consulting of Mountainside, New Jersey.
Third-Party Data Validator	L.A.B. Validation Corp.
Chemical Analytical Methods	Soil analytical methods: • TAL Metals by EPA Method 6010C (rev. 2007); • VOCs by EPA Method 8260C (rev. 2006); • SVOCs by EPA Method 8270D (rev. 2007); • Pesticides by EPA Method 8081B (rev. 2000); and • PCBs by EPA Method 8082A (rev. 2000). Groundwater analytical methods: • TAL Metals by EPA Method 6010C (rev. 2007); • VOCs by EPA Method 8260C (rev. 2006); • SVOCs by EPA Method 8270D (rev. 2007); • Pesticides by EPA Method 8081B (rev. 2000); and • PCBs by EPA Method 8082A (rev. 2000). Soil vapor analytical methods: • VOCs by EPA Method TO-15

4.3.5 Results of Chemical Analyses

Laboratory data for soil, groundwater, and soil vapor samples are summarized in Tables 1 through 5, 6 through 10, and 11, respectively. Laboratory data deliverables for soil and groundwater samples evaluated in this RIR are provided in digital form in Appendix D. Laboratory data deliverables for soil vapor samples evaluated in this RIR are provided in digital form in Appendix E.

5.0 ENVIRONMENTAL EVALUATION

5.1 Geological and Hydrogeological Conditions

5.1.1 Stratigraphy

The stratigraphy of the Site, from the surface down, consists of approximately 4 to 12 feet of fill material (sand with varying amounts of gravel, brick, coal ash, glass and wood), underlain by native sand with varying amounts of silt and gravel. Groundwater was encountered in four borings advanced during this RI at depths ranging from 35.8 to 36.5 feet below grade. Bedrock was not encountered.

5.1.2 Hydrogeology

Groundwater was encountered in four borings (SB-1, SB-4, SB-6, and SB-11) installed during this RI. Depth to groundwater was measured from the three monitoring wells (MW-1, MW-4, and MW-11) and varied from 35.8 feet below grade (MW-11) in the southeastern portion of the Site to 36.5 feet below grade (MW-1) in the northwestern portion of the Site. According to USGS mapping, groundwater likely flows in a northerly direction toward Newtown Creek, located approximately 2 miles northwest of the Site. However, actual groundwater flow direction can be affected by many factors, including subsurface openings or obstructions such as basements, utilities, current or past pumping of groundwater, past filling, and other factors beyond the scope of this assessment.

5.2 Soil Chemistry

Data collected during the RI is sufficient to delineate the vertical and horizontal distribution of contaminants in soil/fill at the Site. Soil sample analytical results were compared to NYSDEC 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Part 375 Restricted Residential Soil Cleanup Objectives (RRSCOs). A summary table of data for chemical analyses performed on soil samples is included in Tables 1 through 5. Figure 4 shows the locations and concentrations of soil samples that exceed the NYSDEC UUSCOs and RRSCOs.

5.2.1 Volatile Organic Compounds

Low concentrations of the VOCs acetone (max 0.0265 ppm), chloroform (max of 0.0026 ppm), ethylbenzene (max 0.00053 ppm), m,p-xylene (max 0.0023 ppm), methylene chloride (max 0.0049 ppm), o-xylene (max 0.00075 ppm), PCE (max 0.005 ppm), trichlorofluoromethane (max 0.0006 ppm), and total xylenes (max 0.0031 ppm) were detected in 19 of the soil samples. No VOCs were detected above their respective UUSCOs or RRSCOs in the analyzed soil samples.

Soil analytical results for VOCs are presented in Table 1.

5.2.2 Semivolatile Organic Compounds

Seven polycyclic aromatic hydrocarbons (PAHs), a class of SVOCs commonly associated with fill materials, combustion products such as coal, and/or petroleum, were detected in up to 16 samples at concentrations above their respective UUSCOs including: benzo(a)anthracene (max 41.8 ppm), benzo(a)pyrene, (max 39.5 ppm) benzo(b)fluoranthene (max 54.5 ppm), benzo(k)fluoranthene (max 16 ppm), chrysene (max 39.6 ppm), dibenzo(a,h)anthracene (max 6.1 ppm), and indeno(1,2,3-cd)pyrene (max 18.5 ppm). Concentrations ranged from 0.37 to 54.5 milligrams per kilogram (mg/kg).

Several PAHs also exceeded their respective RRSCOs in 17 soil samples. Specifically, benzo(a)anthracene was detected above its RRSCO of 1 mg/kg in 13 samples at concentrations ranging from 1.2 to 41.8 mg/kg. Benzo(a)pyrene was detected above its RRSCO of 1 mg/kg in 12 samples at concentrations ranging from 1.1 to 39.5 mg/kg. Benzo(b)fluoranthene was detected above its RRSCO of 1 mg/kg in 16 samples at concentrations ranging from 1.1 to 54.5 mg/kg. Benzo(k)fluoranthene was detected above its RRSCO of 3.9 mg/kg in sample SB-3(0-2)-20171127 at a concentration of 16 mg/kg. Chrysene was detected above its RRSCO of 3.9 mg/kg in five samples at concentrations ranging from 4.1 to 39.6 mg/kg. Dibenzo(a,h)anthracene was detected above its RRSCO of 0.33 mg/kg in five samples at concentrations ranging from 0.45 to 6.1 mg/kg. Indeno(1,2,3-cd)pyrene was detected above its RRSCO of 0.5 mg/kg in 16 samples at concentrations ranging from 0.52 to 18.1 mg/kg.

Soil analytical results for SVOCs are presented in Table 2.

5.2.3 Metals

Metals, including barium, cadmium, lead, mercury, selenium, and/or zinc, were detected in 23 soil samples at concentrations ranging from 0.195 mg/kg of mercury to 1,790 mg/kg of lead, above their respective UUSCOs.

Of the UUSCO exceedances, metals were detected in five samples at concentrations above their respective RRSCOs. Barium was detected above its RRSCO of 400 mg/kg, in soil samples SB-6(5-7)-20171128 and SB-8(0-2)-20171127 at concentrations of 542 mg/kg and 1,790 mg/kg, respectively. Cadmium was detected above its RRSCO of 4.3 mg/kg in soil sample SB-9(0-2)-20171127 at a concentration of 8.38 mg/kg. Lead was detected above its RRSCO of 400 mg/kg in four samples [SB-8(0-2)-20171127, SB-9(0-2)-20171127, SB-10(0-2)-20171127, and SB-12(0-2)-20171127] at concentrations ranging from 595 to 1,500 mg/kg. Mercury was detected above its RRSCO of 0.81 mg/kg in soil sample SB-6(5-7)-20171128 at a concentration of 1.83 mg/kg.

No other metals exceeded their respective UUSCOs or RRSCOs in the analyzed soil samples. Several metals concentrations were identified as "J" values, indicating estimated concentrations.

Soil analytical results for metals are presented in Table 3.

5.2.4 Pesticides and PCBs

Select pesticides were detected above their respective UUSCOs, but below their respective RRSCOs. The pesticide 4,4'-DDD was detected above its UUSCO of 0.0033 mg/kg in soil sample SB-7(0-2)-20171127 at a concentration of 0.0111 mg/kg and sample SB-12(10-12)-20171127. 4,4'-DDE was detected above its UUSCO of 0.0033 mg/kg in eight soil samples [SB-5(0-2)-20171127, SB-6(0-2)-20171128, SB-6(5-7)-20171128, SB-7(0-2)-20171127, SB-8(0-2)-20171127, SB-9(0-2)-20171127, SB-11(6-8)-20171129, and SB-12(0-2)-20171127] at concentrations ranging from 0.0038 mg/kg to 0.0318 mg/kg. 4,4'-DDT was detected above its UUSCO of 0.0033 mg/kg in 11 soil samples [SB-3(10-12)-20171127, SB-5(0-2)-20171127, SB-6(0-2)-20171128, SB-6(5-7)-20171128, SB-7(0-2)-20171127, SB-8(0-2)-20171127, SB-9(0-2)-20171127, SB-10(0-2)-20171127, SB-11(6-8)-20171129, SB-12(0-2)-20171127 and SB-12(10-12)-20171127] at concentrations ranging from 0.0058 to 0.11 mg/kg.

PCBs were detected in sample SB-12(0-2)-20171127 at concentration of 0.87 mg/kg, above the UUSCO of 0.1 mg/kg. PCBs were not detected above laboratory reporting limits in any other samples.

Soil analytical results for pesticides and PCBs are presented in Tables 4 and 5, respectively.

5.3 Groundwater Chemistry

Data collected during the RI is sufficient to delineate the distribution of contaminants in groundwater at the Site. Groundwater sample analytical data was compared to NYSDEC Technical & Operational Series (TOGS) Ambient Water Quality Standards (AWQS). A summary table of data for chemical analyses performed on groundwater samples is included in Tables 6 through 10. Figure 5 shows the locations and concentrations of groundwater samples that exceed the AWQS.

5.3.1 Volatile Organic Compounds

PCE was detected in all three groundwater samples and blind duplicate sample MW-X-20171211 at concentrations between 18.9 micrograms per liter (µg/L) and 25.5 µg/L above its AWQS of 5 µg/L. No other VOCs were detected above their respective AWQS in the analyzed groundwater samples.

Low levels of other VOCs, including acetone (max 2.6 µg/L), chloroform (max 1.7 µg/L), and trichloroethylene (TCE) (max 0.77 µg/L), were detected in the groundwater samples at concentrations below their respective AWQS. No VOCs were detected in the aqueous trip blank samples. Several VOC concentrations were identified as "J" values, indicating estimated concentrations.

Groundwater analytical results for VOCs are presented in Table 6.

5.3.2 Semivolatile Organic Compounds

SVOCs were not detected above laboratory reporting limits in the groundwater samples.

Groundwater analytical results for SVOCs are presented in Table 7.

5.3.3 Metals

Up to 15 metals were detected in the three groundwater samples in the unfiltered (total) analysis. Iron was detected above its AWQS of 300 µg/L in MW-11-20171211 at a concentration of 644 µg/L. Sodium was detected above its AWQS of 20,000 µg/L in all three groundwater samples at concentrations ranging from 59,300 µg/L to 118,000 µg/L.

Up to 12 metals were detected in the groundwater samples in the filtered (dissolved) analysis. Metals concentrations in the filtered samples were mostly reduced when compared to those of the unfiltered analysis; however, sodium was still detected above its respective AWQS in all three samples at concentrations ranging from 57,100 µg/L to 114,000 µg/L.

Groundwater analytical results for metals are presented in Table 8.

5.3.4 Pesticides and PCBs

Pesticides and PCBs were not detected above laboratory detection limits in the groundwater samples.

Groundwater analytical results for pesticides and PCBs are presented in Tables 9 and 10, respectively.

5.4 Soil Vapor Chemistry

Data collected during the RI is sufficient to delineate the distribution of contaminants in soil vapor at the Site. A summary table of data for chemical analyses performed on soil vapor samples is included in Table 11. Figure 6 shows the locations and concentrations of VOCs

detections in soil vapor. A complete copy of the laboratory report for soil vapor samples is provided in Appendix E.

A review of the soil vapor sample analytical results identified 26 VOCs detected in the 10 soil vapor samples. VOCs associated with petroleum [including benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX), 1,2,4- and 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene, heptane, and n-hexane] were detected at concentrations between 2.9 micrograms per cubic meter ($\mu g/m^3$) and 315 $\mu g/m^3$. Chlorinated VOCs (including chloroform, methylene chloride, TCE, PCE, and trichlorofluoromethane) were detected at concentrations between 1.12 $\mu g/m^3$ and 277 $\mu g/m^3$. Other VOCs (including 2-butanone, acetone, and carbon disulfide) were detected at concentrations between 2.5 $\mu g/m^3$ and 118 $\mu g/m^3$. PCE was detected in all 10 soil vapor samples at concentrations ranging from 1.9 to 277 $\mu g/m^3$. TCE was detected in SV-1-20171129 SV-2-20171129, and SV-8-20171129 at concentrations of 10.2 $\mu g/m^3$, 8.06 $\mu g/m^3$, and 1.61 $\mu g/m^3$, respectively.

5.5 Prior Activity

Based on the elevated lead concentrations detected in soil samples, there is a potential for hazardous waste to be generated at the Site. Waste characterization soil sampling will be performed to confirm or deny the presence of hazardous waste soil prior to the start of construction.

There are no known impediments to remedial action at this Site.

5.6 Quality Assurance/Quality Control (QA/QC) Sampling

QA/QC procedures were used to provide performance information with regard to accuracy, precision, sensitivity, representation, completeness, and comparability associated with the sampling and analyses for this investigation. Field QA/QC procedures were used (1) to document that samples are representative of actual conditions at the Site and (2) to identify possible cross-contamination from field activities or sample transit. Laboratory QA/QC procedures and analyses were used to demonstrate whether analytical results have been biased either by interfering compounds in the sample matrix or by laboratory techniques that may have introduced systematic or random errors to the analytical process.

QA/QC samples were analyzed by Chemtech, an ELAP-certified laboratory. The third-party data validation was performed by L.A.B. Validation Corp. and reported in DUSRs for soil, soil vapor, and groundwater. DUSRs for soil, groundwater, and soil vapor samples are provided in Appendix F. QA/QC sampling consisted of the following:

<u>Soil</u>

- One blind duplicate [SB-X (0-2) 20171127];
- One MS/MSD sample [SB-12 (0-2) MS/MSD 20171127];
- One field blank (FB-1 20171128); and
- One aqueous trip blank sample (TB-20171127).

<u>Groundwater</u>

- One blind duplicate (MW-X-20171211);
- One MS/MSD sample (MW-1-MS/MSD-20171211);
- One field blank sample (FB-1-20171211); and
- One aqueous trip blank sample (TB-1-20171211).

QA/QC samples were submitted with the collected soil and groundwater samples. The field blanks, blind duplicates, and MS/MSD samples were analyzed for the same analyte list as the accompanying soil and groundwater samples. The trip blank samples were submitted for laboratory analysis for VOCs by EPA Method 8260 only.

Duplicate samples for soil had relative percent differences; however, soil samples are expected to have a greater variance due to variable contaminant properties in soil, particularly in non-homogenous material, which was identified in the soil borings.

Soil

- The soil DUSR identified additional qualifiers for specific compounds for specific samples. These qualifiers have been added to the data summary tables provided as Tables 4 through 8. The data sets were determined to be acceptable for use with the additional data qualifiers. The changes included the addition of a "J" qualifier indicating that the contaminant detections in the samples were considered estimated values. In few cases, a "U" qualifier was added, indicating that the analyte was analyzed for, but was not detected above the reported sample quantitation limit. In several cases, a "UJ" qualifier was added, indicating the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Additions of "JL" and "JL" qualifiers were also added to certain samples where the result was an estimated quantity that may be biased high or biased low, respectively. In cases of diluted analyses, the initial samples were qualified "R", indicating the data is unusable.
- The matrix spike analysis of sample SB-12(0-2)20171127 resulted in low antimony recovery (25%) in both the MS and MSD. As such, all antimony results Sample Delivery Group (SDG) 16610 have been qualified "R."
- Methylene chloride and acetone were detected in many of the field samples. Although the laboratory reported presence could not be negated due to contamination, the DUSR reported that the detections are potentially due to lab contamination.
- The initial calibration and %RSD (Percent Relative Standard Deviation) were within acceptable limits for all reported compounds except 1,4-dioxane in sample SB-1(0-2)20181128. Results for this compounds were qualified "UJ." Cyclohexane, 1,1,2,2-tetrachlroroethane, and 1,2,3-trichlorobenzene were also qualified "UJ" in sample FB-1-20171128.
- Samples SB-5(10-12)20171127 and SB-6(5-7)20171128 resulted in low internal response for all Internal Standard (IS) compounds. As such, methylene chloride was qualified "JL" and non-detects were qualified "UJ."
- Several soil samples were reanalyzed at a higher dilution ratio in cases where target analyte concentrations exceeded the instrument's linear calibration range. The value over range have been qualified "R" and the diluted samples have been qualified "D."

The DUSR concluded that the overall assessment of the data generated were of acceptable quality. Chemtech notated that their New Jersey Department of Environmental Protection (NJDEP) Certification status for manganese in soil was in the "applied" status at the time of sample analysis. Data was not qualified for manganese based on this deviation. Results for the remaining analyses are usable at the revised qualifiers.

Groundwater

- The groundwater DUSR identified additional qualifiers for specific compounds for specific samples. These qualifiers have been added to the data summary tables provided as Tables 9

and 10. The changes included the additions "JH" and "UJ", qualifiers to select compounds in various groundwater samples.

- The initial and continuing calibrations and %D (Percent Difference) were within acceptable limits (20%) for VOCs, except for 1,2,4,5-tetrachlorobenzene (43.4%), 2,4-dinitrophenol (33.6%), and hexachlorocyclopentadiene (34.6%). All samples have been qualified "UJ."
- Aqueous spike recoveries between 126% and 200% were qualified "JH" for chromium, iron, and nickel.

The groundwater DUSR indicated the data generated were of acceptable quality. All samples were analyzed undiluted. Results for the analysis are usable with the revised qualifiers.

Soil Vapor

- The groundwater DUSR identified additional qualifiers for specific compounds for specific samples. These qualifiers have been added to the data summary tables provided as Table 11. The changes included the additions "D", "UJ", "JL", qualifiers to select compounds in various soil vapor samples.
- Secondary diluted reanalysis was performed for acetone and/or toluene in cases where the raw concentrations exceeded the instrument's linear calibration range. Results for these compounds have been qualified "D."
- Analytes with higher internal standard responses, outside of the calibration range, were detected in several samples for up to 26 compounds. These results have been qualified "UJ" or "JL."

The soil vapor DUSR indicated the data generated were of acceptable quality and the data validator agreed with the raw data provided in the final laboratory report.

FIGURES

TABLES

APPENDIX A
PHASE I ESA

APPENDIX B
FIELD SAMPLING LOGS

APPENDIX C

INVESTIGATION DERIVED WASTE DISPOSAL MANIFEST

APPENDIX D

LABORATORY DATA DELIVERABLES FOR SOIL AND GROUNDWATER

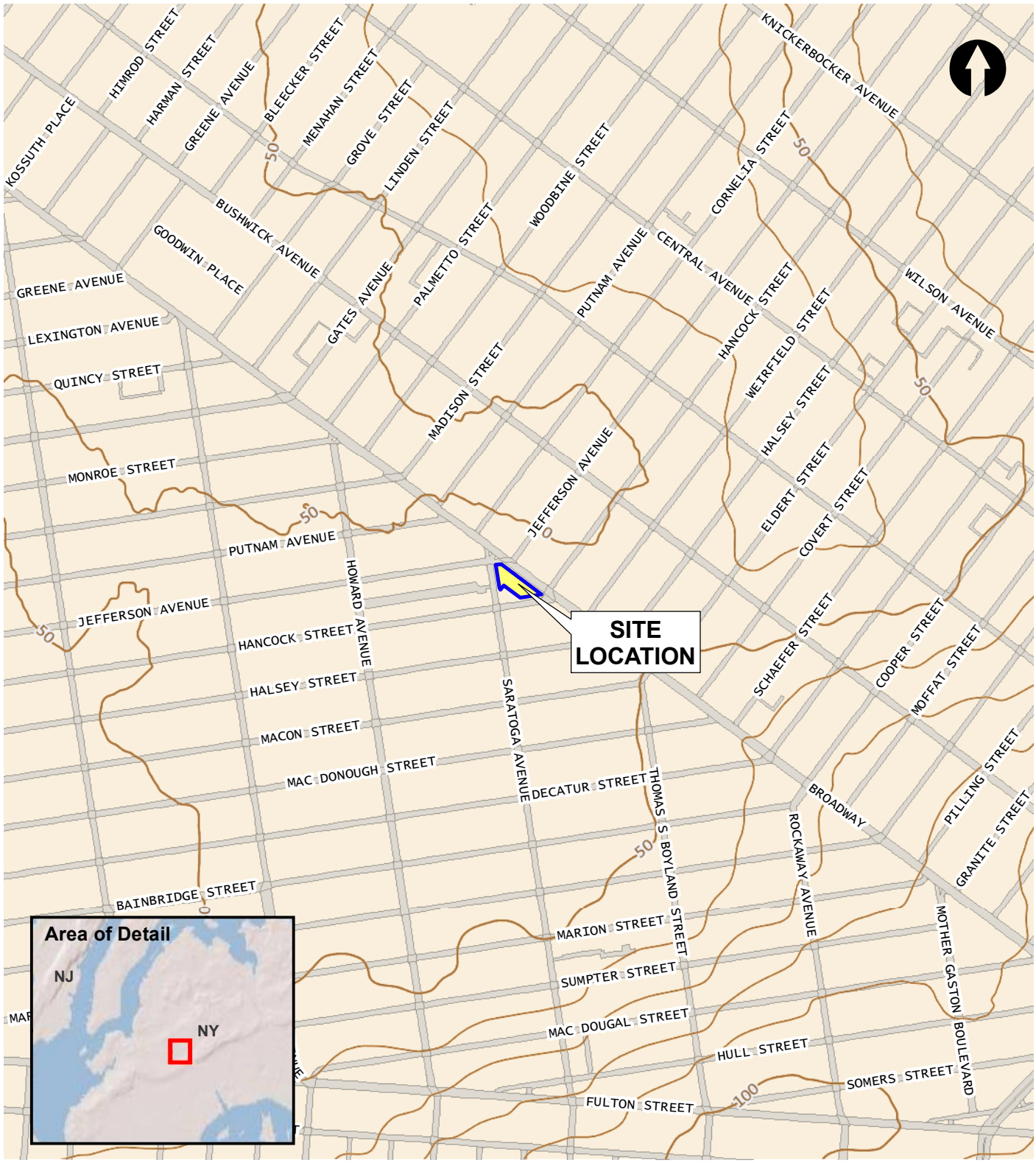
APPENDIX E

LABORATORY DATA DELIVERABLES FOR SOIL VAPOR

APPENDIX F

DUSRS FOR SOIL, GROUNDWATER, AND SOIL VAPOR SAMPLES

FIGURES



Map Source: USGS Topo base map service from The National Map

0 800 1,600

SCALE IN FEET

AKRF

440 Park Avenue South, New York, NY 10016

7 Saratoga Avenue and 1510-1524 Broadway

Brooklyn, New York

SITE LOCATION

DATE **1/10/2018**

PROJECT NO. **20568.03**

FIGURE **1**

Historical Dry Cleaner

Historical Watch and Jewelry Repair

Historical Printer

Historical Paints and Oils Store

Historical Manufacturing

Existing 2-Story Building

Existing Parking Lot

1 Story Building Encroachment from Lot 1

Historical Dress Manufacturer, Historical Cleaning and Dying

SARATOGA AVENUE

BROADWAY

HANCOCK STREET

Sidewalk

SB/MW-1 SV-1 SV-3 SB-3 SV-2 SB-2 SB/MW-4 SV-4 SB-6 SV-8 SB-8 SB-7 SV-7 SV-9 SB-9 SV-11 SB/MW-11 SV-10 SB-10 SB-12

6 11 12 **1489** 13 14 15 16 17 18 1

LEGEND

	PROJECT SITE BOUNDARY
11	LOT BOUNDARY AND TAX LOT NUMBER
1489	TAX BLOCK NUMBER
	BUILDING
X—X	FENCE
SB-7 ●	LOCATION OF SOIL BORING
SB/MW-1 ⊕	LOCATION OF SOIL BORING/MONITORING WELL
SV-2 ⊕	LOCATION OF SOIL VAPOR POINT

0 20 40 80

SCALE IN FEET

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database.

AKRF
440 Park Avenue South, New York, NY 10016

7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York

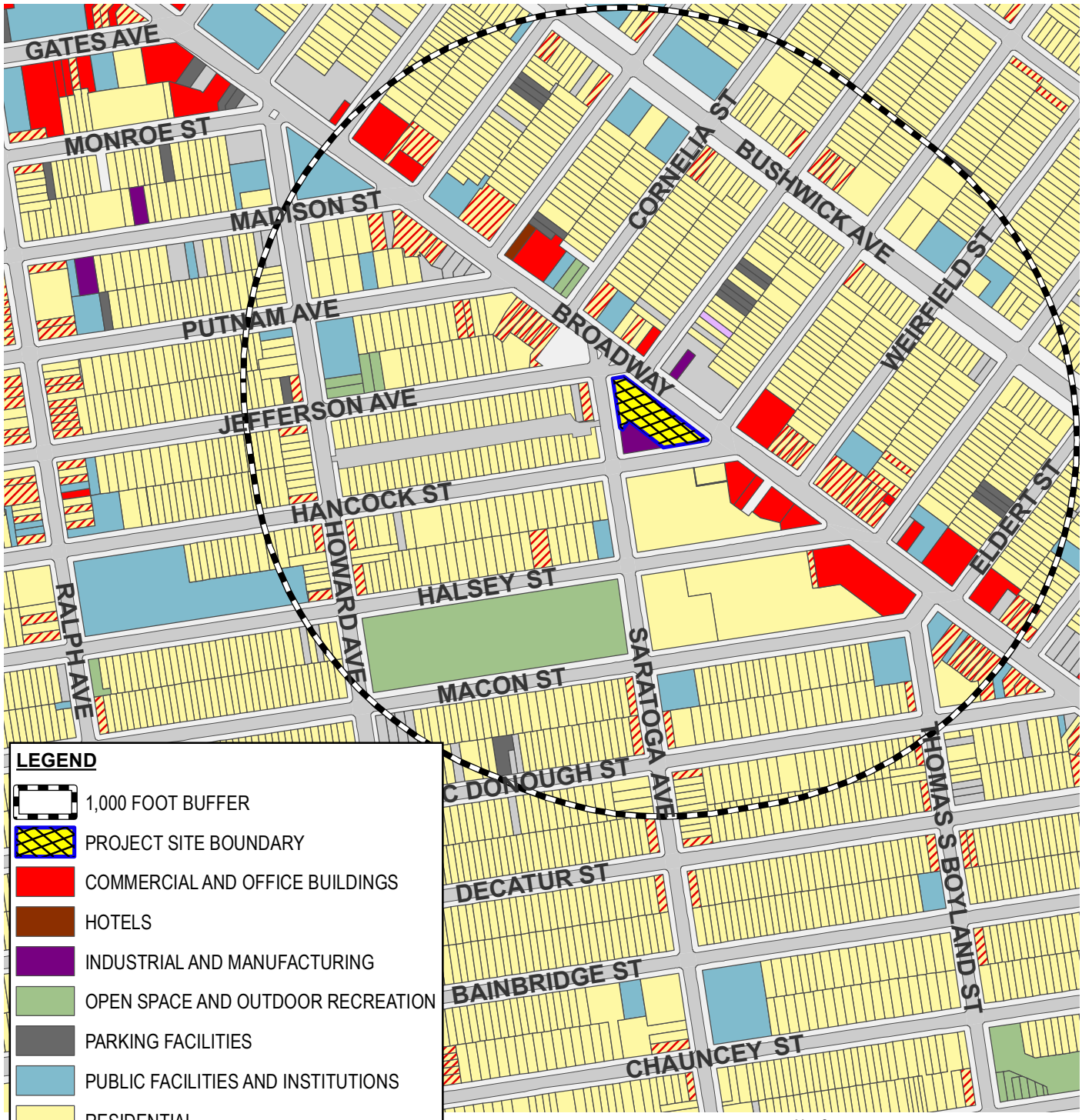
SITE PLAN AND SAMPLING LOCATIONS

DATE
4/23/2018

PROJECT NO.
20568.13

FIGURE
2

W:\Projects\20568.03 - 7 SARATOGA AND 1510 BROADWAY\Technical\Hazmat\Phase II\CAD\20568.03 Fig 2 Site Plan and Sample Locations.dwg last save: jszalus 4/23/2018 11:53 PM



Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database

0 400 800
SCALE IN FEET

AKRF
440 Park Avenue South, New York, NY 10016

7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York

SURROUNDING LAND USE

DATE
1/10/2018

PROJECT NO.
20568.03

FIGURE
3

Sample ID	NYSDEC	NYSDEC	SB-1(0-2)-20171128	SB-1(6-8)-20171128
Date Sampled	UUSCOs	RRSCOs	11/28/2017	11/28/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	NE	1.4
Benzo(A)Pyrene	1	1	NE	1.2
Benzo(B)Fluoranthene	1	1	1.1	1.3
Chrysene	1	3.9	NE	1.3
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.83	0.66
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	286	300
Mercury	0.18	0.81	NE	0.364
Selenium	3.9	180	5.82	4.55
Zinc	109	10,000	197	184

Sample ID	NYSDEC	NYSDEC	SB-2(0-2)-20171127	SB-2(10-12)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Selenium	3.9	180	5.88	6

Sample ID	NYSDEC	NYSDEC	SB-3(0-2)-20171127	SB-3(10-12)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	41.8 D	NE
Benzo(A)Pyrene	1	1	39.6 D	NE
Benzo(B)Fluoranthene	1	1	54.5 D	NE
Benzo(K)Fluoranthene	0.8	3.9	16	NE
Chrysene	1	3.9	39.6 D	NE
Dibenz(A,H)Anthracene	0.33	0.33	6.1	NE
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	18.5	0.57 J
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDT	0.0033	7.9	NE	0.01
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	90.7	110
Selenium	3.9	180	4.96	4.92

Sample ID	NYSDEC	NYSDEC	SB-4(0-2)-20171128	SB-4(10-12)-20171128
Date Sampled	UUSCOs	RRSCOs	11/28/2017	11/28/2017
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	89.9	NE
Selenium	3.9	180	6.14	8.39

Sample ID	NYSDEC	NYSDEC	SB-5(0-2)-20171127	SB-5(10-12)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	1.2	NE
Benzo(B)Fluoranthene	1	1	1.4	NE
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.52	NE
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDE	0.0033	8.9	0.004	NE
P,P'-DDT	0.0033	7.9	0.0074	NE
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	104	NE
Selenium	3.9	180	6.52	5.2
Zinc	109	10,000	210	NE

Sample ID	NYSDEC	NYSDEC	SB-6(0-2)-20171128	SB-6(5-7)-20171128
Date Sampled	UUSCOs	RRSCOs	11/28/2017	11/28/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(B)Fluoranthene	1	1	1.3	NE
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.59	NE
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDE	0.0033	8.9	0.0055	0.0203
P,P'-DDT	0.0033	7.9	0.0113	0.0373
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Barium	350	400	NE	542
Lead	63	400	184	317
Mercury	0.18	0.81	NE	1.83 D
Selenium	3.9	180	5.99	4.2
Zinc	109	10,000	192	342

Sample ID	NYSDEC	NYSDEC	SB-7(0-2)-20171127	SB-7(4-6)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	1.2 J	6.4 D
Benzo(A)Pyrene	1	1	1.1 J	5
Benzo(B)Fluoranthene	1	1	1.2 J	8.2 D
Benzo(K)Fluoranthene	0.8	3.9	NE	2
Chrysene	1	3.9	1.2 J	6.4 D
Dibenz(A,H)Anthracene	0.33	0.33	NE	0.81
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.78 J	3.7
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDD	0.0033	13	0.0111	NE
P,P'-DDE	0.0033	8.9	0.0164	NE
P,P'-DDT	0.0033	7.9	0.0608 D	NE
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	221	NE
Selenium	3.9	180	6.43	7.75
Zinc	109	10,000	124	NE

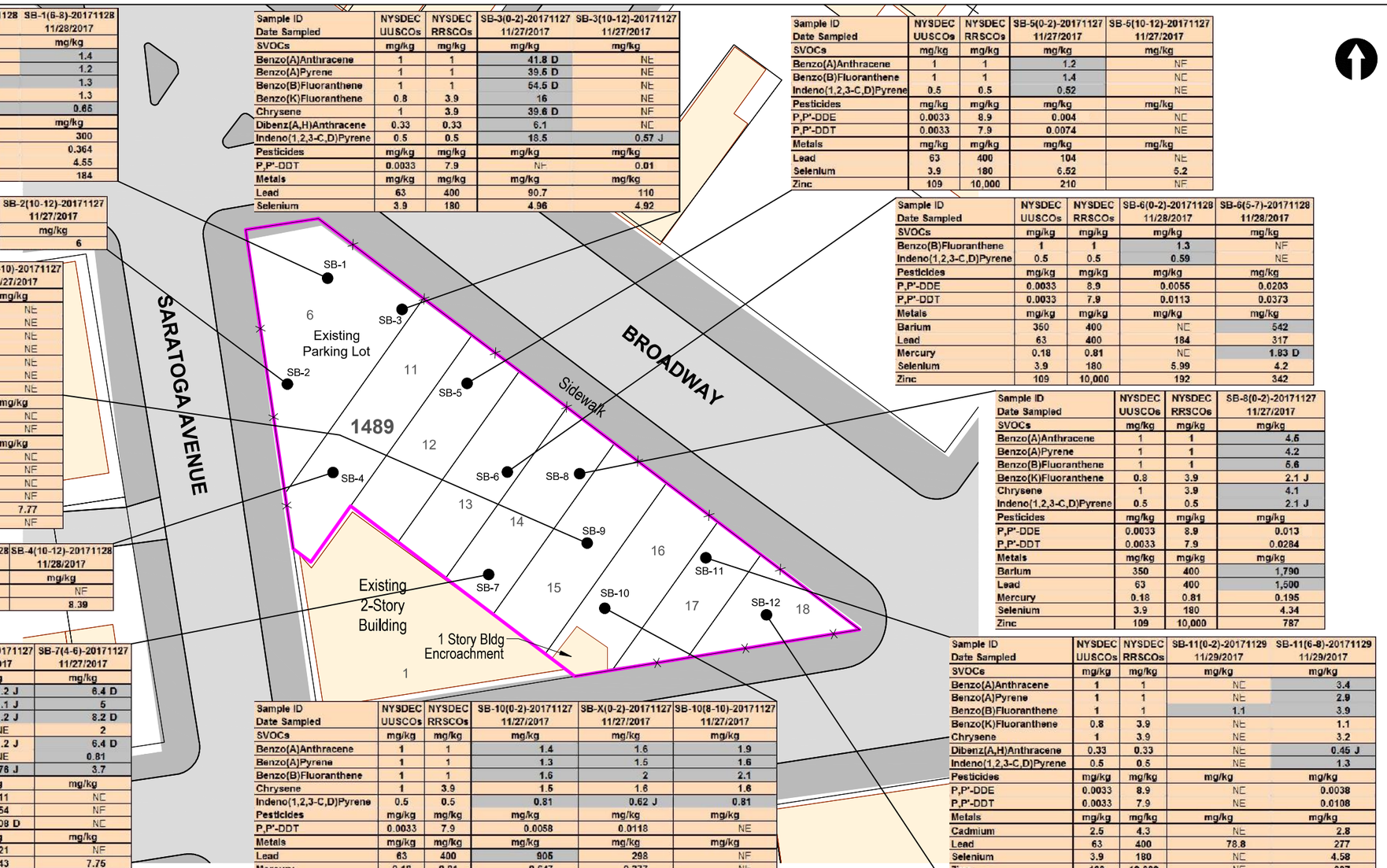
Sample ID	NYSDEC	NYSDEC	SB-8(0-2)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	4.6
Benzo(A)Pyrene	1	1	4.2
Benzo(B)Fluoranthene	1	1	5.6
Benzo(K)Fluoranthene	0.8	3.9	2.1 J
Chrysene	1	3.9	4.1
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	2.1 J
Pesticides	mg/kg	mg/kg	mg/kg
P,P'-DDE	0.0033	8.9	0.013
P,P'-DDT	0.0033	7.9	0.0284
Metals	mg/kg	mg/kg	mg/kg
Barium	350	400	1,790
Lead	63	400	1,500
Mercury	0.18	0.81	0.195
Selenium	3.9	180	4.34
Zinc	109	10,000	787

Sample ID	NYSDEC	NYSDEC	SB-9(0-2)-20171127	SB-9(8-10)-20171127
Date Sampled	UUSCO	RRSCOs	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	6.9 D	NE
Benzo(A)Pyrene	1	1	5.7	NE
Benzo(B)Fluoranthene	1	1	8.4 D	NE
Benzo(K)Fluoranthene	0.8	3.9	2.5	NE
Chrysene	1	3.9	6.6 D	NE
Dibenz(A,H)Anthracene	0.33	0.33	0.89	NE
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	3.6	NE
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDE	0.0033	8.9	0.0081	NE
P,P'-DDT	0.0033	7.9	0.0238	NE
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Barium	350	400	373	NE
Cadmium	2.5	4.3	8.38	NE
Lead	63	400	909	NE
Mercury	0.18	0.81	0.513	NE
Selenium	3.9	180	6.7	7.77
Zinc	109	10,000	1,680	NE

Sample ID	NYSDEC	NYSDEC	SB-10(0-2)-20171127	SB-X(0-2)-20171127	SB-10(8-10)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	1.4	1.6	1.9
Benzo(A)Pyrene	1	1	1.3	1.5	1.6
Benzo(B)Fluoranthene	1	1	1.6	2	2.1
Chrysene	1	3.9	1.5	1.6	1.6
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.81	0.62 J	0.81
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDT	0.0033	7.9	0.0058	0.0118	NE
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Lead	63	400	905	298	NE
Mercury	0.18	0.81	0.647	0.377	NE
Selenium	3.9	180	NE	NE	8.39
Zinc	109	10,000	203	147	NE

Sample ID	NYSDEC	NYSDEC	SB-11(0-2)-20171129	SB-11(6-8)-20171129
Date Sampled	UUSCOs	RRSCOs	11/29/2017	11/29/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	NE	3.4
Benzo(A)Pyrene	1	1	NE	2.9
Benzo(B)Fluoranthene	1	1	1.1	3.9
Benzo(K)Fluoranthene	0.8	3.9	NE	1.1
Chrysene	1	3.9	NE	3.2
Dibenz(A,H)Anthracene	0.33	0.33	NE	0.45 J
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	NE	1.3
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDE	0.0033	8.9	NE	0.0038
P,P'-DDT	0.0033	7.9	NE	0.0108
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Cadmium	2.5	4.3	NE	2.8
Lead	63	400	78.8	277
Selenium	3.9	180	NE	4.58
Zinc	109	10,000	NE	897

Sample ID	NYSDEC	NYSDEC	SB-12(0-2)-20171127	SB-12(10-12)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
SVOCs	mg/kg	mg/kg	mg/kg	mg/kg
Benzo(A)Anthracene	1	1	2	4.9 D
Benzo(A)Pyrene	1	1	1.8	4.1 D
Benzo(B)Fluoranthene	1	1	2.4	5.7 D
Benzo(K)Fluoranthene	0.8	3.9	NE	1.8
Chrysene	1	3.9	2.1	4.6 D
Dibenz(A,H)Anthracene	0.33	0.33	NE	0.59
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.99	2.1
Pesticides	mg/kg	mg/kg	mg/kg	mg/kg
P,P'-DDD	0.0033	13	NE	0.0065
P,P'-DDE	0.0033	8.9	0.0318 D	NE
P,P'-DDT	0.0033	7.9	0.0798 D	0.11 D
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Barium	350	400	NE	380
Lead	63	400	595	386
Mercury	0.18	0.81	0.404	NE
Selenium	3.9	180	6.89	NE
Zinc	109	10,000	363	526



SOIL

J : The reported concentration is an estimated value.

D : Indicates the reported value is from a diluted analysis.

NE : The analyte was not detected at a concentration exceeding UUSCOs or RRSCOs.

Sample ID	NYSDEC	NYSDEC	SB-2(0-2)-20171127	SB-2(10-12)-20171127
Date Sampled	UUSCOs	RRSCOs	11/27/2017	11/27/2017
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Selenium	3.9	180	5.88	6

Sample ID
Sample Date
Analyte/Compound
Concentration

Part 375 Soil Cleanup Objectives (SCOs):
SCOs listed in the New York State Department of Environmental Conservation (NYSDEC) Part 375 Regulations (6 NYCRR Part 375).

mg/kg : milligrams per kilogram = parts per million (ppm)

Exceedances of Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) are shown in bold font.
Exceedances of Part 375 Restricted Residential Soil Cleanup Objectives (RRSCOs) are highlighted in gray.

Sample SB-X(0-2)-20171127 is a blind duplicate of sample SB-10(0-2)-20171127.

0 25 50 100
SCALE IN FEET

LEGEND

- PROJECT SITE BOUNDARY
- SB-7 — LOCATION OF SOIL BORING
- 11 — LOT BOUNDARY AND TAX LOT NUMBER
- 1489 — TAX BLOCK NUMBER
- BUILDING
- FENCE

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database.

AKRF
440 Park Avenue South, New York, NY 10016

7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York

SOIL CONCENTRATIONS ABOVE NYSDEC SOIL CLEANUP OBJECTIVES

DATE
4/23/2018

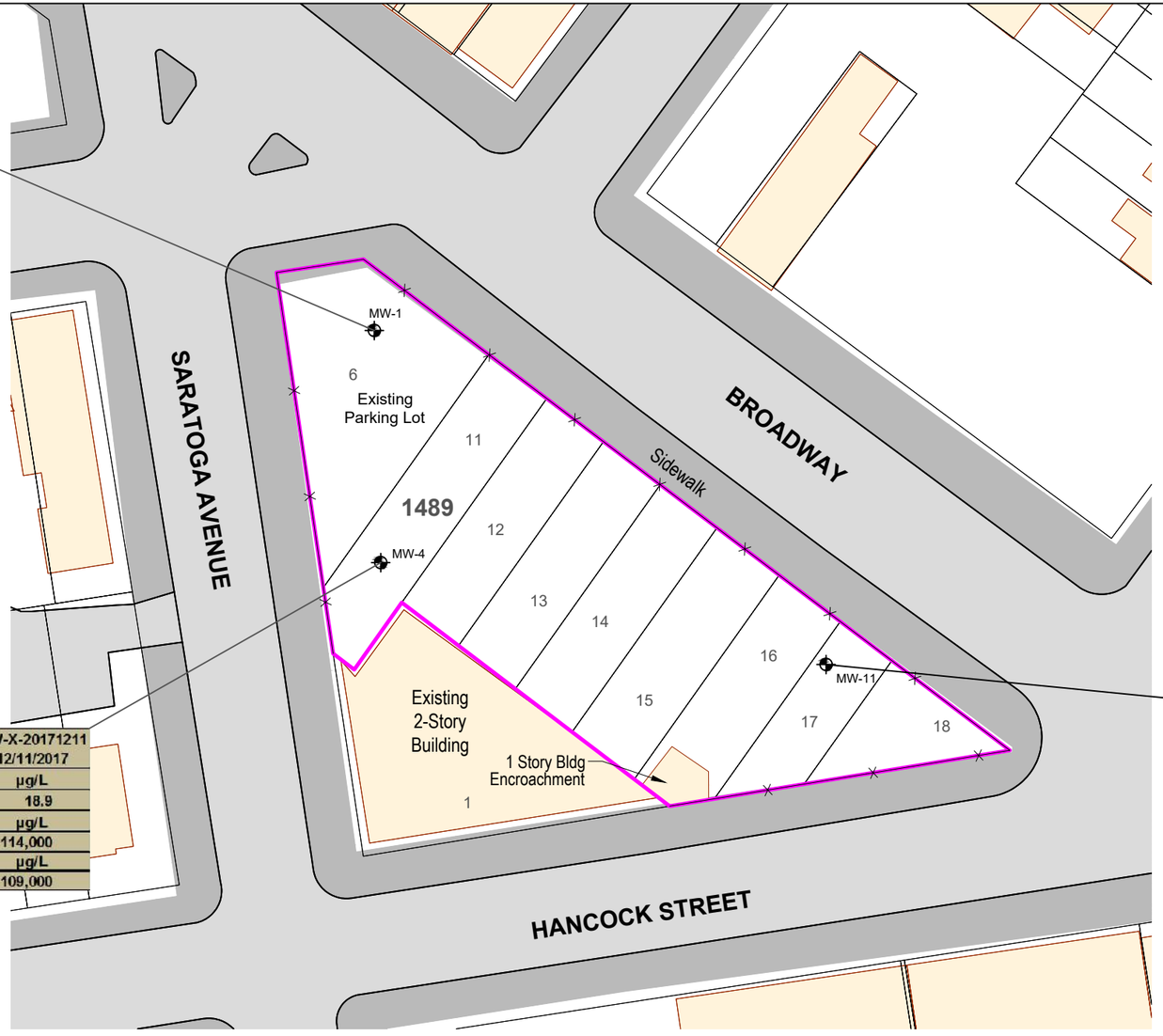
PROJECT NO.
20568.13

FIGURE
4

Sample ID Date Sampled	NYSDEC AWQS	MW-1-20171211 12/11/2017
VOCs	µg/L	µg/L
Tetrachloroethylene (PCE)	5	25.5
Total Metals	µg/L	µg/L
Sodium	20,000	75,500
Dissolved Metals	µg/L	µg/L
Sodium	20,000	78,000

Sample ID Date Sampled	NYSDEC AWQS	MW-4-20171211 12/11/2017	MW-X-20171211 12/11/2017
VOCs	µg/L	µg/L	µg/L
Tetrachloroethylene (PCE)	5	19.1	18.9
Total Metals	µg/L	µg/L	µg/L
Sodium	20,000	118,000	114,000
Dissolved Metals	µg/L	µg/L	µg/L
Sodium	20,000	114,000	109,000

Sample ID Date Sampled	NYSDEC AWQS	MW-11-20171211 12/11/2017
VOCs	µg/L	µg/L
Tetrachloroethylene (PCE	5	19.7
Total Metals	µg/L	µg/L
Iron	300	644
Sodium	20,000	59,300
Dissolved Metals	µg/L	µg/L
Sodium	20,000	57,100



LEGEND

GROUNDWATER

NYSDEC Class GA Ambient Water Quality Standard (AWQS)
New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) (1.1.1): Class GA AWQS.

µg/L : micrograms per Liter = parts per billion (ppb)

Exceedances of the AWQS are shown in bold font.
Sample MW-X-20171211 is a blind duplicate of sample MW-4-20171211.

- PROJECT SITE BOUNDARY
- 11 — LOT BOUNDARY AND TAX LOT NUMBER
- 1489 — TAX BLOCK NUMBER
- BUILDING
- FENCE
- MW-1 — LOCATION OF MONITORING WELL

0 25 50 100
SCALE IN FEET

Sample ID Date Sampled	NYSDEC AWQS	MW-11-20171211 12/11/2017
VOCs	µg/L	µg/L
Tetrachloroethylene (PCE	5	19.7
Total Metals	µg/L	µg/L
Iron	300	644
Sodium	20,000	59,300
Dissolved Metals	µg/L	µg/L
Sodium	20,000	57,100

Sample ID
Sample Date
Compound/Analyte
Concentration

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database.

GROUNDWATER CONCENTRATIONS ABOVE NYSDEC AWQS

7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York

AKRF
440 Park Avenue South, New York, NY 10016

DATE
4/23/2018

PROJECT NO.
20568.13

FIGURE
5

Sample ID	SV-1-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	10.8
1,3,5-Trimethylbenzene (Mesitylene)	3.1
2,2,4-Trimethylpentane	1.54 J
4-Ethyltoluene	6.88
Acetone	78.9 DQ
Benzene	6.39
Carbon Disulfide	2.37
Chloroform	1.12 J
Dichlorodifluoromethane	2.08 J
Ethylbenzene	15.2
M,P-Xylenes	58.2
Methyl Ethyl Ketone (2-Butanone)	9.44
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	1.19 J
N-Heptane	9.02
N-Hexane	10.2
O-Xylene (1,2-Dimethylbenzene)	14.8
Styrene	1.41 J
Tert-Butyl Alcohol	10.9 Q
Tetrachloroethylene (PCE)	277 D
Toluene	51.2 D
Trichloroethylene (TCE)	10.2
Trichlorofluoromethane	2.81

Sample ID	SV-2-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	12.3
1,3,5-Trimethylbenzene (Mesitylene)	3.88
2,2,4-Trimethylpentane	4.2
4-Ethyltoluene	8.85
Acetone	90.3 DQ
Benzene	16.6
Carbon Disulfide	2.9
Carbon Tetrachloride	25.2
Chloroform	3.66
Ethylbenzene	20.4
M,P-Xylenes	76.4
Methyl Ethyl Ketone (2-Butanone)	19.2
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	3.11
Methylene Chloride	10.4
N-Heptane	10.7
N-Hexane	25.7
O-Xylene (1,2-Dimethylbenzene)	20.4
Tert-Butyl Alcohol	6.97
Tetrachloroethylene (PCE)	43.4
Toluene	69 D
Trichloroethylene (TCE)	8.06
Trichlorofluoromethane	1.63 J

Sample ID	SV-3-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	11.8
1,3,5-Trimethylbenzene (Mesitylene)	3.44 J
2,2,4-Trimethylpentane	2.15 J
4-Ethyltoluene	6.88
Acetone	86.5 DQ
Benzene	7.99
Carbon Disulfide	5.61
Dichlorodifluoromethane	1.29 J
Ethylbenzene	13.9
M,P-Xylenes	56.5
Methyl Ethyl Ketone (2-Butanone)	10
Methylene Chloride	22.2
N-Heptane	7.38
N-Hexane	16.9
O-Xylene (1,2-Dimethylbenzene)	14.3
Tert-Butyl Alcohol	21.5
Tetrachloroethylene (PCE)	27.1
Toluene	55.2

Sample ID	SV-4-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	15.2
1,3,5-Trimethylbenzene (Mesitylene)	4.92
2,2,4-Trimethylpentane	59.8
4-Ethyltoluene	9.34
Acetone	76.2 DQ
Benzene	7.35
Carbon Disulfide	3.43
Chloroform	2.15 J
Ethylbenzene	19.1
M,P-Xylenes	78.2
Methyl Ethyl Ketone (2-Butanone)	12.1
N-Heptane	9.43
N-Hexane	17.3
O-Xylene (1,2-Dimethylbenzene)	21.3
Tert-Butyl Alcohol	7.88
Tert-Butyl Methyl Ether	1.51 J
Tetrachloroethylene (PCE)	14.9
Toluene	62.9
Trichlorofluoromethane	1.35 J

Sample ID	SV-5-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	14.8
1,3,5-Trimethylbenzene (Mesitylene)	4.13 J
2,2,4-Trimethylpentane	1.59 J
4-Ethyltoluene	8.36
Acetone	59.6 DQ
Benzene	4.79
Ethylbenzene	12.2
M,P-Xylenes	52.1
Methyl Ethyl Ketone (2-Butanone)	15.8
Methylene Chloride	21.2
N-Heptane	5.74
N-Hexane	15.2
O-Xylene (1,2-Dimethylbenzene)	14.3
Styrene	1.36 J
Tert-Butyl Alcohol	19.7
Tetrachloroethylene (PCE)	2.58
Toluene	40.3

Sample ID	SV-7-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	26.1
1,3,5-Trimethylbenzene (Mesitylene)	8.36
2,2,4-Trimethylpentane	3.38 J
4-Ethyltoluene	16.2
Acetone	118 DQ
Benzene	9.26
Carbon Disulfide	18.1
Ethylbenzene	28.7
M,P-Xylenes	109
Methyl Ethyl Ketone (2-Butanone)	38
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.38 J
Methylene Chloride	13.9
N-Heptane	35.6
N-Hexane	79.3
O-Xylene (1,2-Dimethylbenzene)	31.7
Styrene	2.04 J
Tert-Butyl Alcohol	8.49
Tetrachloroethylene (PCE)	3.8
Toluene	89.3
Trichlorofluoromethane	6.18

Sample ID	SV-8-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	35.9
1,3,5-Trimethylbenzene (Mesitylene)	11.3
2,2,4-Trimethylpentane	30.4
4-Ethyltoluene	19.2
Acetone	53 DQ
Benzene	13.4
Dichlorodifluoromethane	1.68 J
Ethylbenzene	30.8
M,P-Xylenes	117
Methyl Ethyl Ketone (2-Butanone)	3.54
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	9.02
Methylene Chloride	7.64
N-Heptane	23.4
N-Hexane	22.2
O-Xylene (1,2-Dimethylbenzene)	35.6
Tetrachloroethylene (PCE)	1.9
Toluene	111 D
Trichloroethylene (TCE)	1.61
Trichlorofluoromethane	13.5

Sample ID	SV-10-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	27.5
1,3,5-Trimethylbenzene (Mesitylene)	8.36 J
2,2,4-Trimethylpentane	2.06 J
Acetone	89.6 DQ
Benzene	5.11 J
Ethylbenzene	19.1
M,P-Xylenes	79.5
Methyl Ethyl Ketone (2-Butanone)	8.85
N-Heptane	9.43
N-Hexane	13.4
O-Xylene (1,2-Dimethylbenzene)	19.1
Tetrachloroethylene (PCE)	10.8
Toluene	65.3
Trichlorofluoromethane	59.6

Sample ID	SV-11-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	25.6
1,3,5-Trimethylbenzene (Mesitylene)	12.8
2,2,4-Trimethylpentane	35
4-Ethyltoluene	17.7
Acetone	79.1 DQ
Benzene	30.7
Dichlorodifluoromethane	7.42 J
Ethylbenzene	84.7
M,P-Xylenes	273
Methyl Ethyl Ketone (2-Butanone)	8.85
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	11.9
N-Heptane	29.9
N-Hexane	15.2
O-Xylene (1,2-Dimethylbenzene)	85.1
Tetrachloroethylene (PCE)	8.14
Toluene	315 D
Trichlorofluoromethane	16.9

Sample ID	SV-9-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	20.6
1,3,5-Trimethylbenzene (Mesitylene)	6.88
2,2,4-Trimethylpentane	2.9 J
4-Ethyltoluene	11.8
Acetone	105 DQ
Benzene	7.35
Carbon Disulfide	38
Dichlorodifluoromethane	3.66 J
Ethylbenzene	20
M,P-Xylenes	81.7
Methyl Ethyl Ketone (2-Butanone)	29.2
N-Heptane	11.5
N-Hexane	15.9
O-Xylene (1,2-Dimethylbenzene)	22.6
Styrene	1.87 J
Tert-Butyl Alcohol	7.58
Tetrachloroethylene (PCE)	4.88
Toluene	62.6
Trichlorofluoromethane	69.1

SARATOGA AVENUE

BROADWAY

HANCOCK STREET

Sidewalk

Existing Parking Lot

Existing 2-Story Building

1 Story Bldg Encroachment

1489

6 11 12 13 14 15 16 17 18 1

SV-1 SV-2 SV-3 SV-4 SV-5 SV-7 SV-8 SV-9 SV-10 SV-11

0 25 50 100

SCALE IN FEET

LEGEND

PROJECT SITE BOUNDARY

SV-9 LOCATION OF SOIL VAPOR POINT

11 LOT BOUNDARY AND TAX LOT NUMBER

1489 TAX BLOCK NUMBER

BUILDING

FENCE

Sample ID	SV-3-20171129
Date Sampled	11/29/2017
VOCs	µg/m³
1,2,4-Trimethylbenzene	11.8

Sample ID — Sample Date — Analyte/Compound — Concentration

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database.

SOIL VAPOR

J : The result reported concentration is an estimated value.

D : Indicates the reported value is from a diluted analysis.

Q : Indicates the Lab Control Sample (LCS) did not meet the control limits requirements.

NS : A standard has not been established for the analyte.

µg/m³ : micrograms per cubic meter

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7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York

SOIL VAPOR CONCENTRATIONS

DATE
4/23/2018

PROJECT NO.
20568.13

FIGURE
6

TABLES

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-1(0-2)-20171128 11/28/2017 1 mg/kg	SB-1(6-8)-20171128 11/28/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0057 U	0.0031 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0057 U	0.0031 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0057 U	0.0031 U
1,1,2-Trichloroethane	NS	NS	0.0057 U	0.0031 U
1,1-Dichloroethane	0.27	26	0.0057 U	0.0031 U
1,1-Dichloroethene	0.33	100	0.0057 U	0.0031 U
1,2,3-Trichlorobenzene	NS	NS	0.0057 U	0.0031 U
1,2,4-Trichlorobenzene	NS	NS	0.0057 U	0.0031 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.0057 U	0.0031 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0057 U	0.0031 U
1,2-Dichlorobenzene	1.1	100	0.0057 U	0.0031 U
1,2-Dichloroethane	0.02	3.1	0.0057 U	0.0031 U
1,2-Dichloropropane	NS	NS	0.0057 U	0.0031 U
1,3-Dichlorobenzene	2.4	49	0.0057 U	0.0031 U
1,4-Dichlorobenzene	1.8	13	0.0057 U	0.0031 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.11 UJ	0.0629 U
2-Hexanone	NS	NS	0.0284 U	0.0157 U
Acetone	0.05	100	0.0284 U	0.0126 J
Benzene	0.06	4.8	0.0057 U	0.0031 U
Bromochloromethane	NS	NS	0.0057 U	0.0031 U
Bromodichloromethane	NS	NS	0.0057 U	0.0031 U
Bromoform	NS	NS	0.0057 U	0.0031 U
Bromomethane	NS	NS	0.0057 U	0.0031 U
Carbon Disulfide	NS	NS	0.0057 U	0.0031 U
Carbon Tetrachloride	0.76	2.4	0.0057 U	0.0031 U
Chlorobenzene	1.1	100	0.0057 U	0.0031 U
Chloroethane	NS	NS	0.0057 U	0.0031 U
Chloroform	0.37	49	0.0057 U	0.00081 J
Chloromethane	NS	NS	0.0057 U	0.0031 U
Cis-1,2-Dichloroethylene	0.25	100	0.0057 U	0.0031 U
Cis-1,3-Dichloropropene	NS	NS	0.0057 U	0.0031 U
Cyclohexane	NS	NS	0.0057 U	0.0031 U
Dibromochloromethane	NS	NS	0.0057 U	0.0031 U
Dichlorodifluoromethane	NS	NS	0.0057 U	0.0031 U
Ethylbenzene	1	41	0.0057 U	0.0031 U
Isopropylbenzene (Cumene)	NS	NS	0.0057 U	0.0031 U
M,P-Xylenes	NS	NS	0.0113 U	0.0063 U
Methyl Acetate	NS	NS	0.0057 U	0.0031 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0284 U	0.0157 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0284 U	0.0157 U
Methylcyclohexane	NS	NS	0.0057 U	0.0031 U
Methylene Chloride	0.05	100	0.0022 J	0.0032
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0057 U	0.0031 U
Styrene	NS	NS	0.0057 U	0.0031 U
Tert-Butyl Methyl Ether	0.93	100	0.0057 U	0.0031 U
Tetrachloroethylene (PCE)	1.3	19	0.0057 U	0.005
Toluene	0.7	100	0.0057 U	0.0031 U
Trans-1,2-Dichloroethene	0.19	100	0.0057 U	0.0031 U
Trans-1,3-Dichloropropene	NS	NS	0.0057 U	0.0031 U
Trichloroethylene (TCE)	0.47	21	0.0057 U	0.0031 U
Trichlorofluoromethane	NS	NS	0.0057 U	0.0031 U
Vinyl Chloride	0.02	0.9	0.0057 U	0.0031 U
Xylenes, Total	0.26	100	0.0170 U	0.0094 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-2(0-2)-20171127 11/27/2017 1 mg/kg	SB-2(10-12)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0028 U	0.0025 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0028 U	0.0025 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0028 U	0.0025 U
1,1,2-Trichloroethane	NS	NS	0.0028 U	0.0025 U
1,1-Dichloroethane	0.27	26	0.0028 U	0.0025 U
1,1-Dichloroethene	0.33	100	0.0028 U	0.0025 U
1,2,3-Trichlorobenzene	NS	NS	0.0028 U	0.0025 U
1,2,4-Trichlorobenzene	NS	NS	0.0028 U	0.0025 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.0028 U	0.0025 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0028 U	0.0025 U
1,2-Dichlorobenzene	1.1	100	0.0028 U	0.0025 U
1,2-Dichloroethane	0.02	3.1	0.0028 U	0.0025 U
1,2-Dichloropropane	NS	NS	0.0028 U	0.0025 U
1,3-Dichlorobenzene	2.4	49	0.0028 U	0.0025 U
1,4-Dichlorobenzene	1.8	13	0.0028 U	0.0025 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.0552 U	0.0508 U
2-Hexanone	NS	NS	0.0138 U	0.0127 U
Acetone	0.05	100	0.0115 J	0.0238 J
Benzene	0.06	4.8	0.0028 U	0.0025 U
Bromochloromethane	NS	NS	0.0028 U	0.0025 U
Bromodichloromethane	NS	NS	0.0028 U	0.0025 U
Bromoform	NS	NS	0.0028 U	0.0025 U
Bromomethane	NS	NS	0.0028 U	0.0025 U
Carbon Disulfide	NS	NS	0.0028 U	0.0025 U
Carbon Tetrachloride	0.76	2.4	0.0028 U	0.0025 U
Chlorobenzene	1.1	100	0.0028 U	0.0025 U
Chloroethane	NS	NS	0.0028 U	0.0025 U
Chloroform	0.37	49	0.00064 J	0.00059 J
Chloromethane	NS	NS	0.0028 U	0.0025 U
Cis-1,2-Dichloroethylene	0.25	100	0.0028 U	0.0025 U
Cis-1,3-Dichloropropene	NS	NS	0.0028 U	0.0025 U
Cyclohexane	NS	NS	0.0028 U	0.0025 U
Dibromochloromethane	NS	NS	0.0028 U	0.0025 U
Dichlorodifluoromethane	NS	NS	0.0028 U	0.0025 U
Ethylbenzene	1	41	0.0028 U	0.00053 J
Isopropylbenzene (Cumene)	NS	NS	0.0028 U	0.0025 U
M,P-Xylenes	NS	NS	0.0055 U	0.0023 J
Methyl Acetate	NS	NS	0.0028 U	0.0025 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0138 U	0.0127 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0138 U	0.0127 U
Methylcyclohexane	NS	NS	0.0028 U	0.0025 U
Methylene Chloride	0.05	100	0.003	0.0031 J
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0028 U	0.00075 J
Styrene	NS	NS	0.0028 U	0.0025 U
Tert-Butyl Methyl Ether	0.93	100	0.0028 U	0.0025 U
Tetrachloroethylene (PCE)	1.3	19	0.0028 U	0.0025 U
Toluene	0.7	100	0.0028 U	0.0025 U
Trans-1,2-Dichloroethene	0.19	100	0.0028 U	0.0025 U
Trans-1,3-Dichloropropene	NS	NS	0.0028 U	0.0025 U
Trichloroethylene (TCE)	0.47	21	0.0028 U	0.0025 U
Trichlorofluoromethane	NS	NS	0.0028 U	0.0025 U
Vinyl Chloride	0.02	0.9	0.0028 U	0.0025 U
Xylenes, Total	0.26	100	0.0083 U	0.0031 J

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-3(0-2)-20171127 11/27/2017 1 mg/kg	SB-3(10-12)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0024 U	0.0027 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0024 UJ	0.0027 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0024 U	0.0027 U
1,1,2-Trichloroethane	NS	NS	0.0024 U	0.0027 U
1,1-Dichloroethane	0.27	26	0.0024 U	0.0027 U
1,1-Dichloroethene	0.33	100	0.0024 U	0.0027 U
1,2,3-Trichlorobenzene	NS	NS	0.0024 U	0.0027 UJ
1,2,4-Trichlorobenzene	NS	NS	0.0024 UJ	0.0027 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0024 U	0.0027 UJ
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0024 U	0.0027 U
1,2-Dichlorobenzene	1.1	100	0.0024 UJ	0.0027 UJ
1,2-Dichloroethane	0.02	3.1	0.0024 U	0.0027 U
1,2-Dichloropropane	NS	NS	0.0024 U	0.0027 U
1,3-Dichlorobenzene	2.4	49	0.0024 UJ	0.0027 UJ
1,4-Dichlorobenzene	1.8	13	0.0024 UJ	0.0027 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.0489 U	0.0547 U
2-Hexanone	NS	NS	0.0122 U	0.0137 U
Acetone	0.05	100	0.0122 U	0.0177
Benzene	0.06	4.8	0.0024 U	0.0027 U
Bromochloromethane	NS	NS	0.0024 U	0.0027 U
Bromodichloromethane	NS	NS	0.0024 U	0.0027 U
Bromoform	NS	NS	0.0024 U	0.0027 U
Bromomethane	NS	NS	0.0024 U	0.0027 U
Carbon Disulfide	NS	NS	0.0024 U	0.0027 U
Carbon Tetrachloride	0.76	2.4	0.0024 U	0.0027 U
Chlorobenzene	1.1	100	0.0024 U	0.0027 U
Chloroethane	NS	NS	0.0024 U	0.0027 U
Chloroform	0.37	49	0.00069 J	0.0008 J
Chloromethane	NS	NS	0.0024 U	0.0027 U
Cis-1,2-Dichloroethylene	0.25	100	0.0024 U	0.0027 U
Cis-1,3-Dichloropropene	NS	NS	0.0024 U	0.0027 U
Cyclohexane	NS	NS	0.0024 U	0.0027 U
Dibromochloromethane	NS	NS	0.0024 U	0.0027 U
Dichlorodifluoromethane	NS	NS	0.0024 U	0.0027 U
Ethylbenzene	1	41	0.0024 U	0.0027 U
Isopropylbenzene (Cumene)	NS	NS	0.0024 UJ	0.0027 U
M,P-Xylenes	NS	NS	0.0017 J	0.0055 U
Methyl Acetate	NS	NS	0.0024 U	0.0027 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0122 U	0.0137 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0122 U	0.0137 U
Methylcyclohexane	NS	NS	0.0024 U	0.0027 U
Methylene Chloride	0.05	100	0.0024 U	0.0039
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.00062 J	0.0027 U
Styrene	NS	NS	0.0024 U	0.0027 U
Tert-Butyl Methyl Ether	0.93	100	0.0024 U	0.0027 U
Tetrachloroethylene (PCE)	1.3	19	0.0024 U	0.0027 U
Toluene	0.7	100	0.0024 U	0.0027 U
Trans-1,2-Dichloroethene	0.19	100	0.0024 U	0.0027 U
Trans-1,3-Dichloropropene	NS	NS	0.0024 U	0.0027 U
Trichloroethylene (TCE)	0.47	21	0.0024 U	0.0027 U
Trichlorofluoromethane	NS	NS	0.0006 J	0.0027 U
Vinyl Chloride	0.02	0.9	0.0024 U	0.0027 U
Xylenes, Total	0.26	100	0.0023 J	0.0082 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-4(0-2)-20171128 11/28/2017 1 mg/kg	SB-4(10-12)-20171128 11/28/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0026 U	0.0023 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0026 UJ	0.0023 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0026 U	0.0023 U
1,1,2-Trichloroethane	NS	NS	0.0026 U	0.0023 U
1,1-Dichloroethane	0.27	26	0.0026 U	0.0023 U
1,1-Dichloroethene	0.33	100	0.0026 U	0.0023 U
1,2,3-Trichlorobenzene	NS	NS	0.0026 U	0.0023 U
1,2,4-Trichlorobenzene	NS	NS	0.0026 UJ	0.0023 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.0026 U	0.0023 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0026 U	0.0023 U
1,2-Dichlorobenzene	1.1	100	0.0026 UJ	0.0023 U
1,2-Dichloroethane	0.02	3.1	0.0026 U	0.0023 U
1,2-Dichloropropane	NS	NS	0.0026 U	0.0023 U
1,3-Dichlorobenzene	2.4	49	0.0026 UJ	0.0023 U
1,4-Dichlorobenzene	1.8	13	0.0026 UJ	0.0023 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.052 U	0.0469 U
2-Hexanone	NS	NS	0.013 U	0.0117 U
Acetone	0.05	100	0.013 U	0.0117 U
Benzene	0.06	4.8	0.0026 U	0.0023 U
Bromochloromethane	NS	NS	0.0026 U	0.0023 U
Bromodichloromethane	NS	NS	0.0026 U	0.0023 U
Bromoform	NS	NS	0.0026 U	0.0023 U
Bromomethane	NS	NS	0.0026 U	0.0023 U
Carbon Disulfide	NS	NS	0.0026 U	0.0023 U
Carbon Tetrachloride	0.76	2.4	0.0026 U	0.0023 U
Chlorobenzene	1.1	100	0.0026 U	0.0023 U
Chloroethane	NS	NS	0.0026 U	0.0023 U
Chloroform	0.37	49	0.0026 U	0.00048 J
Chloromethane	NS	NS	0.0026 U	0.0023 U
Cis-1,2-Dichloroethylene	0.25	100	0.0026 U	0.0023 U
Cis-1,3-Dichloropropene	NS	NS	0.0026 U	0.0023 U
Cyclohexane	NS	NS	0.0026 U	0.0023 U
Dibromochloromethane	NS	NS	0.0026 U	0.0023 U
Dichlorodifluoromethane	NS	NS	0.0026 U	0.0023 U
Ethylbenzene	1	41	0.0026 U	0.0023 U
Isopropylbenzene (Cumene)	NS	NS	0.0026 UJ	0.0023 U
M,P-Xylenes	NS	NS	0.0052 U	0.0047 U
Methyl Acetate	NS	NS	0.0026 U	0.0023 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.013 U	0.0117 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.013 U	0.0117 U
Methylcyclohexane	NS	NS	0.0026 U	0.0023 U
Methylene Chloride	0.05	100	0.002 J	0.0028
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0026 U	0.0023 U
Styrene	NS	NS	0.0026 U	0.0023 U
Tert-Butyl Methyl Ether	0.93	100	0.0026 U	0.0023 U
Tetrachloroethylene (PCE)	1.3	19	0.0026 U	0.0023 U
Toluene	0.7	100	0.0026 U	0.0023 U
Trans-1,2-Dichloroethene	0.19	100	0.0026 U	0.0023 U
Trans-1,3-Dichloropropene	NS	NS	0.0026 U	0.0023 U
Trichloroethylene (TCE)	0.47	21	0.0026 U	0.0023 U
Trichlorofluoromethane	NS	NS	0.0026 U	0.0023 U
Vinyl Chloride	0.02	0.9	0.0026 U	0.0023 U
Xylenes, Total	0.26	100	0.0078 U	0.0070 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-5(0-2)-20171127 11/27/2017 1 mg/kg	SB-5(10-12)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0033 U	0.0037 UJ
1,1,2,2-Tetrachloroethane	NS	NS	0.0033 UJ	0.0037 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0033 U	0.0037 UJ
1,1,2-Trichloroethane	NS	NS	0.0033 U	0.0037 UJ
1,1-Dichloroethane	0.27	26	0.0033 U	0.0037 UJ
1,1-Dichloroethene	0.33	100	0.0033 U	0.0037 UJ
1,2,3-Trichlorobenzene	NS	NS	0.0033 UJ	0.0037 UJ
1,2,4-Trichlorobenzene	NS	NS	0.0033 UJ	0.0037 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0033 UJ	0.0037 UJ
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0033 U	0.0037 UJ
1,2-Dichlorobenzene	1.1	100	0.0033 UJ	0.0037 UJ
1,2-Dichloroethane	0.02	3.1	0.0033 U	0.0037 UJ
1,2-Dichloropropane	NS	NS	0.0033 U	0.0037 UJ
1,3-Dichlorobenzene	2.4	49	0.0033 UJ	0.0037 UJ
1,4-Dichlorobenzene	1.8	13	0.0033 UJ	0.0037 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.0656 U	0.0749 UJ
2-Hexanone	NS	NS	0.0164 U	0.0187 UJ
Acetone	0.05	100	0.0164 U	0.0187 UJ
Benzene	0.06	4.8	0.0033 U	0.0037 UJ
Bromochloromethane	NS	NS	0.0033 U	0.0037 UJ
Bromodichloromethane	NS	NS	0.0033 U	0.0037 UJ
Bromoform	NS	NS	0.0033 U	0.0037 UJ
Bromomethane	NS	NS	0.0033 U	0.0037 UJ
Carbon Disulfide	NS	NS	0.0033 U	0.0037 UJ
Carbon Tetrachloride	0.76	2.4	0.0033 U	0.0037 UJ
Chlorobenzene	1.1	100	0.0033 U	0.0037 UJ
Chloroethane	NS	NS	0.0033 U	0.0037 UJ
Chloroform	0.37	49	0.0033 U	0.0037 UJ
Chloromethane	NS	NS	0.0033 U	0.0037 UJ
Cis-1,2-Dichloroethylene	0.25	100	0.0033 U	0.0037 UJ
Cis-1,3-Dichloropropene	NS	NS	0.0033 U	0.0037 UJ
Cyclohexane	NS	NS	0.0033 U	0.0037 UJ
Dibromochloromethane	NS	NS	0.0033 U	0.0037 UJ
Dichlorodifluoromethane	NS	NS	0.0033 U	0.0037 UJ
Ethylbenzene	1	41	0.0033 U	0.0037 UJ
Isopropylbenzene (Cumene)	NS	NS	0.0033 UJ	0.0037 UJ
M,P-Xylenes	NS	NS	0.0066 U	0.0075 UJ
Methyl Acetate	NS	NS	0.0033 U	0.0037 UJ
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0164 U	0.0187 UJ
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0164 U	0.0187 UJ
Methylcyclohexane	NS	NS	0.0033 U	0.0037 UJ
Methylene Chloride	0.05	100	0.0033 U	0.003 JH
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0033 U	0.0037 UJ
Styrene	NS	NS	0.0033 U	0.0037 U
Tert-Butyl Methyl Ether	0.93	100	0.0033 U	0.0037 UJ
Tetrachloroethylene (PCE)	1.3	19	0.0033 U	0.0037 UJ
Toluene	0.7	100	0.0033 U	0.0037 UJ
Trans-1,2-Dichloroethene	0.19	100	0.0033 U	0.0037 UJ
Trans-1,3-Dichloropropene	NS	NS	0.0033 U	0.0037 UJ
Trichloroethylene (TCE)	0.47	21	0.0033 U	0.0037 UJ
Trichlorofluoromethane	NS	NS	0.0033 U	0.0037 UJ
Vinyl Chloride	0.02	0.9	0.0033 U	0.0037 UJ
Xylenes, Total	0.26	100	0.0099 U	0.0112 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-6(0-2)-20171128 11/28/2017 1 mg/kg	SB-6(5-7)-20171128 11/28/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0037 U	0.0028 UJ
1,1,2,2-Tetrachloroethane	NS	NS	0.0037 U	0.0028 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0037 U	0.0028 UJ
1,1,2-Trichloroethane	NS	NS	0.0037 U	0.0028 UJ
1,1-Dichloroethane	0.27	26	0.0037 U	0.0028 UJ
1,1-Dichloroethene	0.33	100	0.0037 U	0.0028 UJ
1,2,3-Trichlorobenzene	NS	NS	0.0037 U	0.0028 UJ
1,2,4-Trichlorobenzene	NS	NS	0.0037 U	0.0028 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0037 U	0.0028 UJ
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0037 U	0.0028 UJ
1,2-Dichlorobenzene	1.1	100	0.0037 U	0.0028 UJ
1,2-Dichloroethane	0.02	3.1	0.0037 U	0.0028 UJ
1,2-Dichloropropane	NS	NS	0.0037 U	0.0028 UJ
1,3-Dichlorobenzene	2.4	49	0.0037 U	0.0028 UJ
1,4-Dichlorobenzene	1.8	13	0.0037 U	0.0028 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.0738 U	0.0565 UJ
2-Hexanone	NS	NS	0.0185 U	0.0141 UJ
Acetone	0.05	100	0.0163 J	0.0225 JH
Benzene	0.06	4.8	0.0037 U	0.0028 UJ
Bromochloromethane	NS	NS	0.0037 U	0.0028 UJ
Bromodichloromethane	NS	NS	0.0037 U	0.0028 UJ
Bromoform	NS	NS	0.0037 U	0.0028 UJ
Bromomethane	NS	NS	0.0037 U	0.0028 UJ
Carbon Disulfide	NS	NS	0.0037 U	0.0028 UJ
Carbon Tetrachloride	0.76	2.4	0.0037 U	0.0028 UJ
Chlorobenzene	1.1	100	0.0037 U	0.0028 UJ
Chloroethane	NS	NS	0.0037 U	0.0028 UJ
Chloroform	0.37	49	0.00079 J	0.0028 UJ
Chloromethane	NS	NS	0.0037 U	0.0028 UJ
Cis-1,2-Dichloroethylene	0.25	100	0.0037 U	0.0028 UJ
Cis-1,3-Dichloropropene	NS	NS	0.0037 U	0.0028 UJ
Cyclohexane	NS	NS	0.0037 U	0.0028 UJ
Dibromochloromethane	NS	NS	0.0037 U	0.0028 UJ
Dichlorodifluoromethane	NS	NS	0.0037 U	0.0028 UJ
Ethylbenzene	1	41	0.0037 U	0.0028 UJ
Isopropylbenzene (Cumene)	NS	NS	0.0037 U	0.0028 UJ
M,P-Xylenes	NS	NS	0.0074 U	0.0057 UJ
Methyl Acetate	NS	NS	0.0037 U	0.0028 UJ
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0185 U	0.0141 UJ
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0185 U	0.0141 UJ
Methylcyclohexane	NS	NS	0.0037 U	0.0028 UJ
Methylene Chloride	0.05	100	0.0034 J	0.0028 JH
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0037 U	0.0028 UJ
Styrene	NS	NS	0.0037 U	0.0028 UJ
Tert-Butyl Methyl Ether	0.93	100	0.0037 U	0.0028 UJ
Tetrachloroethylene (PCE)	1.3	19	0.0037 U	0.0028 UJ
Toluene	0.7	100	0.0037 U	0.0028 UJ
Trans-1,2-Dichloroethene	0.19	100	0.0037 U	0.0028 UJ
Trans-1,3-Dichloropropene	NS	NS	0.0037 U	0.0028 UJ
Trichloroethylene (TCE)	0.47	21	0.0037 U	0.0028 UJ
Trichlorofluoromethane	NS	NS	0.0037 U	0.0028 UJ
Vinyl Chloride	0.02	0.9	0.0037 U	0.0028 UJ
Xylenes, Total	0.26	100	0.0111 U	0.0085 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-7(0-2)-20171127 11/27/2017 1 mg/kg	SB-7(4-6)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.003 U	0.0022 U
1,1,2,2-Tetrachloroethane	NS	NS	0.003 UJ	0.0022 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.003 U	0.0022 U
1,1,2-Trichloroethane	NS	NS	0.003 U	0.0022 U
1,1-Dichloroethane	0.27	26	0.003 U	0.0022 U
1,1-Dichloroethene	0.33	100	0.003 U	0.0022 U
1,2,3-Trichlorobenzene	NS	NS	0.003 UJ	0.0022 U
1,2,4-Trichlorobenzene	NS	NS	0.003 UJ	0.0022 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.003 UJ	0.0022 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.003 U	0.0022 U
1,2-Dichlorobenzene	1.1	100	0.003 UJ	0.0022 U
1,2-Dichloroethane	0.02	3.1	0.003 U	0.0022 U
1,2-Dichloropropane	NS	NS	0.003 U	0.0022 U
1,3-Dichlorobenzene	2.4	49	0.003 UJ	0.0022 U
1,4-Dichlorobenzene	1.8	13	0.003 UJ	0.0022 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.061 U	0.0431 U
2-Hexanone	NS	NS	0.0152 U	0.0108 U
Acetone	0.05	100	0.0265	0.0085 J
Benzene	0.06	4.8	0.003 U	0.0022 U
Bromochloromethane	NS	NS	0.003 U	0.0022 U
Bromodichloromethane	NS	NS	0.003 U	0.0022 U
Bromoform	NS	NS	0.003 U	0.0022 U
Bromomethane	NS	NS	0.003 U	0.0022 U
Carbon Disulfide	NS	NS	0.003 U	0.0022 U
Carbon Tetrachloride	0.76	2.4	0.003 U	0.0022 U
Chlorobenzene	1.1	100	0.003 U	0.0022 U
Chloroethane	NS	NS	0.003 U	0.0022 U
Chloroform	0.37	49	0.003 U	0.0022 U
Chloromethane	NS	NS	0.003 U	0.0022 U
Cis-1,2-Dichloroethylene	0.25	100	0.003 U	0.0022 U
Cis-1,3-Dichloropropene	NS	NS	0.003 U	0.0022 U
Cyclohexane	NS	NS	0.003 U	0.0022 U
Dibromochloromethane	NS	NS	0.003 U	0.0022 U
Dichlorodifluoromethane	NS	NS	0.003 U	0.0022 U
Ethylbenzene	1	41	0.003 U	0.0022 U
Isopropylbenzene (Cumene)	NS	NS	0.003 UJ	0.0022 U
M,P-Xylenes	NS	NS	0.0061 U	0.0043 U
Methyl Acetate	NS	NS	0.003 U	0.0022 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0152 U	0.0108 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0152 U	0.0108 U
Methylcyclohexane	NS	NS	0.003 U	0.0022 U
Methylene Chloride	0.05	100	0.003 U	0.0026
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.003 U	0.0022 U
Styrene	NS	NS	0.003 U	0.0022 U
Tert-Butyl Methyl Ether	0.93	100	0.003 U	0.0022 U
Tetrachloroethylene (PCE)	1.3	19	0.003 U	0.0022 U
Toluene	0.7	100	0.003 U	0.0022 U
Trans-1,2-Dichloroethene	0.19	100	0.003 U	0.0022 U
Trans-1,3-Dichloropropene	NS	NS	0.003 U	0.0022 U
Trichloroethylene (TCE)	0.47	21	0.003 U	0.0022 U
Trichlorofluoromethane	NS	NS	0.003 U	0.0022 U
Vinyl Chloride	0.02	0.9	0.003 U	0.0022 U
Xylenes, Total	0.26	100	0.0091 U	0.0065 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-8(0-2)-20171127 11/27/2017 1 mg/kg	SB-8(10-12)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0031 U	0.0025 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0031 UJ	0.0025 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0031 U	0.0025 U
1,1,2-Trichloroethane	NS	NS	0.0031 U	0.0025 U
1,1-Dichloroethane	0.27	26	0.0031 U	0.0025 U
1,1-Dichloroethene	0.33	100	0.0031 U	0.0025 U
1,2,3-Trichlorobenzene	NS	NS	0.0031 UJ	0.0025 U
1,2,4-Trichlorobenzene	NS	NS	0.0031 UJ	0.0025 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.0031 UJ	0.0025 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0031 U	0.0025 U
1,2-Dichlorobenzene	1.1	100	0.0031 UJ	0.0025 U
1,2-Dichloroethane	0.02	3.1	0.0031 U	0.0025 U
1,2-Dichloropropane	NS	NS	0.0031 U	0.0025 U
1,3-Dichlorobenzene	2.4	49	0.0031 UJ	0.0025 U
1,4-Dichlorobenzene	1.8	13	0.0031 UJ	0.0025 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.0627 U	0.049 U
2-Hexanone	NS	NS	0.0157 U	0.0123 U
Acetone	0.05	100	0.0157 U	0.0085 J
Benzene	0.06	4.8	0.0031 U	0.0025 U
Bromochloromethane	NS	NS	0.0031 U	0.0025 U
Bromodichloromethane	NS	NS	0.0031 U	0.0025 U
Bromoform	NS	NS	0.0031 UJ	0.0025 U
Bromomethane	NS	NS	0.0031 U	0.0025 U
Carbon Disulfide	NS	NS	0.0031 U	0.0025 U
Carbon Tetrachloride	0.76	2.4	0.0031 U	0.0025 U
Chlorobenzene	1.1	100	0.0031 UJ	0.0025 U
Chloroethane	NS	NS	0.0031 U	0.0025 U
Chloroform	0.37	49	0.0031 U	0.00058 J
Chloromethane	NS	NS	0.0031 U	0.0025 U
Cis-1,2-Dichloroethylene	0.25	100	0.0031 U	0.0025 U
Cis-1,3-Dichloropropene	NS	NS	0.0031 U	0.0025 U
Cyclohexane	NS	NS	0.0031 U	0.0025 U
Dibromochloromethane	NS	NS	0.0031 U	0.0025 U
Dichlorodifluoromethane	NS	NS	0.0031 U	0.0025 U
Ethylbenzene	1	41	0.0031 UJ	0.0025 U
Isopropylbenzene (Cumene)	NS	NS	0.0031 UJ	0.0025 U
M,P-Xylenes	NS	NS	0.0063 UJ	0.0049 U
Methyl Acetate	NS	NS	0.0031 U	0.0025 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0157 U	0.0123 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0157 U	0.0123 U
Methylcyclohexane	NS	NS	0.0031 U	0.0025 U
Methylene Chloride	0.05	100	0.0031 U	0.0025 U
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0031 UJ	0.0025 U
Styrene	NS	NS	0.0031 UJ	0.0025 U
Tert-Butyl Methyl Ether	0.93	100	0.0031 U	0.0025 U
Tetrachloroethylene (PCE)	1.3	19	0.0031 UJ	0.0025 U
Toluene	0.7	100	0.0031 U	0.0025 U
Trans-1,2-Dichloroethene	0.19	100	0.0031 U	0.0025 U
Trans-1,3-Dichloropropene	NS	NS	0.0031 U	0.0025 U
Trichloroethylene (TCE)	0.47	21	0.0031 U	0.0025 U
Trichlorofluoromethane	NS	NS	0.0031 U	0.0025 U
Vinyl Chloride	0.02	0.9	0.0031 U	0.0025 U
Xylenes, Total	0.26	100	0.0094 U	0.0074 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-9(0-2)-20171127 11/27/2017 1 mg/kg	SB-9(8-10)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0035 U	0.0025 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0035 UJ	0.0025 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0035 U	0.0025 U
1,1,2-Trichloroethane	NS	NS	0.0035 U	0.0025 U
1,1-Dichloroethane	0.27	26	0.0035 U	0.0025 U
1,1-Dichloroethene	0.33	100	0.0035 U	0.0025 U
1,2,3-Trichlorobenzene	NS	NS	0.0035 UJ	0.0025 U
1,2,4-Trichlorobenzene	NS	NS	0.0035 UJ	0.0025 U
1,2-Dibromo-3-Chloropropane	NS	NS	0.0035 UJ	0.0025 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0035 U	0.0025 U
1,2-Dichlorobenzene	1.1	100	0.0035 UJ	0.0025 U
1,2-Dichloroethane	0.02	3.1	0.0035 U	0.0025 U
1,2-Dichloropropane	NS	NS	0.0035 U	0.0025 U
1,3-Dichlorobenzene	2.4	49	0.0035 UJ	0.0025 U
1,4-Dichlorobenzene	1.8	13	0.0035 UJ	0.0025 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.069 U	0.0494 U
2-Hexanone	NS	NS	0.0173 U	0.0123 U
Acetone	0.05	100	0.0173 U	0.0123 U
Benzene	0.06	4.8	0.0035 U	0.0025 U
Bromochloromethane	NS	NS	0.0035 U	0.0025 U
Bromodichloromethane	NS	NS	0.0035 U	0.0025 U
Bromoform	NS	NS	0.0035 U	0.0025 U
Bromomethane	NS	NS	0.0035 U	0.0025 U
Carbon Disulfide	NS	NS	0.0035 U	0.0025 U
Carbon Tetrachloride	0.76	2.4	0.0035 U	0.0025 U
Chlorobenzene	1.1	100	0.0035 U	0.0025 U
Chloroethane	NS	NS	0.0035 U	0.0025 U
Chloroform	0.37	49	0.0035 U	0.0025 U
Chloromethane	NS	NS	0.0035 U	0.0025 U
Cis-1,2-Dichloroethylene	0.25	100	0.0035 U	0.0025 U
Cis-1,3-Dichloropropene	NS	NS	0.0035 U	0.0025 U
Cyclohexane	NS	NS	0.0035 U	0.0025 U
Dibromochloromethane	NS	NS	0.0035 U	0.0025 U
Dichlorodifluoromethane	NS	NS	0.0035 U	0.0025 U
Ethylbenzene	1	41	0.0035 U	0.0025 U
Isopropylbenzene (Cumene)	NS	NS	0.0035 UJ	0.0025 U
M,P-Xylenes	NS	NS	0.0069 U	0.0049 U
Methyl Acetate	NS	NS	0.0035 U	0.0025 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0173 U	0.0123 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0173 U	0.0123 U
Methylcyclohexane	NS	NS	0.0035 U	0.0025 U
Methylene Chloride	0.05	100	0.0035 U	0.0026
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0035 U	0.0025 U
Styrene	NS	NS	0.0035 U	0.0025 U
Tert-Butyl Methyl Ether	0.93	100	0.0035 U	0.0025 U
Tetrachloroethylene (PCE)	1.3	19	0.0035 U	0.0025 U
Toluene	0.7	100	0.0035 U	0.0025 U
Trans-1,2-Dichloroethene	0.19	100	0.0035 U	0.0025 U
Trans-1,3-Dichloropropene	NS	NS	0.0035 U	0.0025 U
Trichloroethylene (TCE)	0.47	21	0.0035 U	0.0025 U
Trichlorofluoromethane	NS	NS	0.0035 U	0.0025 U
Vinyl Chloride	0.02	0.9	0.0035 U	0.0025 U
Xylenes, Total	0.26	100	0.0104 U	0.0074 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(0-2)-20171127 11/27/2017 1 mg/kg	SB-X(0-2)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0025 U	0.0025 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0025 UJ	0.0025 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0025 U	0.0025 U
1,1,2-Trichloroethane	NS	NS	0.0025 U	0.0025 U
1,1-Dichloroethane	0.27	26	0.0025 U	0.0025 U
1,1-Dichloroethene	0.33	100	0.0025 U	0.0025 U
1,2,3-Trichlorobenzene	NS	NS	0.0025 UJ	0.0025 U
1,2,4-Trichlorobenzene	NS	NS	0.0025 UJ	0.0025 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0025 UJ	0.0025 UJ
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0025 U	0.0025 U
1,2-Dichlorobenzene	1.1	100	0.0025 UJ	0.0025 UJ
1,2-Dichloroethane	0.02	3.1	0.0025 U	0.0025 U
1,2-Dichloropropane	NS	NS	0.0025 U	0.0025 U
1,3-Dichlorobenzene	2.4	49	0.0025 UJ	0.0025 UJ
1,4-Dichlorobenzene	1.8	13	0.0025 UJ	0.0025 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.0497 U	0.0496 U
2-Hexanone	NS	NS	0.0124 U	0.0124 U
Acetone	0.05	100	0.012 J	0.0121 J
Benzene	0.06	4.8	0.0025 U	0.0025 U
Bromochloromethane	NS	NS	0.0025 U	0.0025 U
Bromodichloromethane	NS	NS	0.0025 U	0.0025 U
Bromoform	NS	NS	0.0025 U	0.0025 U
Bromomethane	NS	NS	0.0025 U	0.0025 U
Carbon Disulfide	NS	NS	0.0025 U	0.0025 U
Carbon Tetrachloride	0.76	2.4	0.0025 U	0.0025 U
Chlorobenzene	1.1	100	0.0025 U	0.0025 U
Chloroethane	NS	NS	0.0025 U	0.0025 U
Chloroform	0.37	49	0.0025 U	0.0025 U
Chloromethane	NS	NS	0.0025 U	0.0025 U
Cis-1,2-Dichloroethylene	0.25	100	0.0025 U	0.0025 U
Cis-1,3-Dichloropropene	NS	NS	0.0025 U	0.0025 U
Cyclohexane	NS	NS	0.0025 U	0.0025 U
Dibromochloromethane	NS	NS	0.0025 U	0.0025 U
Dichlorodifluoromethane	NS	NS	0.0025 U	0.0025 U
Ethylbenzene	1	41	0.0025 U	0.0025 U
Isopropylbenzene (Cumene)	NS	NS	0.0025 UJ	0.0025 UJ
M,P-Xylenes	NS	NS	0.005 U	0.005 U
Methyl Acetate	NS	NS	0.0025 U	0.0025 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0124 U	0.0124 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0124 U	0.0124 U
Methylcyclohexane	NS	NS	0.0025 U	0.0025 U
Methylene Chloride	0.05	100	0.00095 J	0.0015 J
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0025 U	0.0025 U
Styrene	NS	NS	0.0025 U	0.0025 U
Tert-Butyl Methyl Ether	0.93	100	0.0025 U	0.0025 U
Tetrachloroethylene (PCE)	1.3	19	0.0025 U	0.0025 U
Toluene	0.7	100	0.0025 U	0.0025 U
Trans-1,2-Dichloroethene	0.19	100	0.0025 U	0.0025 U
Trans-1,3-Dichloropropene	NS	NS	0.0025 U	0.0025 U
Trichloroethylene (TCE)	0.47	21	0.0025 U	0.0025 U
Trichlorofluoromethane	NS	NS	0.0025 U	0.0025 U
Vinyl Chloride	0.02	0.9	0.0025 U	0.0025 U
Xylenes, Total	0.26	100	0.0075 U	0.0075 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(8-10)-20171127 11/27/2017 1 mg/kg	SB-11(0-2)-20171129 11/29/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0025 U	0.0025 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0025 U	0.0025 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0025 U	0.0025 U
1,1,2-Trichloroethane	NS	NS	0.0025 U	0.0025 U
1,1-Dichloroethane	0.27	26	0.0025 U	0.0025 U
1,1-Dichloroethene	0.33	100	0.0025 U	0.0025 U
1,2,3-Trichlorobenzene	NS	NS	0.0025 U	0.0025 UJ
1,2,4-Trichlorobenzene	NS	NS	0.0025 U	0.0025 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0025 U	0.0025 UJ
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0025 U	0.0025 U
1,2-Dichlorobenzene	1.1	100	0.0025 U	0.0025 UJ
1,2-Dichloroethane	0.02	3.1	0.0025 U	0.0025 U
1,2-Dichloropropane	NS	NS	0.0025 U	0.0025 U
1,3-Dichlorobenzene	2.4	49	0.0025 U	0.0025 UJ
1,4-Dichlorobenzene	1.8	13	0.0025 U	0.0025 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.051 U	0.0505 U
2-Hexanone	NS	NS	0.0127 U	0.0126 U
Acetone	0.05	100	0.0127 U	0.0126 U
Benzene	0.06	4.8	0.0025 U	0.0025 U
Bromochloromethane	NS	NS	0.0025 U	0.0025 U
Bromodichloromethane	NS	NS	0.0025 U	0.0025 U
Bromoform	NS	NS	0.0025 U	0.0025 U
Bromomethane	NS	NS	0.0025 U	0.0025 U
Carbon Disulfide	NS	NS	0.0025 U	0.0025 U
Carbon Tetrachloride	0.76	2.4	0.0025 U	0.0025 U
Chlorobenzene	1.1	100	0.0025 U	0.0025 U
Chloroethane	NS	NS	0.0025 U	0.0025 U
Chloroform	0.37	49	0.00066 J	0.0025 U
Chloromethane	NS	NS	0.0025 U	0.0025 U
Cis-1,2-Dichloroethylene	0.25	100	0.0025 U	0.0025 U
Cis-1,3-Dichloropropene	NS	NS	0.0025 U	0.0025 U
Cyclohexane	NS	NS	0.0025 U	0.0025 U
Dibromochloromethane	NS	NS	0.0025 U	0.0025 U
Dichlorodifluoromethane	NS	NS	0.0025 U	0.0025 U
Ethylbenzene	1	41	0.0025 U	0.0025 U
Isopropylbenzene (Cumene)	NS	NS	0.0025 U	0.0025 UJ
M,P-Xylenes	NS	NS	0.0051 U	0.005 U
Methyl Acetate	NS	NS	0.0025 U	0.0025 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0127 U	0.0126 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0127 U	0.0126 U
Methylcyclohexane	NS	NS	0.0025 U	0.0025 U
Methylene Chloride	0.05	100	0.0025 U	0.0025 U
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0025 U	0.0025 U
Styrene	NS	NS	0.0025 U	0.0025 U
Tert-Butyl Methyl Ether	0.93	100	0.0025 U	0.0025 U
Tetrachloroethylene (PCE)	1.3	19	0.0025 U	0.0025 U
Toluene	0.7	100	0.0025 U	0.0025 U
Trans-1,2-Dichloroethene	0.19	100	0.0025 U	0.0025 U
Trans-1,3-Dichloropropene	NS	NS	0.0025 U	0.0025 U
Trichloroethylene (TCE)	0.47	21	0.0025 U	0.0025 U
Trichlorofluoromethane	NS	NS	0.0025 U	0.0025 U
Vinyl Chloride	0.02	0.9	0.0025 U	0.0025 U
Xylenes, Total	0.26	100	0.0076 U	0.0075 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-11(6-8)-20171129 11/29/2017 1 mg/kg	SB-12(0-2)-20171127 11/27/2017 1 mg/kg
1,1,1-Trichloroethane	0.68	100	0.0042 U	0.0042 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0042 UJ	0.0042 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0042 U	0.0042 U
1,1,2-Trichloroethane	NS	NS	0.0042 U	0.0042 U
1,1-Dichloroethane	0.27	26	0.0042 U	0.0042 U
1,1-Dichloroethene	0.33	100	0.0042 U	0.0042 U
1,2,3-Trichlorobenzene	NS	NS	0.0042 UJ	0.0042 U
1,2,4-Trichlorobenzene	NS	NS	0.0042 UJ	0.0042 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0042 UJ	0.0042 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0042 U	0.0042 U
1,2-Dichlorobenzene	1.1	100	0.0042 UJ	0.0042 UJ
1,2-Dichloroethane	0.02	3.1	0.0042 U	0.0042 U
1,2-Dichloropropane	NS	NS	0.0042 U	0.0042 U
1,3-Dichlorobenzene	2.4	49	0.0042 UJ	0.0042 UJ
1,4-Dichlorobenzene	1.8	13	0.0042 UJ	0.0042 UJ
1,4-Dioxane (P-Dioxane)	0.1	13	0.085 U	0.084 U
2-Hexanone	NS	NS	0.0212 U	0.021 U
Acetone	0.05	100	0.0212 U	0.0098 J
Benzene	0.06	4.8	0.0042 U	0.0042 U
Bromochloromethane	NS	NS	0.0042 U	0.0042 U
Bromodichloromethane	NS	NS	0.0042 U	0.0042 U
Bromoform	NS	NS	0.0042 UJ	0.0042 U
Bromomethane	NS	NS	0.0042 U	0.0042 U
Carbon Disulfide	NS	NS	0.0042 U	0.0042 U
Carbon Tetrachloride	0.76	2.4	0.0042 U	0.0042 U
Chlorobenzene	1.1	100	0.0042 UJ	0.0042 U
Chloroethane	NS	NS	0.0042 U	0.0042 U
Chloroform	0.37	49	0.0042 U	0.00089 J
Chloromethane	NS	NS	0.0042 U	0.0042 U
Cis-1,2-Dichloroethylene	0.25	100	0.0042 U	0.0042 U
Cis-1,3-Dichloropropene	NS	NS	0.0042 U	0.0042 U
Cyclohexane	NS	NS	0.0042 U	0.0042 U
Dibromochloromethane	NS	NS	0.0042 U	0.0042 U
Dichlorodifluoromethane	NS	NS	0.0042 U	0.0042 U
Ethylbenzene	1	41	0.0042 UJ	0.0042 U
Isopropylbenzene (Cumene)	NS	NS	0.0042 UJ	0.0042 UJ
M,P-Xylenes	NS	NS	0.0085 UJ	0.0084 U
Methyl Acetate	NS	NS	0.0042 U	0.0042 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.0212 U	0.021 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.0212 U	0.021 U
Methylcyclohexane	NS	NS	0.0042 U	0.0042 U
Methylene Chloride	0.05	100	0.0042 U	0.0049
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0042 UJ	0.0042 U
Styrene	NS	NS	0.0042 UJ	0.0042 U
Tert-Butyl Methyl Ether	0.93	100	0.0042 U	0.0042 U
Tetrachloroethylene (PCE)	1.3	19	0.0042 UJ	0.0042 U
Toluene	0.7	100	0.0042 U	0.0042 U
Trans-1,2-Dichloroethene	0.19	100	0.0042 U	0.0042 U
Trans-1,3-Dichloropropene	NS	NS	0.0042 U	0.0042 U
Trichloroethylene (TCE)	0.47	21	0.0042 U	0.0042 U
Trichlorofluoromethane	NS	NS	0.0042 U	0.0042 U
Vinyl Chloride	0.02	0.9	0.0042 U	0.0042 U
Xylenes, Total	0.26	100	0.0127 U	0.0126 U

Table 1
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-12(10-12)-20171127 11/27/2017 1 mg/kg	FB-20171128 11/28/2017 1 ug/l	TB-20171127 11/20/2017 1 ug/l
1,1,1-Trichloroethane	0.68	100	0.0034 U	5 U	5 U
1,1,2,2-Tetrachloroethane	NS	NS	0.0034 UJ	5 U	5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	NS	0.0034 U	5 U	5 U
1,1,2-Trichloroethane	NS	NS	0.0034 U	5 U	5 U
1,1-Dichloroethane	0.27	26	0.0034 U	5 U	5 U
1,1-Dichloroethene	0.33	100	0.0034 U	5 U	5 U
1,2,3-Trichlorobenzene	NS	NS	0.0034 UJ	5 UJ	5 UJ
1,2,4-Trichlorobenzene	NS	NS	0.0034 UJ	5 U	5 UJ
1,2-Dibromo-3-Chloropropane	NS	NS	0.0034 UJ	5 U	5 U
1,2-Dibromoethane (Ethylene Dibromide)	NS	NS	0.0034 U	5 U	5 U
1,2-Dichlorobenzene	1.1	100	0.0034 UJ	5 U	5 U
1,2-Dichloroethane	0.02	3.1	0.0034 U	5 U	5 U
1,2-Dichloropropane	NS	NS	0.0034 U	5 U	5 U
1,3-Dichlorobenzene	2.4	49	0.0034 UJ	5 U	5 U
1,4-Dichlorobenzene	1.8	13	0.0034 UJ	5 U	5 U
1,4-Dioxane (P-Dioxane)	0.1	13	0.0682 U	100 U	100 U
2-Hexanone	NS	NS	0.017 U	25 U	25 U
Acetone	0.05	100	0.024	3.1 J	25 U
Benzene	0.06	4.8	0.0034 U	5 U	5 U
Bromochloromethane	NS	NS	0.0034 U	5 U	5 U
Bromodichloromethane	NS	NS	0.0034 U	5 U	5 U
Bromoform	NS	NS	0.0034 UJ	5 U	5 U
Bromomethane	NS	NS	0.0034 U	5 U	5 U
Carbon Disulfide	NS	NS	0.0034 U	5 U	5 U
Carbon Tetrachloride	0.76	2.4	0.0034 U	5 U	5 U
Chlorobenzene	1.1	100	0.0034 UJ	5 U	5 U
Chloroethane	NS	NS	0.0034 U	5 U	5 U
Chloroform	0.37	49	0.0034 U	5 U	5 U
Chloromethane	NS	NS	0.0034 U	5 U	5 U
Cis-1,2-Dichloroethylene	0.25	100	0.0034 U	5 U	5 U
Cis-1,3-Dichloropropene	NS	NS	0.0034 U	5 U	5 U
Cyclohexane	NS	NS	0.0034 U	5 UJ	5 U
Dibromochloromethane	NS	NS	0.0034 U	5 U	5 U
Dichlorodifluoromethane	NS	NS	0.0034 U	5 U	5 U
Ethylbenzene	1	41	0.0034 UJ	5 U	5 U
Isopropylbenzene (Cumene)	NS	NS	0.0034 UJ	5 U	5 U
M,P-Xylenes	NS	NS	0.0068 UJ	10 U	10 U
Methyl Acetate	NS	NS	0.0034 U	5 U	5 U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.017 U	25 U	25 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	NS	0.017 U	25 U	25 U
Methylcyclohexane	NS	NS	0.0034 U	5 U	5 U
Methylene Chloride	0.05	100	0.0017 J	5 U	5 U
O-Xylene (1,2-Dimethylbenzene)	NS	NS	0.0034 UJ	5 U	5 U
Styrene	NS	NS	0.0034 UJ	5 U	5 U
Tert-Butyl Methyl Ether	0.93	100	0.0034 U	5 U	5 U
Tetrachloroethylene (PCE)	1.3	19	0.0034 UJ	5 U	5 U
Toluene	0.7	100	0.0034 U	5 U	5 U
Trans-1,2-Dichloroethene	0.19	100	0.0034 U	5 U	5 U
Trans-1,3-Dichloropropene	NS	NS	0.0034 U	5 U	5 U
Trichloroethylene (TCE)	0.47	21	0.0034 U	5 U	5 U
Trichlorofluoromethane	NS	NS	0.0034 U	5 U	5 U
Vinyl Chloride	0.02	0.9	0.0034 U	5 U	5 U
Xylenes, Total	0.26	100	0.0102 U	15 U	15 U

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-1(0-2)-20171128 11/28/2017 1 mg/kg	SB-1(6-8)-20171128 11/28/2017 1 mg/kg	SB-2(0-2)-20171127 11/27/2017 1 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.38 U	0.36 U	0.36 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.38 U	0.36 U	0.36 U
2,4,5-Trichlorophenol	NS	NS	0.38 U	0.36 U	0.36 U
2,4,6-Trichlorophenol	NS	NS	0.38 U	0.36 U	0.36 U
2,4-Dichlorophenol	NS	NS	0.38 U	0.36 U	0.36 U
2,4-Dimethylphenol	NS	NS	0.38 U	0.36 U	0.36 U
2,4-Dinitrophenol	NS	NS	0.38 UJ	0.36 UJ	0.36 UJ
2,4-Dinitrotoluene	NS	NS	0.38 U	0.36 U	0.36 U
2,6-Dinitrotoluene	NS	NS	0.38 U	0.36 U	0.36 U
2-Chloronaphthalene	NS	NS	0.38 U	0.36 U	0.36 U
2-Chlorophenol	NS	NS	0.38 U	0.36 U	0.36 U
2-Methylnaphthalene	NS	NS	0.38 U	0.36 U	0.36 U
2-Methylphenol (O-Cresol)	0.33	100	0.38 U	0.36 U	0.36 U
2-Nitroaniline	NS	NS	0.38 U	0.36 U	0.36 U
2-Nitrophenol	NS	NS	0.38 U	0.36 U	0.36 U
3,3'-Dichlorobenzidine	NS	NS	0.38 U	0.36 U	0.36 U
3-Methylphenol/4-Methylphenol	NS	NS	0.38 U	0.36 U	0.36 U
3-Nitroaniline	NS	NS	0.38 U	0.36 U	0.36 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.38 UJ	0.36 UJ	0.36 U
4-Bromophenyl Phenyl Ether	NS	NS	0.38 U	0.36 U	0.36 U
4-Chloro-3-Methylphenol	NS	NS	0.38 U	0.36 U	0.36 U
4-Chloroaniline	NS	NS	0.38 U	0.36 U	0.36 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.38 U	0.36 U	0.36 U
4-Nitroaniline	NS	NS	0.38 U	0.36 U	0.36 U
4-Nitrophenol	NS	NS	0.38 U	0.36 U	0.36 U
Acenaphthene	20	100	0.38 U	0.11 J	0.36 U
Acenaphthylene	100	100	0.0989 J	0.0902 J	0.36 U
Acetophenone	NS	NS	0.38 U	0.36 U	0.36 U
Anthracene	100	100	0.17 J	0.33 J	0.36 U
Atrazine	NS	NS	0.38 U	0.36 U	0.36 U
Benzaldehyde	NS	NS	0.38 U	0.36 U	0.36 U
Benzo(a)Anthracene	1	1	0.75	**1.4**	0.36 U
Benzo(a)Pyrene	1	1	0.93	**1.2**	0.36 U
Benzo(b)Fluoranthene	1	1	**1.1**	**1.3**	0.36 U
Benzo(g,h,i)Perylene	100	100	0.83	0.69	0.36 U
Benzo(k)Fluoranthene	0.8	3.9	0.47	0.58	0.36 U
Benzyl Butyl Phthalate	NS	NS	0.38 U	0.36 U	0.36 U
Biphenyl (Diphenyl)	NS	NS	0.38 U	0.36 U	0.36 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.38 U	0.36 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.38 U	0.36 U	0.36 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.38 U	0.36 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.38 U	0.36 U	0.36 U
Caprolactam	NS	NS	0.38 U	0.36 U	0.36 U
Carbazole	NS	NS	0.0833 J	0.14 J	0.36 U
Chrysene	1	3.9	0.75	**1.3**	0.36 U
Dibenz(a,h)Anthracene	0.33	0.33	0.22 J	0.21 J	0.36 U
Dibenzofuran	7	59	0.38 U	0.36 U	0.36 U
Diethyl Phthalate	NS	NS	0.38 U	0.36 U	0.36 U
Dimethyl Phthalate	NS	NS	0.38 U	0.36 U	0.15 J
Di-N-Butyl Phthalate	NS	NS	0.38 U	0.36 U	0.36 U
Di-N-Octylphthalate	NS	NS	0.38 U	0.36 U	0.36 U
Fluoranthene	100	100	1.1	1.9	0.36 U
Fluorene	30	100	0.38 U	0.12 J	0.36 U
Hexachlorobenzene	0.33	1.2	0.38 U	0.36 U	0.36 U
Hexachlorobutadiene	NS	NS	0.38 U	0.36 U	0.36 U
Hexachlorocyclopentadiene	NS	NS	0.38 UJ	0.36 UJ	0.36 UJ
Hexachloroethane	NS	NS	0.38 U	0.36 U	0.36 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	**0.83**	**0.65**	0.36 U
Isophorone	NS	NS	0.38 U	0.36 U	0.36 U
Naphthalene	12	100	0.38 U	0.36 U	0.36 U
Nitrobenzene	NS	NS	0.38 U	0.36 U	0.36 U
N-Nitrosodi-N-Propylamine	NS	NS	0.38 U	0.36 U	0.36 U
N-Nitrosodiphenylamine	NS	NS	0.38 U	0.36 U	0.36 U
Pentachlorophenol	0.8	6.7	0.38 UJ	0.36 UJ	0.36 U
Phenanthrene	100	100	0.62	1.8	0.36 U
Phenol	0.33	100	0.13 J	0.11 J	0.11 J
Pyrene	100	100	1.3	2.6	0.36 U

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-2(10-12)-20171127 11/27/2017 1 mg/kg	SB-3(0-2)-20171127 11/27/2017 10 mg/kg	SB-3(10-12)-20171127 11/27/2017 5 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.35 U	3.6 U	1.8 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.35 U	3.6 U	1.8 U
2,4,5-Trichlorophenol	NS	NS	0.35 U	3.6 U	1.8 U
2,4,6-Trichlorophenol	NS	NS	0.35 U	3.6 U	1.8 U
2,4-Dichlorophenol	NS	NS	0.35 U	3.6 U	1.8 U
2,4-Dimethylphenol	NS	NS	0.35 U	3.6 U	1.8 U
2,4-Dinitrophenol	NS	NS	0.35 UJ	3.6 UJ	1.8 U
2,4-Dinitrotoluene	NS	NS	0.35 UJ	3.6 U	1.8 U
2,6-Dinitrotoluene	NS	NS	0.35 U	3.6 U	1.8 U
2-Chloronaphthalene	NS	NS	0.35 U	3.6 U	1.8 U
2-Chlorophenol	NS	NS	0.35 U	3.6 U	1.8 U
2-Methylnaphthalene	NS	NS	0.35 U	1.1 J	1.8 U
2-Methylphenol (O-Cresol)	0.33	100	0.35 U	3.6 U	1.8 U
2-Nitroaniline	NS	NS	0.35 U	3.6 U	1.8 U
2-Nitrophenol	NS	NS	0.35 UJ	3.6 UJ	1.8 U
3,3'-Dichlorobenzidine	NS	NS	0.35 U	3.6 U	1.8 U
3-Methylphenol/4-Methylphenol	NS	NS	0.35 U	3.6 U	1.8 U
3-Nitroaniline	NS	NS	0.35 U	3.6 U	1.8 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.35 UJ	3.6 UJ	1.8 U
4-Bromophenyl Phenyl Ether	NS	NS	0.35 U	3.6 U	1.8 U
4-Chloro-3-Methylphenol	NS	NS	0.35 U	3.6 U	1.8 U
4-Chloroaniline	NS	NS	0.35 U	3.6 U	1.8 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.35 U	3.6 U	1.8 U
4-Nitroaniline	NS	NS	0.35 U	3.6 U	1.8 U
4-Nitrophenol	NS	NS	0.35 U	3.6 U	1.8 U
Acenaphthene	20	100	0.35 U	3.6	1.8 U
Acenaphthylene	100	100	0.35 U	3.8	1.8 U
Acetophenone	NS	NS	0.35 U	3.6 U	1.8 U
Anthracene	100	100	0.35 U	11.6	1.8 U
Atrazine	NS	NS	0.35 U	3.6 U	1.8 U
Benzaldehyde	NS	NS	0.35 U	3.6 U	1.8 U
Benzo(a)Anthracene	1	1	0.35 U	**41.8 D**	0.76 J
Benzo(a)Pyrene	1	1	0.35 U	**39.5 D**	0.79 J
Benzo(b)Fluoranthene	1	1	0.35 U	**54.5 D**	1 J
Benzo(g,h,i)Perylene	100	100	0.35 U	23.5	0.74 J
Benzo(k)Fluoranthene	0.8	3.9	0.35 U	**16**	1.8 U
Benzyl Butyl Phthalate	NS	NS	0.35 U	3.6 U	1.3 J
Biphenyl (Diphenyl)	NS	NS	0.35 U	3.6 U	1.8 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.35 U	3.6 U	1.8 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.35 U	3.6 U	1.8 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.35 U	3.6 U	1.8 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.11 J	3.6 UJ	1.8 U
Caprolactam	NS	NS	0.35 U	3.6 U	1.8 U
Carbazole	NS	NS	0.35 U	3.9	1.8 U
Chrysene	1	3.9	0.35 U	**39.6 D**	0.84 J
Dibenz(a,h)Anthracene	0.33	0.33	0.35 U	**6.1**	1.8 U
Dibenzofuran	7	59	0.35 U	2.6 J	1.8 U
Diethyl Phthalate	NS	NS	0.35 U	3.6 U	1.8 U
Dimethyl Phthalate	NS	NS	0.14 J	3.6 U	1.8 U
Di-N-Butyl Phthalate	NS	NS	0.35 U	3.6 U	1.8 U
Di-N-Octylphthalate	NS	NS	0.35 U	3.6 U	1.8 U
Fluoranthene	100	100	0.35 U	84.1 D	1.3 J
Fluorene	30	100	0.35 U	5.1	1.8 U
Hexachlorobenzene	0.33	1.2	0.35 U	3.6 U	1.8 U
Hexachlorobutadiene	NS	NS	0.35 U	3.6 U	1.8 U
Hexachlorocyclopentadiene	NS	NS	0.35 U	3.6 U	1.8 U
Hexachloroethane	NS	NS	0.35 U	3.6 U	1.8 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	0.35 U	**18.5**	**0.57 J**
Isophorone	NS	NS	0.35 U	3.6 U	1.8 U
Naphthalene	12	100	0.35 U	1.7 J	1.8 U
Nitrobenzene	NS	NS	0.35 U	3.6 U	1.8 U
N-Nitrosodi-N-Propylamine	NS	NS	0.35 U	3.6 U	1.8 U
N-Nitrosodiphenylamine	NS	NS	0.35 U	3.6 U	1.8 U
Pentachlorophenol	0.8	6.7	0.35 U	3.6 U	1.8 U
Phenanthrene	100	100	0.35 U	56.3 D	0.88 J
Phenol	0.33	100	0.0958 J	3.6 U	1.8 U
Pyrene	100	100	0.35 U	68.1 D	1.6 J

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-4(0-2)-20171128 11/28/2017 1 mg/kg	SB-4(10-12)-20171128 11/28/2017 1 mg/kg	SB-5(0-2)-20171127 11/27/2017 1 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.36 U	0.34 U	0.37 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.36 U	0.34 U	0.37 U
2,4,5-Trichlorophenol	NS	NS	0.36 U	0.34 U	0.37 U
2,4,6-Trichlorophenol	NS	NS	0.36 U	0.34 U	0.37 U
2,4-Dichlorophenol	NS	NS	0.36 U	0.34 U	0.37 U
2,4-Dimethylphenol	NS	NS	0.36 U	0.34 U	0.37 U
2,4-Dinitrophenol	NS	NS	0.36 UJ	0.34 UJ	0.37 UJ
2,4-Dinitrotoluene	NS	NS	0.36 U	0.34 U	0.37 UJ
2,6-Dinitrotoluene	NS	NS	0.36 U	0.34 U	0.37 U
2-Chloronaphthalene	NS	NS	0.36 U	0.34 U	0.37 U
2-Chlorophenol	NS	NS	0.36 U	0.34 U	0.37 U
2-Methylnaphthalene	NS	NS	0.36 U	0.34 U	0.37 U
2-Methylphenol (O-Cresol)	0.33	100	0.36 U	0.34 U	0.37 U
2-Nitroaniline	NS	NS	0.36 U	0.34 U	0.37 U
2-Nitrophenol	NS	NS	0.36 U	0.34 U	0.37 UJ
3,3'-Dichlorobenzidine	NS	NS	0.36 U	0.34 U	0.37 U
3-Methylphenol/4-Methylphenol	NS	NS	0.36 U	0.34 U	0.37 U
3-Nitroaniline	NS	NS	0.36 U	0.34 U	0.37 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.36 UJ	0.34 UJ	0.37 UJ
4-Bromophenyl Phenyl Ether	NS	NS	0.36 U	0.34 U	0.37 U
4-Chloro-3-Methylphenol	NS	NS	0.36 U	0.34 U	0.37 U
4-Chloroaniline	NS	NS	0.36 U	0.34 U	0.37 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.36 U	0.34 U	0.37 U
4-Nitroaniline	NS	NS	0.36 U	0.34 U	0.37 U
4-Nitrophenol	NS	NS	0.36 U	0.34 U	0.37 U
Acenaphthene	20	100	0.36 U	0.34 U	0.11 J
Acenaphthylene	100	100	0.36 U	0.34 U	0.0798 J
Acetophenone	NS	NS	0.36 U	0.34 U	0.37 U
Anthracene	100	100	0.36 U	0.34 U	0.37
Atrazine	NS	NS	0.36 U	0.34 U	0.37 U
Benzaldehyde	NS	NS	0.36 U	0.34 U	0.37 U
Benzo(a)Anthracene	1	1	0.2 J	0.34 U	**1.2**
Benzo(a)Pyrene	1	1	0.2 J	0.34 U	1
Benzo(b)Fluoranthene	1	1	0.27 J	0.34 U	**1.4**
Benzo(g,h,i)Perylene	100	100	0.15 J	0.34 U	0.6
Benzo(k)Fluoranthene	0.8	3.9	0.0891 J	0.34 U	0.49
Benzyl Butyl Phthalate	NS	NS	0.36 U	0.34 U	0.0954 J
Biphenyl (Diphenyl)	NS	NS	0.36 U	0.34 U	0.37 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.36 U	0.34 U	0.37 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.36 U	0.34 U	0.37 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.36 U	0.34 U	0.37 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.36 U	0.34 U	0.11 J
Caprolactam	NS	NS	0.36 U	0.34 U	0.37 U
Carbazole	NS	NS	0.36 U	0.34 U	0.18 J
Chrysene	1	3.9	0.19 J	0.34 U	1
Dibenz(a,h)Anthracene	0.33	0.33	0.36 U	0.34 U	0.17 J
Dibenzofuran	7	59	0.36 U	0.34 U	0.0842 J
Diethyl Phthalate	NS	NS	0.36 U	0.34 U	0.37 U
Dimethyl Phthalate	NS	NS	0.36 U	0.34 U	0.2 J
Di-N-Butyl Phthalate	NS	NS	0.36 U	0.34 U	0.37 U
Di-N-Octylphthalate	NS	NS	0.36 U	0.34 U	0.37 U
Fluoranthene	100	100	0.32 J	0.34 U	2.4
Fluorene	30	100	0.36 U	0.34 U	0.12 J
Hexachlorobenzene	0.33	1.2	0.36 U	0.34 U	0.37 U
Hexachlorobutadiene	NS	NS	0.36 U	0.34 U	0.37 U
Hexachlorocyclopentadiene	NS	NS	0.36 UJ	0.34 UJ	0.37 U
Hexachloroethane	NS	NS	0.36 U	0.34 U	0.37 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	0.36 U	0.34 U	**0.52**
Isophorone	NS	NS	0.36 U	0.34 U	0.37 U
Naphthalene	12	100	0.36 U	0.34 U	0.37 U
Nitrobenzene	NS	NS	0.36 U	0.34 U	0.37 U
N-Nitrosodi-N-Propylamine	NS	NS	0.36 U	0.34 U	0.37 U
N-Nitrosodiphenylamine	NS	NS	0.36 U	0.34 U	0.37 U
Pentachlorophenol	0.8	6.7	0.36 UJ	0.34 UJ	0.37 U
Phenanthrene	100	100	0.19 J	0.34 U	1.8
Phenol	0.33	100	0.0976 J	0.11 J	0.11 J
Pyrene	100	100	0.34 J	0.34 U	1.7

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
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Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-5(10-12)-20171127 11/27/2017 1 mg/kg	SB-6(0-2)-20171128 11/28/2017 1 mg/kg	SB-6(5-7)-20171128 11/28/2017 1 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.35 U	0.36 U	0.38 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.35 U	0.36 U	0.38 U
2,4,5-Trichlorophenol	NS	NS	0.35 U	0.36 U	0.38 U
2,4,6-Trichlorophenol	NS	NS	0.35 U	0.36 U	0.38 U
2,4-Dichlorophenol	NS	NS	0.35 U	0.36 U	0.38 U
2,4-Dimethylphenol	NS	NS	0.35 U	0.36 U	0.38 U
2,4-Dinitrophenol	NS	NS	0.35 UJ	0.36 UJ	0.38 UJ
2,4-Dinitrotoluene	NS	NS	0.35 UJ	0.36 U	0.38 U
2,6-Dinitrotoluene	NS	NS	0.35 U	0.36 U	0.38 U
2-Chloronaphthalene	NS	NS	0.35 U	0.36 U	0.38 U
2-Chlorophenol	NS	NS	0.35 U	0.36 U	0.38 U
2-Methylnaphthalene	NS	NS	0.35 U	0.36 U	0.38 U
2-Methylphenol (O-Cresol)	0.33	100	0.35 U	0.36 U	0.38 U
2-Nitroaniline	NS	NS	0.35 U	0.36 U	0.38 U
2-Nitrophenol	NS	NS	0.35 UJ	0.36 U	0.38 U
3,3'-Dichlorobenzidine	NS	NS	0.35 U	0.36 U	0.38 U
3-Methylphenol/4-Methylphenol	NS	NS	0.35 U	0.36 U	0.38 U
3-Nitroaniline	NS	NS	0.35 U	0.36 U	0.38 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.35 UJ	0.36 UJ	0.38 UJ
4-Bromophenyl Phenyl Ether	NS	NS	0.35 U	0.36 U	0.38 U
4-Chloro-3-Methylphenol	NS	NS	0.35 U	0.36 U	0.38 U
4-Chloroaniline	NS	NS	0.35 U	0.36 U	0.38 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.35 U	0.36 U	0.38 U
4-Nitroaniline	NS	NS	0.35 U	0.36 U	0.38 U
4-Nitrophenol	NS	NS	0.35 U	0.36 U	0.38 U
Acenaphthene	20	100	0.35 U	0.36 U	0.38 U
Acenaphthylene	100	100	0.35 U	0.0841 J	0.38 U
Acetophenone	NS	NS	0.35 U	0.36 U	0.38 U
Anthracene	100	100	0.12 J	0.29 J	0.38 U
Atrazine	NS	NS	0.35 U	0.36 U	0.38 U
Benzaldehyde	NS	NS	0.35 U	0.36 U	0.38 U
Benzo(a)Anthracene	1	1	0.39	0.97	0.26 J
Benzo(a)Pyrene	1	1	0.29 J	1	0.33 J
Benzo(b)Fluoranthene	1	1	0.42	**1.3**	0.45
Benzo(g,h,i)Perylene	100	100	0.18 J	0.64	0.26 J
Benzo(k)Fluoranthene	0.8	3.9	0.14 J	0.51	0.18 J
Benzyl Butyl Phthalate	NS	NS	0.35 U	0.36 U	0.38 U
Biphenyl (Diphenyl)	NS	NS	0.35 U	0.36 U	0.38 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.35 U	0.36 U	0.38 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.35 U	0.36 U	0.38 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.35 U	0.36 U	0.38 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.0888 J	0.0891 J	0.14 J
Caprolactam	NS	NS	0.35 U	0.36 U	0.38 U
Carbazole	NS	NS	0.35 U	0.12 J	0.38 U
Chrysene	1	3.9	0.37	0.94	0.28 J
Dibenz(a,h)Anthracene	0.33	0.33	0.35 U	0.16 J	0.38 U
Dibenzofuran	7	59	0.35 U	0.36 U	0.38 U
Diethyl Phthalate	NS	NS	0.35 U	0.36 U	0.38 U
Dimethyl Phthalate	NS	NS	0.17 J	0.36 U	0.38 U
Di-N-Butyl Phthalate	NS	NS	0.35 U	0.36 U	0.38 U
Di-N-Octylphthalate	NS	NS	0.35 U	0.36 U	0.38 U
Fluoranthene	100	100	0.88	1.6	0.44
Fluorene	30	100	0.35 U	0.0928 J	0.38 U
Hexachlorobenzene	0.33	1.2	0.35 U	0.36 U	0.38 U
Hexachlorobutadiene	NS	NS	0.35 U	0.36 U	0.38 U
Hexachlorocyclopentadiene	NS	NS	0.35 U	0.36 UJ	0.38 UJ
Hexachloroethane	NS	NS	0.35 U	0.36 U	0.38 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	0.18 J	**0.59**	0.21 J
Isophorone	NS	NS	0.35 U	0.36 U	0.38 U
Naphthalene	12	100	0.35 UJ	0.36 U	0.38 UJ
Nitrobenzene	NS	NS	0.35 U	0.36 U	0.38 U
N-Nitrosodi-N-Propylamine	NS	NS	0.35 U	0.36 U	0.38 U
N-Nitrosodiphenylamine	NS	NS	0.35 U	0.36 U	0.38 U
Pentachlorophenol	0.8	6.7	0.35 U	0.36 UJ	0.38 UJ
Phenanthrene	100	100	0.69	1.2	0.25 J
Phenol	0.33	100	0.0999 J	0.1 J	0.0901 J
Pyrene	100	100	0.62	1.7	0.44

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-7(0-2)-20171127 11/27/2017 5 mg/kg	SB-7(4-6)-20171127 11/27/2017 2 mg/kg	SB-8(0-2)-20171127 11/27/2017 10 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	1.7 U	0.68 U	3.7 U
2,3,4,6-Tetrachlorophenol	NS	NS	1.7 U	0.68 U	3.7 U
2,4,5-Trichlorophenol	NS	NS	1.7 U	0.68 U	3.7 U
2,4,6-Trichlorophenol	NS	NS	1.7 U	0.68 U	3.7 U
2,4-Dichlorophenol	NS	NS	1.7 U	0.68 U	3.7 U
2,4-Dimethylphenol	NS	NS	1.7 U	0.68 U	3.7 U
2,4-Dinitrophenol	NS	NS	1.7 U	0.68 U	3.7 UJ
2,4-Dinitrotoluene	NS	NS	1.7 U	0.68 U	3.7 UJ
2,6-Dinitrotoluene	NS	NS	1.7 U	0.68 U	3.7 U
2-Chloronaphthalene	NS	NS	1.7 U	0.68 U	3.7 U
2-Chlorophenol	NS	NS	1.7 U	0.68 U	3.7 U
2-Methylnaphthalene	NS	NS	1.7 U	1.5	3.7 U
2-Methylphenol (O-Cresol)	0.33	100	1.7 U	0.68 U	3.7 U
2-Nitroaniline	NS	NS	1.7 U	0.68 U	3.7 U
2-Nitrophenol	NS	NS	1.7 U	0.68 U	3.7 UJ
3,3'-Dichlorobenzidine	NS	NS	1.7 U	0.68 U	3.7 U
3-Methylphenol/4-Methylphenol	NS	NS	1.7 U	0.68 U	3.7 U
3-Nitroaniline	NS	NS	1.7 U	0.68 U	3.7 U
4,6-Dinitro-2-Methylphenol	NS	NS	1.7 U	0.68 U	3.7 UJ
4-Bromophenyl Phenyl Ether	NS	NS	1.7 U	0.68 U	3.7 U
4-Chloro-3-Methylphenol	NS	NS	1.7 U	0.68 U	3.7 U
4-Chloroaniline	NS	NS	1.7 U	0.68 U	3.7 U
4-Chlorophenyl Phenyl Ether	NS	NS	1.7 U	0.68 U	3.7 U
4-Nitroaniline	NS	NS	1.7 U	0.68 U	3.7 U
4-Nitrophenol	NS	NS	1.7 U	0.68 U	3.7 U
Acenaphthene	20	100	1.7 U	2.1	0.83 J
Acenaphthylene	100	100	1.7 U	0.21 J	3.7 U
Acetophenone	NS	NS	1.7 U	0.68 U	3.7 U
Anthracene	100	100	0.45 J	2.7	1.9 J
Atrazine	NS	NS	1.7 U	0.68 U	3.7 U
Benzaldehyde	NS	NS	1.7 U	0.68 U	3.7 U
Benzo(a)Anthracene	1	1	**1.2 J**	**6.4 D**	**4.5**
Benzo(a)Pyrene	1	1	**1.1 J**	**5**	**4.2**
Benzo(b)Fluoranthene	1	1	**1.2 J**	**8.2 D**	**5.6**
Benzo(g,h,i)Perylene	100	100	0.72 J	2.9	2.6 J
Benzo(k)Fluoranthene	0.8	3.9	0.53 J	**2**	**2.1 J**
Benzyl Butyl Phthalate	NS	NS	1.7 U	0.68 U	3.7 U
Biphenyl (Diphenyl)	NS	NS	1.7 U	0.33 J	3.7 U
Bis(2-Chloroethoxy) Methane	NS	NS	1.7 U	0.68 U	3.7 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	1.7 U	0.68 U	3.7 U
Bis(2-Chloroisopropyl) Ether	NS	NS	1.7 U	0.68 U	3.7 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	1.7 U	0.68 U	3.7 U
Caprolactam	NS	NS	1.7 U	0.68 U	3.7 U
Carbazole	NS	NS	1.7 U	1.5	0.95 J
Chrysene	1	3.9	**1.2 J**	**6.4 D**	**4.1**
Dibenz(a,h)Anthracene	0.33	0.33	1.7 U	**0.81**	3.7 U
Dibenzofuran	7	59	1.7 U	1.5	3.7 U
Diethyl Phthalate	NS	NS	1.7 U	0.68 U	3.7 U
Dimethyl Phthalate	NS	NS	1.7 U	0.15 J	3.7 U
Di-N-Butyl Phthalate	NS	NS	1.7 U	0.68 U	3.7 U
Di-N-Octylphthalate	NS	NS	1.7 U	0.68 U	3.7 U
Fluoranthene	100	100	2.1	16.3 D	11.1
Fluorene	30	100	1.7 U	2.2	1.1 J
Hexachlorobenzene	0.33	1.2	1.7 U	0.68 U	3.7 U
Hexachlorobutadiene	NS	NS	1.7 U	0.68 U	3.7 U
Hexachlorocyclopentadiene	NS	NS	1.7 U	0.68 U	3.7 U
Hexachloroethane	NS	NS	1.7 U	0.68 U	3.7 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	**0.76 J**	**3.7**	**2.1 J**
Isophorone	NS	NS	1.7 U	0.68 U	3.7 U
Naphthalene	12	100	1.7 U	3.9	0.87 J
Nitrobenzene	NS	NS	1.7 U	0.68 U	3.7 U
N-Nitrosodi-N-Propylamine	NS	NS	1.7 U	0.68 U	3.7 U
N-Nitrosodiphenylamine	NS	NS	1.7 U	0.68 U	3.7 U
Pentachlorophenol	0.8	6.7	1.7 U	0.68 U	3.7 U
Phenanthrene	100	100	2.2	17.3 D	8.3
Phenol	0.33	100	1.7 U	0.19 J	3.7 U
Pyrene	100	100	2	11.8 D	7.1

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-8(10-12)-20171127 11/27/2017 1 mg/kg	SB-9(0-2)-20171127 11/27/2017 2 mg/kg	SB-9(8-10)-20171127 11/27/2017 1 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.34 U	0.74 U	0.41 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.34 U	0.74 U	0.41 U
2,4,5-Trichlorophenol	NS	NS	0.34 U	0.74 U	0.41 U
2,4,6-Trichlorophenol	NS	NS	0.34 U	0.74 U	0.41 U
2,4-Dichlorophenol	NS	NS	0.34 U	0.74 U	0.41 U
2,4-Dimethylphenol	NS	NS	0.34 U	0.74 U	0.41 U
2,4-Dinitrophenol	NS	NS	0.34 UJ	0.74 U	0.41 UJ
2,4-Dinitrotoluene	NS	NS	0.34 U	0.74 U	0.41 UJ
2,6-Dinitrotoluene	NS	NS	0.34 U	0.74 U	0.41 U
2-Chloronaphthalene	NS	NS	0.34 U	0.74 U	0.41 U
2-Chlorophenol	NS	NS	0.34 U	0.74 U	0.41 U
2-Methylnaphthalene	NS	NS	0.34 U	0.23 J	0.41 U
2-Methylphenol (O-Cresol)	0.33	100	0.34 U	0.74 U	0.41 U
2-Nitroaniline	NS	NS	0.34 U	0.74 U	0.41 U
2-Nitrophenol	NS	NS	0.34 U	0.74 U	0.41 UJ
3,3'-Dichlorobenzidine	NS	NS	0.34 U	0.74 U	0.41 U
3-Methylphenol/4-Methylphenol	NS	NS	0.34 U	0.74 U	0.41 U
3-Nitroaniline	NS	NS	0.34 U	0.74 U	0.41 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.34 U	0.74 U	0.41 UJ
4-Bromophenyl Phenyl Ether	NS	NS	0.34 U	0.74 U	0.41 U
4-Chloro-3-Methylphenol	NS	NS	0.34 U	0.74 U	0.41 U
4-Chloroaniline	NS	NS	0.34 U	0.74 U	0.41 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.34 U	0.74 U	0.41 U
4-Nitroaniline	NS	NS	0.34 U	0.74 U	0.41 U
4-Nitrophenol	NS	NS	0.34 U	0.74 U	0.41 U
Acenaphthene	20	100	0.34 U	0.8	0.41 U
Acenaphthylene	100	100	0.34 U	0.42 J	0.41 U
Acetophenone	NS	NS	0.34 U	0.74 U	0.41 U
Anthracene	100	100	0.34 U	2.1	0.41 U
Atrazine	NS	NS	0.34 U	0.74 U	0.41 U
Benzaldehyde	NS	NS	0.34 U	0.74 U	0.41 U
Benzo(a)Anthracene	1	1	0.34 U	**6.9 D**	0.41 U
Benzo(a)Pyrene	1	1	0.34 U	**5.7**	0.41 U
Benzo(b)Fluoranthene	1	1	0.34 U	**8.4 D**	0.41 U
Benzo(g,h,i)Perylene	100	100	0.34 U	3.1	0.41 U
Benzo(k)Fluoranthene	0.8	3.9	0.34 U	**2.5**	0.41 U
Benzyl Butyl Phthalate	NS	NS	0.34 U	15.3 D	0.41 U
Biphenyl (Diphenyl)	NS	NS	0.34 U	0.74 U	0.41 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.34 U	0.74 U	0.41 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.34 U	0.74 U	0.41 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.34 U	0.74 U	0.41 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.34 U	2.5	0.41 U
Caprolactam	NS	NS	0.34 U	0.74 U	0.41 U
Carbazole	NS	NS	0.34 U	0.9	0.41 U
Chrysene	1	3.9	0.34 U	**6.6 D**	0.41 U
Dibenz(a,h)Anthracene	0.33	0.33	0.34 U	**0.89**	0.41 U
Dibenzofuran	7	59	0.34 U	0.43 J	0.41 U
Diethyl Phthalate	NS	NS	0.34 U	0.74 U	0.41 U
Dimethyl Phthalate	NS	NS	0.16 J	0.18 J	0.27 J
Di-N-Butyl Phthalate	NS	NS	0.34 U	0.74 U	0.41 U
Di-N-Octylphthalate	NS	NS	0.34 U	0.74 U	0.41 U
Fluoranthene	100	100	0.34 U	14.4 D	0.41 U
Fluorene	30	100	0.34 U	0.8	0.41 U
Hexachlorobenzene	0.33	1.2	0.34 U	0.74 U	0.41 U
Hexachlorobutadiene	NS	NS	0.34 U	0.74 U	0.41 U
Hexachlorocyclopentadiene	NS	NS	0.34 UJ	0.74 U	0.41 U
Hexachloroethane	NS	NS	0.34 U	0.74 U	0.41 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	0.34 U	**3.6**	0.41 U
Isophorone	NS	NS	0.34 U	0.74 U	0.41 U
Naphthalene	12	100	0.34 U	0.45 J	0.41 U
Nitrobenzene	NS	NS	0.34 U	0.74 U	0.41 U
N-Nitrosodi-N-Propylamine	NS	NS	0.34 U	0.74 U	0.41 U
N-Nitrosodiphenylamine	NS	NS	0.34 U	0.74 U	0.41 U
Pentachlorophenol	0.8	6.7	0.34 U	0.74 U	0.41 U
Phenanthrene	100	100	0.34 U	9.6 D	0.41 U
Phenol	0.33	100	0.11 J	0.74 U	0.12 J
Pyrene	100	100	0.34 U	11.3 D	0.41 U

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(0-2)-20171127 11/27/2017 1 mg/kg	SB-X(0-2)-20171127 11/27/2017 1 mg/kg	SB-10(8-10)-20171127 11/27/2017 2 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.38 U	0.77 U	0.36 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.38 U	0.77 U	0.36 U
2,4,5-Trichlorophenol	NS	NS	0.38 U	0.77 U	0.36 U
2,4,6-Trichlorophenol	NS	NS	0.38 U	0.77 U	0.36 U
2,4-Dichlorophenol	NS	NS	0.38 U	0.77 U	0.36 U
2,4-Dimethylphenol	NS	NS	0.38 U	0.77 U	0.36 U
2,4-Dinitrophenol	NS	NS	0.38 U	0.77 U	0.36 UJ
2,4-Dinitrotoluene	NS	NS	0.38 U	0.77 U	0.36 U
2,6-Dinitrotoluene	NS	NS	0.38 U	0.77 U	0.36 U
2-Chloronaphthalene	NS	NS	0.38 U	0.77 U	0.36 U
2-Chlorophenol	NS	NS	0.38 U	0.77 U	0.36 U
2-Methylnaphthalene	NS	NS	0.38 U	0.77 U	0.27 J
2-Methylphenol (O-Cresol)	0.33	100	0.38 U	0.77 U	0.36 U
2-Nitroaniline	NS	NS	0.38 U	0.77 U	0.36 U
2-Nitrophenol	NS	NS	0.38 U	0.77 U	0.36 UJ
3,3'-Dichlorobenzidine	NS	NS	0.38 U	0.77 U	0.36 U
3-Methylphenol/4-Methylphenol	NS	NS	0.38 U	0.77 U	0.36 U
3-Nitroaniline	NS	NS	0.38 U	0.77 U	0.36 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.38 U	0.77 U	0.36 UJ
4-Bromophenyl Phenyl Ether	NS	NS	0.38 U	0.77 U	0.36 U
4-Chloro-3-Methylphenol	NS	NS	0.38 U	0.77 U	0.36 U
4-Chloroaniline	NS	NS	0.38 U	0.77 U	0.36 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.38 U	0.77 U	0.36 U
4-Nitroaniline	NS	NS	0.38 U	0.77 U	0.36 U
4-Nitrophenol	NS	NS	0.38 U	0.77 U	0.36 U
Acenaphthene	20	100	0.18 J	0.16 J	0.44
Acenaphthylene	100	100	0.11 J	0.77 U	0.15 J
Acetophenone	NS	NS	0.38 U	0.77 U	0.36 U
Anthracene	100	100	0.49	0.49 J	0.96
Atrazine	NS	NS	0.38 U	0.77 U	0.36 U
Benzaldehyde	NS	NS	0.38 U	0.77 U	0.36 U
Benzo(a)Anthracene	1	1	**1.4**	**1.6**	**1.9**
Benzo(a)Pyrene	1	1	**1.3**	**1.5**	**1.6**
Benzo(b)Fluoranthene	1	1	**1.6**	**2**	**2.1**
Benzo(g,h,i)Perylene	100	100	0.77	0.74 J	1.1
Benzo(k)Fluoranthene	0.8	3.9	0.55	0.65 J	0.77
Benzyl Butyl Phthalate	NS	NS	0.18 J	0.77 U	0.0925 J
Biphenyl (Diphenyl)	NS	NS	0.38 U	0.77 U	0.36 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.38 U	0.77 U	0.36 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.38 U	0.77 U	0.36 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.38 U	0.77 U	0.36 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	1.2 J	3 J	0.27 J
Caprolactam	NS	NS	0.38 U	0.77 U	0.36 U
Carbazole	NS	NS	0.18 J	0.16 J	0.27 J
Chrysene	1	3.9	**1.5**	**1.6**	**1.6**
Dibenz(a,h)Anthracene	0.33	0.33	0.22 J	0.19 J	0.31 J
Dibenzofuran	7	59	0.1 J	0.77 U	0.28 J
Diethyl Phthalate	NS	NS	0.38 U	0.77 U	0.36 U
Dimethyl Phthalate	NS	NS	0.18 J	0.26 J	0.19 J
Di-N-Butyl Phthalate	NS	NS	0.38 U	0.77 U	0.36 U
Di-N-Octylphthalate	NS	NS	0.38 U	0.77 U	0.36 U
Fluoranthene	100	100	2.3	2.9	3.4 D
Fluorene	30	100	0.21 J	0.16 J	0.58
Hexachlorobenzene	0.33	1.2	0.38 U	0.77 U	0.36 U
Hexachlorobutadiene	NS	NS	0.38 U	0.77 U	0.36 U
Hexachlorocyclopentadiene	NS	NS	0.38 U	0.77 U	0.36 U
Hexachloroethane	NS	NS	0.38 U	0.77 U	0.36 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	**0.81**	**0.62 J**	**0.81**
Isophorone	NS	NS	0.38 U	0.77 U	0.36 U
Naphthalene	12	100	0.0905 J	0.77 U	0.27 J
Nitrobenzene	NS	NS	0.38 U	0.77 U	0.36 U
N-Nitrosodi-N-Propylamine	NS	NS	0.38 U	0.77 U	0.36 U
N-Nitrosodiphenylamine	NS	NS	0.38 U	0.77 U	0.36 U
Pentachlorophenol	0.8	6.7	0.38 U	0.77 U	0.36 U
Phenanthrene	100	100	1.9	2	3.1 D
Phenol	0.33	100	0.13 J	0.77 U	0.11 J
Pyrene	100	100	2.7	2.4	2.9 D

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-11(0-2)-20171129 11/29/2017 2 mg/kg	SB-11(6-8)-20171129 11/29/2017 2 mg/kg	SB-12(0-2)-20171127 11/27/2017 2 mg/kg
1,2,4,5-Tetrachlorobenzene	NS	NS	0.71 U	0.74 U	0.74 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4,5-Trichlorophenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4,6-Trichlorophenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4-Dichlorophenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4-Dimethylphenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4-Dinitrophenol	NS	NS	0.71 U	0.74 U	0.74 U
2,4-Dinitrotoluene	NS	NS	0.71 U	0.74 U	0.74 U
2,6-Dinitrotoluene	NS	NS	0.71 U	0.74 U	0.74 U
2-Chloronaphthalene	NS	NS	0.71 U	0.74 U	0.74 U
2-Chlorophenol	NS	NS	0.71 U	0.74 U	0.74 U
2-Methylnaphthalene	NS	NS	0.71 U	0.74 U	0.74 U
2-Methylphenol (O-Cresol)	0.33	100	0.71 U	0.74 U	0.74 U
2-Nitroaniline	NS	NS	0.71 U	0.74 U	0.74 U
2-Nitrophenol	NS	NS	0.71 U	0.74 U	0.74 U
3,3'-Dichlorobenzidine	NS	NS	0.71 U	0.74 U	0.74 U
3-Methylphenol/4-Methylphenol	NS	NS	0.71 U	0.74 U	0.74 U
3-Nitroaniline	NS	NS	0.71 U	0.74 U	0.74 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.71 UJ	0.74 UJ	0.74 U
4-Bromophenyl Phenyl Ether	NS	NS	0.71 U	0.74 U	0.74 U
4-Chloro-3-Methylphenol	NS	NS	0.71 U	0.74 U	0.74 U
4-Chloroaniline	NS	NS	0.71 U	0.74 U	0.74 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.71 U	0.74 U	0.74 U
4-Nitroaniline	NS	NS	0.71 UJ	0.74 UJ	0.74 U
4-Nitrophenol	NS	NS	0.71 U	0.74 U	0.74 U
Acenaphthene	20	100	0.71 U	0.37 J	0.21 J
Acenaphthylene	100	100	0.71 U	0.25 J	0.74 U
Acetophenone	NS	NS	0.71 U	0.74 U	0.74 U
Anthracene	100	100	0.21 J	1	0.61 J
Atrazine	NS	NS	0.71 U	0.74 U	0.74 U
Benzaldehyde	NS	NS	0.71 U	0.74 U	0.74 U
Benzo(a)Anthracene	1	1	0.86	**3.4**	**2**
Benzo(a)Pyrene	1	1	0.8	**2.9**	**1.8**
Benzo(b)Fluoranthene	1	1	**1.1**	**3.9**	**2.4**
Benzo(g,h,i)Perylene	100	100	0.51 J	1.6	1
Benzo(k)Fluoranthene	0.8	3.9	0.33 J	**1.1**	0.77
Benzyl Butyl Phthalate	NS	NS	0.71 U	0.74 U	0.74 U
Biphenyl (Diphenyl)	NS	NS	0.71 UJ	0.74 UJ	0.74 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.71 U	0.74 U	0.74 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.71 U	0.74 U	0.74 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.71 U	0.74 U	0.74 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.71 UJ	0.77 JL	0.74 U
Caprolactam	NS	NS	0.71 UJ	0.74 UJ	0.74 U
Carbazole	NS	NS	0.71 UJ	0.29 JL	0.26 J
Chrysene	1	3.9	0.82	**3.2**	**2.1**
Dibenz(a,h)Anthracene	0.33	0.33	0.71 U	**0.45 J**	0.3 J
Dibenzofuran	7	59	0.71 U	0.74 U	0.74 U
Diethyl Phthalate	NS	NS	0.71 U	0.74 U	0.74 U
Dimethyl Phthalate	NS	NS	0.71 UJ	0.74 UJ	0.18 J
Di-N-Butyl Phthalate	NS	NS	0.71 UJ	0.74 UJ	0.74 U
Di-N-Octylphthalate	NS	NS	0.71 UJ	0.74 UJ	0.74 U
Fluoranthene	100	100	1.5	5.9	3.5
Fluorene	30	100	0.71 U	0.38 J	0.21 J
Hexachlorobenzene	0.33	1.2	0.71 U	0.74 U	0.74 U
Hexachlorobutadiene	NS	NS	0.71 U	0.74 U	0.74 U
Hexachlorocyclopentadiene	NS	NS	0.71 UJ	0.74 UJ	0.74 U
Hexachloroethane	NS	NS	0.71 U	0.74 U	0.74 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	0.42 J	**1.3**	**0.99**
Isophorone	NS	NS	0.71 U	0.74 U	0.74 U
Naphthalene	12	100	0.71 U	0.74 U	0.74 U
Nitrobenzene	NS	NS	0.71 U	0.74 U	0.74 U
N-Nitrosodi-N-Propylamine	NS	NS	0.71 U	0.74 U	0.74 U
N-Nitrosodiphenylamine	NS	NS	0.71 U	0.74 U	0.74 U
Pentachlorophenol	0.8	6.7	0.71 U	0.74 U	0.74 U
Phenanthrene	100	100	1	4.1	2.8
Phenol	0.33	100	0.71 U	0.74 U	0.74 U
Pyrene	100	100	1.4	5.4	3.5

Table 2
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-12(10-12)-20171127 11/27/2017 5 mg/kg	FB-1-20171128 11/28/2017 1 ug/l
1,2,4,5-Tetrachlorobenzene	NS	NS	0.38 U	10 U
2,3,4,6-Tetrachlorophenol	NS	NS	0.38 U	10 U
2,4,5-Trichlorophenol	NS	NS	0.38 U	10 U
2,4,6-Trichlorophenol	NS	NS	0.38 U	10 U
2,4-Dichlorophenol	NS	NS	0.38 U	10 U
2,4-Dimethylphenol	NS	NS	0.38 U	10 U
2,4-Dinitrophenol	NS	NS	0.38 UJ	10 UJ
2,4-Dinitrotoluene	NS	NS	0.38 UJ	10 U
2,6-Dinitrotoluene	NS	NS	0.38 U	10 U
2-Chloronaphthalene	NS	NS	0.38 U	10 U
2-Chlorophenol	NS	NS	0.38 U	10 U
2-Methylnaphthalene	NS	NS	0.28 J	10 U
2-Methylphenol (O-Cresol)	0.33	100	0.38 U	10 U
2-Nitroaniline	NS	NS	0.38 U	10 U
2-Nitrophenol	NS	NS	0.38 UJ	10 U
3,3'-Dichlorobenzidine	NS	NS	0.38 U	10 U
3-Methylphenol/4-Methylphenol	NS	NS	0.38 U	10 U
3-Nitroaniline	NS	NS	0.38 U	10 U
4,6-Dinitro-2-Methylphenol	NS	NS	0.38 UJ	10 U
4-Bromophenyl Phenyl Ether	NS	NS	0.38 U	10 U
4-Chloro-3-Methylphenol	NS	NS	0.38 U	10 U
4-Chloroaniline	NS	NS	0.38 U	10 U
4-Chlorophenyl Phenyl Ether	NS	NS	0.38 U	10 U
4-Nitroaniline	NS	NS	0.38 U	10 U
4-Nitrophenol	NS	NS	0.38 U	10 U
Acenaphthene	20	100	0.63	10 U
Acenaphthylene	100	100	0.41	10 U
Acetophenone	NS	NS	0.38 U	10 U
Anthracene	100	100	1.7	10 U
Atrazine	NS	NS	0.38 U	10 U
Benzaldehyde	NS	NS	0.38 U	10 U
Benzo(a)Anthracene	1	1	**4.9 D**	10 U
Benzo(a)Pyrene	1	1	**4.1 D**	10 U
Benzo(b)Fluoranthene	1	1	**5.7 D**	10 U
Benzo(g,h,i)Perylene	100	100	2.1	10 U
Benzo(k)Fluoranthene	0.8	3.9	**1.8**	10 U
Benzyl Butyl Phthalate	NS	NS	0.38 U	10 U
Biphenyl (Diphenyl)	NS	NS	0.079 J	10 U
Bis(2-Chloroethoxy) Methane	NS	NS	0.38 U	10 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	NS	NS	0.38 U	10 U
Bis(2-Chloroisopropyl) Ether	NS	NS	0.38 U	10 U
Bis(2-Ethylhexyl) Phthalate	NS	NS	0.38 U	10 U
Caprolactam	NS	NS	0.38 U	10 U
Carbazole	NS	NS	0.63	10 U
Chrysene	1	3.9	**4.6 D**	10 U
Dibenz(a,h)Anthracene	0.33	0.33	**0.59**	10 U
Dibenzofuran	7	59	0.45	10 U
Diethyl Phthalate	NS	NS	0.38 U	10 U
Dimethyl Phthalate	NS	NS	0.23 J	10 U
Di-N-Butyl Phthalate	NS	NS	0.38 U	10 U
Di-N-Octylphthalate	NS	NS	0.38 U	10 U
Fluoranthene	100	100	11.1 D	10 U
Fluorene	30	100	0.8	10 U
Hexachlorobenzene	0.33	1.2	0.38 U	10 U
Hexachlorobutadiene	NS	NS	0.38 U	10 U
Hexachlorocyclopentadiene	NS	NS	0.38 U	10 UJ
Hexachloroethane	NS	NS	0.38 U	10 U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	**2.1**	10 U
Isophorone	NS	NS	0.38 U	10 U
Naphthalene	12	100	0.43	10 U
Nitrobenzene	NS	NS	0.38 U	10 U
N-Nitrosodi-N-Propylamine	NS	NS	0.38 U	10 U
N-Nitrosodiphenylamine	NS	NS	0.38 U	10 U
Pentachlorophenol	0.8	6.7	0.38 U	10 U
Phenanthrene	100	100	8 D	10 U
Phenol	0.33	100	0.14 J	10 U
Pyrene	100	100	8.7 D	10 U

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-1(0-2)-20171128 11/28/2017 1 mg/kg	SB-1(6-8)-20171128 11/28/2017 1 mg/kg	SB-2(0-2)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	9,390	5,910	6,250
Antimony	**NS**	**NS**	2.41 U	2.37 U	2.3 R
Arsenic	**13**	**16**	3.83	3.71	2.27
Barium	**350**	**400**	147	133	25.4
Beryllium	**7.2**	**72**	0.276 J	0.216 J	0.207 J
Cadmium	**2.5**	**4.3**	0.426	0.486	0.276 U
Calcium	**NS**	**NS**	5,790	19,200	1,600
Chromium, Total	**30**	**180**	15.1	9.43	13
Cobalt	**NS**	**NS**	7.34	5.04	5.82
Copper	**50**	**270**	22.1	26.2	10.01 JH
Iron	**NS**	**NS**	17,700	18,400	17,900
Lead	**63**	**400**	**285**	**300**	7.87
Magnesium	**NS**	**NS**	2380	6390	1410
Manganese	**1,600**	**2,000**	282	455	323
Mercury	**0.18**	**0.81**	0.124	**0.364**	0.014 U
Nickel	**30**	**310**	18	11.8	10.91
Potassium	**NS**	**NS**	1250	651	436
Selenium	**3.9**	**180**	**5.82**	**4.55**	**5.88**
Silver	**2**	**180**	0.482 U	0.474 U	0.46 U
Sodium	**NS**	**NS**	84.2 J	104	31.6 JL
Thallium	**NS**	**NS**	0.95 J	0.971 J	0.986 J
Vanadium	**NS**	**NS**	24.3	16.2	18.6
Zinc	**109**	**10,000**	**197**	**184**	23.2

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-2(10-12)-20171127 11/27/2017 1 mg/kg	SB-3(0-2)-20171127 11/27/2017 1 mg/kg	SB-3(10-12)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	5,160	6,330	5,840
Antimony	**NS**	**NS**	2.29 R	2.31 R	2.37 R
Arsenic	**13**	**16**	2.65	3.39	2.88
Barium	**350**	**400**	28.5	102	94.1
Beryllium	**7.2**	**72**	0.191 J	0.226 J	0.211 J
Cadmium	**2.5**	**4.3**	0.135 J	0.498	0.338
Calcium	**NS**	**NS**	3,340	10,800	8,850
Chromium, Total	**30**	**180**	15.7	14.1	10.75
Cobalt	**NS**	**NS**	5.29	6.49	5.35
Copper	**50**	**270**	16.1 JH	16.8 JH	12.1 JH
Iron	**NS**	**NS**	18,700	18,300	17,400
Lead	**63**	**400**	10.68	**90.7**	**110**
Magnesium	**NS**	**NS**	1570	2930	3010
Manganese	**1,600**	**2,000**	291	304	284
Mercury	**0.18**	**0.81**	0.006 J	0.121	0.104
Nickel	**30**	**310**	12.5	13.8	12.1
Potassium	**NS**	**NS**	515	1280	709
Selenium	**3.9**	**180**	**6**	**4.96**	**4.92**
Silver	**2**	**180**	0.457 U	0.462 U	0.475 U
Sodium	**NS**	**NS**	54.8 JL	85.2 JL	56.7 JL
Thallium	**NS**	**NS**	0.935 J	1.12 J	0.851 J
Vanadium	**NS**	**NS**	18	22.3	20.6
Zinc	**109**	**10,000**	53	81.2	67.3

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-4(0-2)-20171128 11/28/2017 1 mg/kg	SB-4(10-12)-20171128 11/28/2017 1 mg/kg	SB-5(0-2)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	6,100	2,910	9,100
Antimony	**NS**	**NS**	2.29 U	0.505 J	0.556 R
Arsenic	**13**	**16**	2.72	1.8	4.07
Barium	**350**	**400**	60.4	27.4	250
Beryllium	**7.2**	**72**	0.226 J	0.124 J	0.225 J
Cadmium	**2.5**	**4.3**	0.102 J	0.263 U	0.801
Calcium	**NS**	**NS**	7,850	894	11,000
Chromium, Total	**30**	**180**	13.6	8.21	20.9
Cobalt	**NS**	**NS**	7.19	6.12	10.29
Copper	**50**	**270**	17.6	9.59	26.7 JH
Iron	**NS**	**NS**	19,300	24,000	22,800
Lead	**63**	**400**	**69.9**	8.53	**104**
Magnesium	**NS**	**NS**	1790	1450	4460
Manganese	**1,600**	**2,000**	290	402	315
Mercury	**0.18**	**0.81**	0.16	0.013 U	0.14
Nickel	**30**	**310**	14.6	13.8	26
Potassium	**NS**	**NS**	988	635	3560
Selenium	**3.9**	**180**	**6.14**	**8.39**	**6.52**
Silver	**2**	**180**	0.458 U	0.439 U	0.474 U
Sodium	**NS**	**NS**	80.6 J	45.4 J	126 JL
Thallium	**NS**	**NS**	0.987 J	1.22 J	1.79 J
Vanadium	**NS**	**NS**	24.1	16.4	45.8
Zinc	**109**	**10,000**	79.2	26	**210**

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-5(10-12)-20171127 11/27/2017 1 mg/kg	SB-6(0-2)-20171128 11/28/2017 1 mg/kg	SB-6(5-7)-20171128 11/28/2017 5 mg/kg
Aluminum	**NS**	**NS**	3,000	9,910	9,140
Antimony	**NS**	**NS**	2.19 R	0.577 J	0.671 J
Arsenic	**13**	**16**	1.59	4.16	5.28
Barium	**350**	**400**	26.4	195	**542**
Beryllium	**7.2**	**72**	0.133 J	0.378	0.317
Cadmium	**2.5**	**4.3**	0.263 U	0.485	0.651
Calcium	**NS**	**NS**	1,200	12,300	30,100
Chromium, Total	**30**	**180**	8.42	16.9	16.1
Cobalt	**NS**	**NS**	4.44	9.23	7.96
Copper	**50**	**270**	7.86 JH	25.7	20.7
Iron	**NS**	**NS**	15,500	20,600	21,500
Lead	**63**	**400**	9.4	**184**	**317**
Magnesium	**NS**	**NS**	1400	4430	3,300
Manganese	**1,600**	**2,000**	330	351	337
Mercury	**0.18**	**0.81**	0.012 U	0.132	**1.83 D**
Nickel	**30**	**310**	13.3	29.1	18.5
Potassium	**NS**	**NS**	494	2780	1080
Selenium	**3.9**	**180**	**5.2**	**5.99**	**4.2**
Silver	**2**	**180**	0.438 U	0.466 U	0.493 U
Sodium	**NS**	**NS**	22.3 JL	155	221
Thallium	**NS**	**NS**	0.842 J	1.37 J	1.12 J
Vanadium	**NS**	**NS**	12.8	30.3	24.1
Zinc	**109**	**10,000**	32.6	**192**	**342**

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-7(0-2)-20171127 11/27/2017 1 mg/kg	SB-7(4-6)-20171127 11/27/2017 1 mg/kg	SB-8(0-2)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	6,870	6,150	7,450
Antimony	**NS**	**NS**	0.508 R	2.23 R	0.849 R
Arsenic	**13**	**16**	2.98	3.05	6.28
Barium	**350**	**400**	160	64.5	**1,790**
Beryllium	**7.2**	**72**	0.224 J	0.21 J	0.25 J
Cadmium	**2.5**	**4.3**	1.14	0.165 J	1.4
Calcium	**NS**	**NS**	4,380	1,070	25,400
Chromium, Total	**30**	**180**	13.5	18.2	16.6
Cobalt	**NS**	**NS**	6.45	6.6	6.67
Copper	**50**	**270**	15.3 JH	11.4 JH	22.4 JH
Iron	**NS**	**NS**	20,100	22,500	21,100
Lead	**63**	**400**	**221**	47.8	**1,500**
Magnesium	**NS**	**NS**	1,910	1,640	3,230
Manganese	**1,600**	**2,000**	326	371	273
Mercury	**0.18**	**0.81**	0.073	0.022	**0.195**
Nickel	**30**	**310**	14	13.3	15.4
Potassium	**NS**	**NS**	588	666	2050
Selenium	**3.9**	**180**	**6.43**	**7.75**	**4.34**
Silver	**2**	**180**	0.437 U	0.446 U	0.46 U
Sodium	**NS**	**NS**	103 JL	74.9 JL	342 JL
Thallium	**NS**	**NS**	1.08 J	1.21 J	1.32 J
Vanadium	**NS**	**NS**	21.8	20.5	28.1
Zinc	**109**	**10,000**	**124**	38.9	**787**

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-8(10-12)-20171127 11/27/2017 1 mg/kg	SB-9(0-2)-20171127 11/27/2017 1 mg/kg	SB-9(8-10)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	2,830	6,780	8,780
Antimony	**NS**	**NS**	2.16 R	1.07 R	2.58 R
Arsenic	**13**	**16**	1.43	7.68	2.74
Barium	**350**	**400**	17.1	**373**	36.5
Beryllium	**7.2**	**72**	0.089 J	0.217 J	0.27 J
Cadmium	**2.5**	**4.3**	0.26 U	**8.38**	0.09 J
Calcium	**NS**	**NS**	610	16,500	1,080
Chromium, Total	**30**	**180**	7.03	16.1	20.6
Cobalt	**NS**	**NS**	2.94	6.63	9.33
Copper	**50**	**270**	5.74 JH	37.8 JH	14.5 JH
Iron	**NS**	**NS**	9,590	24,400	23,500
Lead	**63**	**400**	4.06	**909**	10.81
Magnesium	**NS**	**NS**	1,140	2,240	2,530
Manganese	**1,600**	**2,000**	234	304	368
Mercury	**0.18**	**0.81**	0.012 U	**0.513**	0.011 J
Nickel	**30**	**310**	6.56	16.9	14.4
Potassium	**NS**	**NS**	271	833	982
Selenium	**3.9**	**180**	2.97	**6.7**	**7.77**
Silver	**2**	**180**	0.433 U	0.471 U	0.516 U
Sodium	**NS**	**NS**	28.6 JL	207 JL	28.7 JL
Thallium	**NS**	**NS**	0.471 J	1.23 J	1.39 J
Vanadium	**NS**	**NS**	10.94	23.6	29.1
Zinc	**109**	**10,000**	12.3	**1,680**	39.4

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(0-2)-20171127 11/27/2017 1 mg/kg	SB-X(0-2)-20171127 11/27/2017 1 mg/kg	SB-10(8-10)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	6,190	5,830	4,510
Antimony	**NS**	**NS**	2.08 R	0.758 R	2.26 R
Arsenic	**13**	**16**	4.03	3.75	2.9
Barium	**350**	**400**	137	106	52.4
Beryllium	**7.2**	**72**	0.233 J	0.246 J	0.183 J
Cadmium	**2.5**	**4.3**	0.85	0.567	0.25 J
Calcium	**NS**	**NS**	41,100	18,500	2,430
Chromium, Total	**30**	**180**	26.7	16	11.7
Cobalt	**NS**	**NS**	4.95	5.38	7.04
Copper	**50**	**270**	41.2 JH	25.5 JH	16 JH
Iron	**NS**	**NS**	13,100	15,300	25,600
Lead	**63**	**400**	**905**	**298**	37.5
Magnesium	**NS**	**NS**	3,910	2,640	1,470
Manganese	**1,600**	**2,000**	217	326	415
Mercury	**0.18**	**0.81**	**0.647**	**0.377**	0.016
Nickel	**30**	**310**	25.5	15.1	12.6
Potassium	**NS**	**NS**	641	626	751
Selenium	**3.9**	**180**	0.981 U	3.06	**8.39**
Silver	**2**	**180**	0.847	0.484 U	0.451 U
Sodium	**NS**	**NS**	120 JL	99.5 JL	111 JL
Thallium	**NS**	**NS**	0.767 J	0.787 J	1.37 J
Vanadium	**NS**	**NS**	19	18.9	18.7
Zinc	**109**	**10,000**	**203**	**147**	56.4

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-11(0-2)-20171129 11/29/2017 1 mg/kg	SB-11(6-8)-20171129 11/29/2017 1 mg/kg	SB-12(0-2)-20171127 11/27/2017 1 mg/kg
Aluminum	**NS**	**NS**	5,910	5,730	7,210
Antimony	**NS**	**NS**	2.28 U	2.24 J	1.23 R
Arsenic	**13**	**16**	3.28	3.92	6.03
Barium	**350**	**400**	68.5	112	346
Beryllium	**7.2**	**72**	0.196 J	0.183 J	0.245 J
Cadmium	**2.5**	**4.3**	0.274 U	**2.8**	1.02
Calcium	**NS**	**NS**	14,100	12,000	11,000
Chromium, Total	**30**	**180**	11.4	14.5	16.9
Cobalt	**NS**	**NS**	4.91	5.66	7.12
Copper	**50**	**270**	17.4	25.2	43.2 JH
Iron	**NS**	**NS**	15,800	17,900	23,200
Lead	**63**	**400**	**78.8**	**277**	**595**
Magnesium	**NS**	**NS**	3,880	3,870	2,500
Manganese	**1,600**	**2,000**	248	237	324
Mercury	**0.18**	**0.81**	0.074	0.129	**0.404**
Nickel	**30**	**310**	12.7	13.8	16.7
Potassium	**NS**	**NS**	767	740	1200
Selenium	**3.9**	**180**	3.71	**4.58**	**6.89**
Silver	**2**	**180**	0.457 U	0.483 U	0.478 U
Sodium	**NS**	**NS**	125	165	219 JL
Thallium	**NS**	**NS**	0.77 J	0.921 J	1.36 J
Vanadium	**NS**	**NS**	20.5	25.8	25.3
Zinc	**109**	**10,000**	77.8	**897**	**363**

Table 3
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-12(10-12)-20171127 11/27/2017 1 mg/kg	FB-1-20171128 11/28/2017 1 ug/l
Aluminum	**NS**	**NS**	6,840	50 U
Antimony	**NS**	**NS**	0.803 R	25 U
Arsenic	**13**	**16**	7.82	10 U
Barium	**350**	**400**	**380**	50 U
Beryllium	**7.2**	**72**	0.24 J	3 U
Cadmium	**2.5**	**4.3**	0.905	3 U
Calcium	**NS**	**NS**	25,000	1,000 U
Chromium, Total	**30**	**180**	13.1	5 U
Cobalt	**NS**	**NS**	4.67	15 U
Copper	**50**	**270**	18.6 JH	10 U
Iron	**NS**	**NS**	18,600	50 U
Lead	**63**	**400**	**386**	6 U
Magnesium	**NS**	**NS**	2,380	1,000 U
Manganese	**1,600**	**2,000**	204	10 U
Mercury	**0.18**	**0.81**	0.17	0.2 U
Nickel	**30**	**310**	13.1	20 U
Potassium	**NS**	**NS**	648	1000 U
Selenium	**3.9**	**180**	3.56	10 U
Silver	**2**	**180**	0.477 U	5 U
Sodium	**NS**	**NS**	547 JL	1000 U
Thallium	**NS**	**NS**	1.01 J	20 U
Vanadium	**NS**	**NS**	33.9	20 U
Zinc	**109**	**10,000**	**525**	20 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-1(0-2)-20171128 11/28/2017 1 mg/kg	SB-1(6-8)-20171128 11/28/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	0.0026 J	0.0007439 J
4,4'-DDE	**0.0033**	**8.9**	0.002	0.0019 J
4,4'-DDT	**0.0033**	**7.9**	0.0031 J	0.0024
Aldrin	**0.005**	**0.097**	0.0019 U	0.0019 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0019 U	0.0019 U
Alpha Endosulfan	**NS**	**NS**	0.0019 U	0.0019 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0019 U	0.0019 U
Beta Endosulfan	**NS**	**NS**	0.0019 U	0.0019 U
cis-Chlordane	**0.094**	**4.2**	0.0028 J	0.0019 J
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0019 U	0.0019 U
Dieldrin	**0.005**	**0.2**	0.0019 U	0.0019 U
Endosulfan Sulfate	**NS**	**NS**	0.0019 U	0.0019 U
Endrin	**0.014**	**11**	0.0019 U	0.0019 U
Endrin Aldehyde	**NS**	**NS**	0.0019 U	0.0019 U
Endrin Ketone	**NS**	**NS**	0.0019 U	0.0019 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0019 U	0.0019 U
Heptachlor	**0.042**	**2.1**	0.0019 U	0.0019 U
Heptachlor Epoxide	**NS**	**NS**	0.0019 U	0.0019 U
Methoxychlor	**NS**	**NS**	0.0019 U	0.0019 U
Toxaphene	**NS**	**NS**	0.0194 U	0.0187 U
trans-Chlordane	**NS**	**NS**	0.001 J	0.0006083 J

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-2(0-2)-20171127 11/27/2017 1 mg/kg	SB-2(10-12)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	0.0033	13	0.0018 U	0.0018 U
4,4'-DDE	0.0033	8.9	0.0018 U	0.0018 U
4,4'-DDT	0.0033	7.9	0.0018 U	0.0004416 J
Aldrin	0.005	0.097	0.0018 U	0.0018 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0018 U	0.0018 U
Alpha Endosulfan	NS	NS	0.0018 U	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0018 U	0.0018 U
Beta Endosulfan	NS	NS	0.0018 U	0.0018 U
cis-Chlordane	0.094	4.2	0.0018 U	0.0018 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0018 U	0.0018 U
Dieldrin	0.005	0.2	0.0018 U	0.0018 U
Endosulfan Sulfate	NS	NS	0.0018 U	0.0018 U
Endrin	0.014	11	0.0018 U	0.0018 U
Endrin Aldehyde	NS	NS	0.0018 U	0.0018 U
Endrin Ketone	NS	NS	0.0018 U	0.0018 U
Gamma Bhc (Lindane)	0.1	1.3	0.0018 U	0.0018 U
Heptachlor	0.042	2.1	0.0018 U	0.0018 U
Heptachlor Epoxide	NS	NS	0.0018 U	0.0018 U
Methoxychlor	NS	NS	0.0018 U	0.0018 U
Toxaphene	NS	NS	0.0184 U	0.0182 U
trans-Chlordane	NS	NS	0.0018 U	0.0018 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-3(0-2)-20171127 11/27/2017 1 mg/kg	SB-3(10-12)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	0.0033	13	0.0019 U	0.0015 J
4,4'-DDE	0.0033	8.9	0.0019 U	0.0023
4,4'-DDT	0.0033	7.9	0.0033 JH	**0.01 J**
Aldrin	0.005	0.097	0.0019 U	0.0019 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0019 U	0.0019 U
Alpha Endosulfan	NS	NS	0.0019 U	0.0019 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0019 U	0.0019 U
Beta Endosulfan	NS	NS	0.0019 U	0.0019 U
cis-Chlordane	0.094	4.2	0.0019 U	0.0019 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0019 U	0.0019 U
Dieldrin	0.005	0.2	0.0019 U	0.0019 U
Endosulfan Sulfate	NS	NS	0.0019 U	0.0019 U
Endrin	0.014	11	0.0019 U	0.0019 U
Endrin Aldehyde	NS	NS	0.0019 U	0.0019 U
Endrin Ketone	NS	NS	0.0019 U	0.0019 U
Gamma Bhc (Lindane)	0.1	1.3	0.0019 U	0.0019 U
Heptachlor	0.042	2.1	0.0019 U	0.0019 U
Heptachlor Epoxide	NS	NS	0.0019 U	0.0019 U
Methoxychlor	NS	NS	0.0019 U	0.0019 U
Toxaphene	NS	NS	0.0187 U	0.0186 U
trans-Chlordane	NS	NS	0.0019 U	0.0019 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-4(0-2)-20171128 11/28/2017 1 mg/kg	SB-4(10-12)-20171128 11/28/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	0.0019 U	0.0018 U
4,4'-DDE	**0.0033**	**8.9**	0.0012 J	0.0018 U
4,4'-DDT	**0.0033**	**7.9**	0.0022	0.0018 U
Aldrin	**0.005**	**0.097**	0.0019 U	0.0018 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0019 U	0.0018 U
Alpha Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0019 U	0.0018 U
Beta Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
cis-Chlordane	**0.094**	**4.2**	0.0009677 JN	0.0018 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0019 U	0.0018 U
Dieldrin	**0.005**	**0.2**	0.0019 U	0.0018 U
Endosulfan Sulfate	**NS**	**NS**	0.0019 U	0.0018 U
Endrin	**0.014**	**11**	0.0019 U	0.0018 U
Endrin Aldehyde	**NS**	**NS**	0.0019 U	0.0018 U
Endrin Ketone	**NS**	**NS**	0.0019 U	0.0018 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0019 U	0.0018 U
Heptachlor	**0.042**	**2.1**	0.0019 U	0.0018 U
Heptachlor Epoxide	**NS**	**NS**	0.0019 U	0.0018 U
Methoxychlor	**NS**	**NS**	0.0019 U	0.0018 U
Toxaphene	**NS**	**NS**	0.0188 U	0.0176 U
trans-Chlordane	**NS**	**NS**	0.0019 U	0.0018 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-5(0-2)-20171127 11/27/2017 1 mg/kg	SB-5(10-12)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	0.0019 U	0.0018 U
4,4'-DDE	**0.0033**	**8.9**	**0.004 J**	0.0007575 J
4,4'-DDT	**0.0033**	**7.9**	**0.0074**	0.0026
Aldrin	**0.005**	**0.097**	0.0019 U	0.0018 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0019 U	0.0018 U
Alpha Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0019 U	0.0018 U
Beta Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
cis-Chlordane	**0.094**	**4.2**	0.0019 U	0.0018 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0019 U	0.0018 U
Dieldrin	**0.005**	**0.2**	0.0019 U	0.0018 U
Endosulfan Sulfate	**NS**	**NS**	0.0019 U	0.0018 U
Endrin	**0.014**	**11**	0.0019 U	0.0018 U
Endrin Aldehyde	**NS**	**NS**	0.0019 U	0.0018 U
Endrin Ketone	**NS**	**NS**	0.0019 U	0.0018 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0019 U	0.0018 U
Heptachlor	**0.042**	**2.1**	0.0019 U	0.0018 U
Heptachlor Epoxide	**NS**	**NS**	0.0019 U	0.0018 U
Methoxychlor	**NS**	**NS**	0.0019 U	0.0018 U
Toxaphene	**NS**	**NS**	0.019 U	0.0178 U
trans-Chlordane	**NS**	**NS**	0.0019 U	0.0018 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-6(0-2)-20171128 11/28/2017 1 mg/kg	SB-6(5-7)-20171128 11/28/2017 1 mg/kg
4,4'-DDD	0.0033	13	0.0018 JH	0.0031 J
4,4'-DDE	0.0033	8.9	**0.0055 JH**	**0.0203**
4,4'-DDT	0.0033	7.9	**0.0113 JH**	**0.0373**
Aldrin	0.005	0.097	0.0018 U	0.002 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0018 U	0.002 U
Alpha Endosulfan	NS	NS	0.0018 U	0.002 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0018 U	0.002 U
Beta Endosulfan	NS	NS	0.0018 U	0.002 U
cis-Chlordane	0.094	4.2	0.0033 J	0.004 J
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0018 U	0.002 U
Dieldrin	0.005	0.2	0.0018 U	0.002 U
Endosulfan Sulfate	NS	NS	0.0018 U	0.002 U
Endrin	0.014	11	0.0018 U	0.002 U
Endrin Aldehyde	NS	NS	0.0018 U	0.002 U
Endrin Ketone	NS	NS	0.0018 U	0.002 U
Gamma Bhc (Lindane)	0.1	1.3	0.0018 U	0.002 U
Heptachlor	0.042	2.1	0.0018 U	0.002 U
Heptachlor Epoxide	NS	NS	0.0018 U	0.002 U
Methoxychlor	NS	NS	0.0018 U	0.002 U
Toxaphene	NS	NS	0.0185 U	0.0196 U
trans-Chlordane	NS	NS	0.0018 U	0.002 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-7(0-2)-20171127 11/27/2017 2 mg/kg	SB-7(4-6)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	**0.0111**	0.0018 U
4,4'-DDE	**0.0033**	**8.9**	**0.0154 J**	0.0007291 J
4,4'-DDT	**0.0033**	**7.9**	**0.0608 D**	0.002
Aldrin	**0.005**	**0.097**	0.0018 U	0.0018 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0018 U	0.0018 U
Alpha Endosulfan	**NS**	**NS**	0.0018 U	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0018 U	0.0018 U
Beta Endosulfan	**NS**	**NS**	0.0018 U	0.0018 U
cis-Chlordane	**0.094**	**4.2**	0.0036 J	0.0018 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0018 U	0.0018 U
Dieldrin	**0.005**	**0.2**	0.0018 U	0.0018 U
Endosulfan Sulfate	**NS**	**NS**	0.0018 U	0.0018 U
Endrin	**0.014**	**11**	0.0018 U	0.0018 U
Endrin Aldehyde	**NS**	**NS**	0.0018 U	0.0018 U
Endrin Ketone	**NS**	**NS**	0.0018 U	0.0018 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0018 U	0.0018 U
Heptachlor	**0.042**	**2.1**	0.0018 U	0.0018 U
Heptachlor Epoxide	**NS**	**NS**	0.0018 U	0.0018 U
Methoxychlor	**NS**	**NS**	0.0018 U	0.0018 U
Toxaphene	**NS**	**NS**	0.0179 U	0.0175 U
trans-Chlordane	**NS**	**NS**	0.0033 JN	0.0018 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-8(0-2)-20171127 11/27/2017 1 mg/kg	SB-8(10-12)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	0.0033	13	0.0019 U	0.0017 U
4,4'-DDE	0.0033	8.9	**0.013 J**	0.0017 U
4,4'-DDT	0.0033	7.9	**0.0284**	0.0017 U
Aldrin	0.005	0.097	0.0019 U	0.0017 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0019 U	0.0017 U
Alpha Endosulfan	NS	NS	0.0019 U	0.0017 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0019 U	0.0017 U
Beta Endosulfan	NS	NS	0.0019 U	0.0017 U
cis-Chlordane	0.094	4.2	0.0019 U	0.0017 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0019 U	0.0017 U
Dieldrin	0.005	0.2	0.0019 U	0.0017 U
Endosulfan Sulfate	NS	NS	0.0019 U	0.0017 U
Endrin	0.014	11	0.0019 U	0.0017 U
Endrin Aldehyde	NS	NS	0.0019 U	0.0017 U
Endrin Ketone	NS	NS	0.0019 U	0.0017 U
Gamma Bhc (Lindane)	0.1	1.3	0.0019 U	0.0017 U
Heptachlor	0.042	2.1	0.0019 U	0.0017 U
Heptachlor Epoxide	NS	NS	0.0019 U	0.0017 U
Methoxychlor	NS	NS	0.0019 U	0.0017 U
Toxaphene	NS	NS	0.0191 U	0.0173 U
trans-Chlordane	NS	NS	0.0019 U	0.0017 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-9(0-2)-20171127 11/27/2017 1 mg/kg	SB-9(8-10)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	0.0033	13	0.0019 U	0.0021 U
4,4'-DDE	0.0033	8.9	**0.0081 J**	0.0003986 J
4,4'-DDT	0.0033	7.9	**0.0238**	0.0014 J
Aldrin	0.005	0.097	0.0019 U	0.0021 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0019 U	0.0021 U
Alpha Endosulfan	NS	NS	0.0019 U	0.0021 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0019 U	0.0021 U
Beta Endosulfan	NS	NS	0.0019 U	0.0021 U
cis-Chlordane	0.094	4.2	0.0055 JN	0.0021 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0019 U	0.0021 U
Dieldrin	0.005	0.2	0.0019 U	0.0021 U
Endosulfan Sulfate	NS	NS	0.0019 U	0.0021 U
Endrin	0.014	11	0.0019 U	0.0021 U
Endrin Aldehyde	NS	NS	0.0019 U	0.0021 U
Endrin Ketone	NS	NS	0.0019 U	0.0021 U
Gamma Bhc (Lindane)	0.1	1.3	0.0019 U	0.0021 U
Heptachlor	0.042	2.1	0.0019 U	0.0021 U
Heptachlor Epoxide	NS	NS	0.0019 U	0.0021 U
Methoxychlor	NS	NS	0.0019 U	0.0021 U
Toxaphene	NS	NS	0.019 U	0.021 U
trans-Chlordane	NS	NS	0.002 J	0.0021 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(0-2)-20171127 11/27/2017 1 mg/kg	SB-X(0-2)-20171127 11/27/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	0.0019 U	0.0031 U
4,4'-DDE	**0.0033**	**8.9**	0.0017 J	0.002 U
4,4'-DDT	**0.0033**	**7.9**	**0.0058 JL**	**0.0118 J**
Aldrin	**0.005**	**0.097**	0.0019 U	0.002 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0019 U	0.002 U
Alpha Endosulfan	**NS**	**NS**	0.0019 U	0.002 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0019 U	0.002 U
Beta Endosulfan	**NS**	**NS**	0.0019 U	0.002 U
cis-Chlordane	**0.094**	**4.2**	0.0019 U	0.002 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0019 U	0.002 U
Dieldrin	**0.005**	**0.2**	0.0019 U	0.002 U
Endosulfan Sulfate	**NS**	**NS**	0.0019 U	0.002 U
Endrin	**0.014**	**11**	0.0019 U	0.002 U
Endrin Aldehyde	**NS**	**NS**	0.0019 U	0.002 U
Endrin Ketone	**NS**	**NS**	0.0019 U	0.002 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0019 U	0.002 U
Heptachlor	**0.042**	**2.1**	0.0019 U	0.002 U
Heptachlor Epoxide	**NS**	**NS**	0.0019 U	0.002 U
Methoxychlor	**NS**	**NS**	0.0019 U	0.002 U
Toxaphene	**NS**	**NS**	0.0193 U	0.0198 U
trans-Chlordane	**NS**	**NS**	0.0019 U	0.002 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(8-10)-20171127 11/27/2017 1 mg/kg	SB-11(0-2)-20171129 11/29/2017 1 mg/kg
4,4'-DDD	**0.0033**	**13**	0.0019 U	0.0018 U
4,4'-DDE	**0.0033**	**8.9**	0.0016 J	0.0011 J
4,4'-DDT	**0.0033**	**7.9**	0.0028	0.0024
Aldrin	**0.005**	**0.097**	0.0019 U	0.0018 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.0019 U	0.0018 U
Alpha Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.0019 U	0.0018 U
Beta Endosulfan	**NS**	**NS**	0.0019 U	0.0018 U
cis-Chlordane	**0.094**	**4.2**	0.0019 U	0.0018 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.0019 U	0.0018 U
Dieldrin	**0.005**	**0.2**	0.0019 U	0.0018 U
Endosulfan Sulfate	**NS**	**NS**	0.0019 U	0.0018 U
Endrin	**0.014**	**11**	0.0019 U	0.0018 U
Endrin Aldehyde	**NS**	**NS**	0.0019 U	0.0018 U
Endrin Ketone	**NS**	**NS**	0.0019 U	0.0018 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.0019 U	0.0018 U
Heptachlor	**0.042**	**2.1**	0.0019 U	0.0018 U
Heptachlor Epoxide	**NS**	**NS**	0.0019 U	0.0018 U
Methoxychlor	**NS**	**NS**	0.0019 U	0.0018 U
Toxaphene	**NS**	**NS**	0.0185 U	0.0184 U
trans-Chlordane	**NS**	**NS**	0.0019 U	0.0018 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-11(6-8)-20171129 11/29/2017 1 mg/kg	SB-12(0-2)-20171127 11/27/2017 5 mg/kg And mg/kg
4,4'-DDD	0.0033	13	0.0012 J	0.0019 U
4,4'-DDE	0.0033	8.9	**0.0038**	**0.0318 JD**
4,4'-DDT	0.0033	7.9	**0.0108**	**0.0798 D**
Aldrin	0.005	0.097	0.0019 U	0.0019 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.02	0.480	0.0019 U	0.0019 U
Alpha Endosulfan	NS	NS	0.0019 U	0.0019 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.360	0.0019 U	0.0019 U
Beta Endosulfan	NS	NS	0.0019 U	0.0019 U
cis-Chlordane	0.094	4.2	0.0019 U	0.0019 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	100	0.0019 U	0.0019 U
Dieldrin	0.005	0.2	0.0019 U	0.0019 U
Endosulfan Sulfate	NS	NS	0.0019 U	0.0019 U
Endrin	0.014	11	0.0019 U	0.0019 U
Endrin Aldehyde	NS	NS	0.0019 U	0.0019 U
Endrin Ketone	NS	NS	0.0019 U	0.0019 U
Gamma Bhc (Lindane)	0.1	1.3	0.0019 U	0.0019 U
Heptachlor	0.042	2.1	0.0019 U	0.0019 U
Heptachlor Epoxide	NS	NS	0.0019 U	0.0019 U
Methoxychlor	NS	NS	0.0019 U	0.0019 U
Toxaphene	NS	NS	0.019 U	0.0192 U
trans-Chlordane	NS	NS	0.0019 U	0.0019 U

Table 4
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-12(10-12)-20171127 11/27/2017 5 mg/kg	FB-1-20171128 11/28/2017 1 ug/l
4,4'-DDD	**0.0033**	**13**	**0.0065**	0.05 U
4,4'-DDE	**0.0033**	**8.9**	0.0007962 J	0.05 U
4,4'-DDT	**0.0033**	**7.9**	0.11 D	0.05 U
Aldrin	**0.005**	**0.097**	0.002 U	0.05 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.02**	**0.480**	0.002 U	0.05 U
Alpha Endosulfan	**NS**	**NS**	0.002 U	0.05 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.036**	**0.360**	0.002 U	0.05 U
Beta Endosulfan	**NS**	**NS**	0.002 U	0.05 U
cis-Chlordane	**0.094**	**4.2**	0.002 U	0.05 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	**100**	0.002 U	0.05 U
Dieldrin	**0.005**	**0.2**	0.002 U	0.05 U
Endosulfan Sulfate	**NS**	**NS**	0.002 U	0.05 U
Endrin	**0.014**	**11**	0.002 U	0.05 U
Endrin Aldehyde	**NS**	**NS**	0.002 U	0.05 U
Endrin Ketone	**NS**	**NS**	0.002 U	0.05 U
Gamma Bhc (Lindane)	**0.1**	**1.3**	0.002 U	0.05 U
Heptachlor	**0.042**	**2.1**	0.002 U	0.05 U
Heptachlor Epoxide	**NS**	**NS**	0.002 U	0.05 U
Methoxychlor	**NS**	**NS**	0.002 U	0.05 U
Toxaphene	**NS**	**NS**	0.0196 U	0.5 U
trans-Chlordane	**NS**	**NS**	0.002 U	0.05 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-1(0-2)-20171128 11/28/2017 1 mg/kg	SB-1(6-8)-20171128 11/28/2017 1 mg/kg	SB-2(0-2)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0194 U	0.0187 U	0.0184 U
Total PCBs	**0.1**	**1**	0.0194 U	0.0187 U	0.0184 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-2(10-12)-20171127 11/27/2017 1 mg/kg	SB-3(0-2)-20171127 11/27/2017 1 mg/kg	SB-3(10-12)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0182 U	0.0187 U	0.0186 U
Total PCBs	**0.1**	**1**	0.0182 U	0.0187 U	0.0186 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-4(0-2)-20171128 11/28/2017 1 mg/kg	SB-4(10-12)-20171128 11/28/2017 1 mg/kg	SB-5(0-2)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0187 U	0.0176 U	0.019 U
Total PCBs	**0.1**	**1**	0.0187 U	0.0176 U	0.019 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-5(10-12)-20171127 11/27/2017 1 mg/kg	SB-6(0-2)-20171128 11/28/2017 1 mg/kg	SB-6(5-7)-20171128 11/28/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0178 U	0.0185 U	0.0196 U
Total PCBs	**0.1**	**1**	0.0178 U	0.0185 U	0.0196 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-7(0-2)-20171127 11/27/2017 1 mg/kg	SB-7(4-6)-20171127 11/27/2017 1 mg/kg	SB-8(0-2)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0179 U	0.0175 U	0.0191 U
Total PCBs	**0.1**	**1**	0.0179 U	0.0175 U	0.0191 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-8(10-12)-20171127 11/27/2017 1 mg/kg	SB-9(0-2)-20171127 11/27/2017 1 mg/kg	SB-9(8-10)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1221 (Aroclor 1221)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1232 (Aroclor 1232)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1242 (Aroclor 1242)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1248 (Aroclor 1248)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1254 (Aroclor 1254)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1260 (Aroclor 1260)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1262 (Aroclor 1262)	NS	NS	0.0173 U	0.019 U	0.021 UJ
PCB-1268 (Aroclor 1268)	NS	NS	0.0173 U	0.019 U	0.021 UJ
Total PCBs	0.1	1	0.0173 U	0.019 U	0.021 UJ

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-10(0-2)-20171127 11/27/2017 1 mg/kg	SB-X(0-2)-20171127 11/27/2017 1 mg/kg	SB-10(8-10)-20171127 11/27/2017 1 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0193 U	0.0198 UJ	0.0185 U
Total PCBs	**0.1**	**1**	0.0193 U	0.0198 UJ	0.0185 U

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-11(0-2)-20171129 11/29/2017 1 mg/kg	SB-11(6-8)-20171129 11/29/2017 1 mg/kg	SB-12(0-2)-20171127 11/27/2017 4 mg/kg
PCB-1016 (Aroclor 1016)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1221 (Aroclor 1221)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1232 (Aroclor 1232)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1242 (Aroclor 1242)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1248 (Aroclor 1248)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1254 (Aroclor 1254)	**NS**	**NS**	0.0184 U	0.019 UJ	0.87 D
PCB-1260 (Aroclor 1260)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1262 (Aroclor 1262)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
PCB-1268 (Aroclor 1268)	**NS**	**NS**	0.0184 U	0.019 UJ	0.0192 U
Total PCBs	**0.1**	**1**	0.0184 U	0.019 UJ	**0.87 D**

Table 5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC UUSCOs mg/kg	NYSDEC RRSCOs mg/kg	SB-12(10-12)-20171127 11/27/2017 1 mg/kg	FB-1-20171128 11/28/2017 1 ug/l
PCB-1016 (Aroclor 1016)	NS	NS	0.0196 U	0.5 U
PCB-1221 (Aroclor 1221)	NS	NS	0.0196 U	0.5 U
PCB-1232 (Aroclor 1232)	NS	NS	0.0196 U	0.5 U
PCB-1242 (Aroclor 1242)	NS	NS	0.0196 U	0.5 U
PCB-1248 (Aroclor 1248)	NS	NS	0.0196 U	0.5 U
PCB-1254 (Aroclor 1254)	NS	NS	0.0196 U	0.5 U
PCB-1260 (Aroclor 1260)	NS	NS	0.0196 U	0.5 U
PCB-1262 (Aroclor 1262)	NS	NS	0.0196 U	0.5 U
PCB-1268 (Aroclor 1268)	NS	NS	0.0196 U	0.5 U
Total PCBs	0.1	1	0.0196 U	0.5 U

Tables 1-5
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Analytical Results
Notes

GENERAL

NS : No standard.

U : The analyte was not detected at the indicated concentration.

J : The concentration given is an estimated value.

JH : The concentration given is an estimated value biased high.

JL : The concentration given is an estimated value biased low.

N : Indicates the spiked sample recovery is not within control limits

D : Indicates the reported values is from a diluted analysis.

R : The data is unusable. The sample result is rejected due to deficiencies in meeting Quality Control criteria. The analyte may or may not be present in the sample.

SOIL

Part 375 Soil Cleanup Objectives : Soil Cleanup Objectives (SCOs) listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Part 375).

mg/kg : milligrams per kilogram = parts per million (ppm)

Exceedences of Part 375 Unrestricted SCOs (UUSCOs) are highlighted in bold font.
Exceedences of Part 375 Restricted Residential SCOs (RRSCOs) are highlighted in gray.

Table 6
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-1-20171211 12/11/2017 1 µg/L	MW-4-20171211 12/11/2017 1 µg/L
1,1,1-Trichloroethane	5	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U
1,2,3-Trichlorobenzene	5	1 UJ	1 UJ
1,2,4-Trichlorobenzene	5	1 UJ	1 UJ
1,2-Dibromo-3-Chloropropane	0.04	1 U	1 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	1 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U
1,2-Dichloroethane	0.6	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U
1,4-Dioxane (P-Dioxane)	NS	100 U	100 U
2-Hexanone	50	5 U	5 U
Acetone	50	5 U	2.2 J
Benzene	1	1 U	1 U
Bromochloromethane	5	1 U	1 U
Bromodichloromethane	50	1 U	1 U
Bromoform	50	1 U	1 U
Bromomethane	5	1 UJ	1 UJ
Carbon Disulfide	60	1 U	1 U
Carbon Tetrachloride	5	1 U	1 U
Chlorobenzene	5	1 U	1 U
Chloroethane	5	1 U	1 U
Chloroform	7	1.7	0.78 J
Chloromethane	5	1 U	1 U
Cis-1,2-Dichloroethylene	5	1 U	1 U
Cis-1,3-Dichloropropene	NS	1 U	1 U
Cyclohexane	NS	1 UJ	1 UJ
Dibromochloromethane	50	1 U	1 U
Dichlorodifluoromethane	5	1 U	1 U
Ethylbenzene	5	1 U	1 U
Isopropylbenzene (Cumene)	5	1 U	1 U
M,P-Xylenes	5	2 U	2 U
Methyl Acetate	NS	1 U	1 U
Methyl Ethyl Ketone (2-Butanone)	50	5 U	5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	5 U	5 U
Methylcyclohexane	NS	1 U	1 U
Methylene Chloride	5	1 U	1 U
O-Xylene (1,2-Dimethylbenzene)	5	1 U	1 U
Styrene	5	1 U	1 U
Tert-Butyl Methyl Ether	10	1 U	1 U
Tetrachloroethylene (PCE)	5	**25.5**	**19.1**
Toluene	5	1 U	1 U
Trans-1,2-Dichloroethene	5	1 U	1 U
Trans-1,3-Dichloropropene	NS	1 U	1 U
Trichloroethylene (TCE)	5	0.74 J	1 U
Trichlorofluoromethane	5	1 U	1 U
Vinyl Chloride	2	1 U	1 U
Xylenes, Total	NS	3 U	3 U

Table 6
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-X-20171211 12/11/2017 1 µg/L	MW-11-20171211 12/11/2017 1 µg/L
1,1,1-Trichloroethane	5	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U
1,2,3-Trichlorobenzene	5	1 UJ	1 UJ
1,2,4-Trichlorobenzene	5	1 UJ	1 UJ
1,2-Dibromo-3-Chloropropane	0.04	1 U	1 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	1 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U
1,2-Dichloroethane	0.6	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U
1,4-Dioxane (P-Dioxane)	NS	100 U	100 U
2-Hexanone	50	5 U	5 U
Acetone	50	2 J	2.6 J
Benzene	1	1 U	1 U
Bromochloromethane	5	1 U	1 U
Bromodichloromethane	50	1 U	1 U
Bromoform	50	1 U	1 U
Bromomethane	5	1 UJ	1 UJ
Carbon Disulfide	60	1 U	1 U
Carbon Tetrachloride	5	1 U	1 U
Chlorobenzene	5	1 U	1 U
Chloroethane	5	1 U	1 U
Chloroform	7	0.88 J	0.77 J
Chloromethane	5	1 U	1 U
Cis-1,2-Dichloroethylene	5	1 U	1 U
Cis-1,3-Dichloropropene	NS	1 U	1 U
Cyclohexane	NS	1 UJ	1 UJ
Dibromochloromethane	50	1 U	1 U
Dichlorodifluoromethane	5	1 U	1 U
Ethylbenzene	5	1 U	1 U
Isopropylbenzene (Cumene)	5	1 U	1 U
M,P-Xylenes	5	2 U	2 U
Methyl Acetate	NS	1 U	1 U
Methyl Ethyl Ketone (2-Butanone)	50	5 U	5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	5 U	5 U
Methylcyclohexane	NS	1 U	1 U
Methylene Chloride	5	1 U	1 U
O-Xylene (1,2-Dimethylbenzene)	5	1 U	1 U
Styrene	5	1 U	1 U
Tert-Butyl Methyl Ether	10	1 U	1 U
Tetrachloroethylene (PCE)	5	**18.9**	**19.7**
Toluene	5	1 U	1 U
Trans-1,2-Dichloroethene	5	1 U	1 U
Trans-1,3-Dichloropropene	NS	1 U	1 U
Trichloroethylene (TCE)	5	0.64 J	0.77 J
Trichlorofluoromethane	5	1 U	1 U
Vinyl Chloride	2	1 U	1 U
Xylenes, Total	NS	3 U	3 U

Table 6
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Volatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	FB-20171211 12/11/2017 1 µg/L	TB-20171211 12/11/2017 1 µg/L
1,1,1-Trichloroethane	5	1 U	1 U
1,1,2,2-Tetrachloroethane	5	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	1 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U
1,1-Dichloroethane	5	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U
1,2,3-Trichlorobenzene	5	1 UJ	1 UJ
1,2,4-Trichlorobenzene	5	1 UJ	1 UJ
1,2-Dibromo-3-Chloropropane	0.04	1 U	1 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	1 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U
1,2-Dichloroethane	0.6	1 U	1 U
1,2-Dichloropropane	1	1 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U
1,4-Dioxane (P-Dioxane)	NS	100 U	100 U
2-Hexanone	50	5 U	5 U
Acetone	50	5 U	5 U
Benzene	1	1 U	1 U
Bromochloromethane	5	1 U	1 U
Bromodichloromethane	50	1 U	1 U
Bromoform	50	1 U	1 U
Bromomethane	5	1 UJ	1 UJ
Carbon Disulfide	60	1 U	1 U
Carbon Tetrachloride	5	1 U	1 U
Chlorobenzene	5	1 U	1 U
Chloroethane	5	1 U	1 U
Chloroform	7	1 U	1 U
Chloromethane	5	1 U	1 U
Cis-1,2-Dichloroethylene	5	1 U	1 U
Cis-1,3-Dichloropropene	NS	1 U	1 U
Cyclohexane	NS	1 UJ	1 UJ
Dibromochloromethane	50	1 U	1 U
Dichlorodifluoromethane	5	1 U	1 U
Ethylbenzene	5	1 U	1 U
Isopropylbenzene (Cumene)	5	1 U	1 U
M,P-Xylenes	5	2 U	2 U
Methyl Acetate	NS	1 U	1 U
Methyl Ethyl Ketone (2-Butanone)	50	5 U	5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	NS	5 U	5 U
Methylcyclohexane	NS	1 U	1 U
Methylene Chloride	5	1 U	1 U
O-Xylene (1,2-Dimethylbenzene)	5	1 U	1 U
Styrene	5	1 U	1 U
Tert-Butyl Methyl Ether	10	1 U	1 U
Tetrachloroethylene (PCE)	5	1 U	1 U
Toluene	5	1 U	1 U
Trans-1,2-Dichloroethene	5	1 U	1 U
Trans-1,3-Dichloropropene	NS	1 U	1 U
Trichloroethylene (TCE)	5	1 U	1 U
Trichlorofluoromethane	5	1 U	1 U
Vinyl Chloride	2	1 U	1 U
Xylenes, Total	NS	3 U	3 U

Table 7
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-1-20171211 12/11/2017 1 µg/L	MW-4-20171211 12/11/2017 1 µg/L	MW-X-20171211 12/11/2017 1 µg/L
1,2,4,5-Tetrachlorobenzene	5	10 U	10 UJ	10 UJ
2,3,4,6-Tetrachlorophenol	NS	10 U	10 U	10 U
2,4,5-Trichlorophenol	NS	10 U	10 U	10 U
2,4,6-Trichlorophenol	NS	10 U	10 U	10 U
2,4-Dichlorophenol	5	10 U	10 U	10 U
2,4-Dimethylphenol	50	10 U	10 U	10 U
2,4-Dinitrophenol	10	10 UJ	10 UJ	10 UJ
2,4-Dinitrotoluene	5	10 U	10 U	10 U
2,6-Dinitrotoluene	5	10 U	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U	10 U
2-Chlorophenol	NS	10 U	10 U	10 U
2-Methylnaphthalene	NS	10 U	10 U	10 U
2-Methylphenol (O-Cresol)	NS	10 U	10 U	10 U
2-Nitroaniline	5	10 U	10 U	10 U
2-Nitrophenol	NS	10 U	10 U	10 U
3,3'-Dichlorobenzidine	5	10 U	10 U	10 U
3-Methylphenol/4-Methylphenol	NS	10 U	10 U	10 U
3-Nitroaniline	5	10 U	10 U	10 U
4,6-Dinitro-2-Methylphenol	NS	10 U	10 U	10 U
4-Bromophenyl Phenyl Ether	NS	10 U	10 U	10 U
4-Chloro-3-Methylphenol	NS	10 U	10 U	10 U
4-Chloroaniline	5	10 U	10 U	10 U
4-Chlorophenyl Phenyl Ether	NS	10 U	10 U	10 U
4-Nitroaniline	5	10 U	10 U	10 U
4-Nitrophenol	NS	10 U	10 U	10 U
Acenaphthene	20	10 U	10 U	10 U
Acenaphthylene	NS	10 U	10 U	10 U
Acetophenone	NS	10 U	10 U	10 U
Anthracene	50	10 U	10 U	10 U
Atrazine	7.5	10 U	10 U	10 U
Benzaldehyde	NS	10 U	10 U	10 U
Benzo(A)Anthracene	0.002	10 U	10 U	10 U
Benzo(A)Pyrene	ND	10 U	10 U	10 U
Benzo(B)Fluoranthene	0.002	10 U	10 U	10 U
Benzo(G,H,I)Perylene	NS	10 U	10 U	10 U
Benzo(K)Fluoranthene	0.002	10 U	10 U	10 U
Benzyl Butyl Phthalate	50	10 U	10 U	10 U
Biphenyl (Diphenyl)	5	10 U	10 U	10 U
Bis(2-Chloroethoxy) Methane	5	10 U	10 U	10 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	1	10 U	10 U	10 U
Bis(2-Chloroisopropyl) Ether	5	10 U	10 U	10 U
Bis(2-Ethylhexyl) Phthalate	5	10 U	10 U	10 U
Caprolactam	NS	10 U	10 U	10 U
Carbazole	NS	10 U	10 U	10 U
Chrysene	0.002	10 U	10 U	10 U
Dibenz(A,H)Anthracene	NS	10 U	10 U	10 U
Dibenzofuran	NS	10 U	10 U	10 U
Diethyl Phthalate	50	10 U	10 U	10 U
Dimethyl Phthalate	50	10 U	10 U	10 U
Di-N-Butyl Phthalate	50	10 U	10 U	10 U
Di-N-Octylphthalate	50	10 U	10 U	10 U
Fluoranthene	50	10 U	10 U	10 U
Fluorene	50	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U
Indeno(1,2,3-C,D)Pyrene	0.002	10 U	10 U	10 U
Isophorone	50	10 U	10 U	10 U
Naphthalene	10	10 U	10 U	10 U
Nitrobenzene	0.4	10 U	10 U	10 U
N-Nitrosodi-N-Propylamine	NS	10 UJ	10 UJ	10 UJ
N-Nitrosodiphenylamine	50	10 UJ	10 UJ	10 UJ
Pentachlorophenol	NS	10 U	10 U	10 U
Phenanthrene	50	10 U	10 U	10 U
Phenol	1	10 U	10 U	10 U
Pyrene	50	10 U	10 U	10 U

Table 7
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Semivolatile Organic Compounds

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-11-20171211 12/11/2017 1 µg/L	FB-20171211 12/11/2017 1 µg/L
1,2,4,5-Tetrachlorobenzene	5	10 UJ	10 UJ
2,3,4,6-Tetrachlorophenol	NS	10 U	10 UJ
2,4,5-Trichlorophenol	NS	10 U	10 UJ
2,4,6-Trichlorophenol	NS	10 U	10 UJ
2,4-Dichlorophenol	5	10 U	10 UJ
2,4-Dimethylphenol	50	10 U	10 UJ
2,4-Dinitrophenol	10	10 UJ	10 UJ
2,4-Dinitrotoluene	5	10 U	10 U
2,6-Dinitrotoluene	5	10 U	10 U
2-Chloronaphthalene	10	10 U	10 U
2-Chlorophenol	NS	10 U	10 UJ
2-Methylnaphthalene	NS	10 U	10 UJ
2-Methylphenol (O-Cresol)	NS	10 U	10 U
2-Nitroaniline	5	10 U	10 U
2-Nitrophenol	NS	10 U	10 UJ
3,3'-Dichlorobenzidine	5	10 U	10 U
3-Methylphenol/4-Methylphenol	NS	10 U	10 UJ
3-Nitroaniline	5	10 U	10 U
4,6-Dinitro-2-Methylphenol	NS	10 U	10 UJ
4-Bromophenyl Phenyl Ether	NS	10 U	10 U
4-Chloro-3-Methylphenol	NS	10 U	10 UJ
4-Chloroaniline	5	10 U	10 U
4-Chlorophenyl Phenyl Ether	NS	10 U	10 U
4-Nitroaniline	5	10 U	10 U
4-Nitrophenol	NS	10 U	10 U
Acenaphthene	20	10 U	10 U
Acenaphthylene	NS	10 U	10 U
Acetophenone	NS	10 U	10 U
Anthracene	50	10 U	10 U
Atrazine	7.5	10 U	10 U
Benzaldehyde	NS	10 U	10 U
Benzo(A)Anthracene	0.002	10 U	10 U
Benzo(A)Pyrene	ND	10 U	10 U
Benzo(B)Fluoranthene	0.002	10 U	10 U
Benzo(G,H,I)Perylene	NS	10 U	10 U
Benzo(K)Fluoranthene	0.002	10 U	10 U
Benzyl Butyl Phthalate	50	10 U	10 U
Biphenyl (Diphenyl)	5	10 U	10 U
Bis(2-Chloroethoxy) Methane	5	10 U	10 U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	1	10 U	10 U
Bis(2-Chloroisopropyl) Ether	5	10 U	10 U
Bis(2-Ethylhexyl) Phthalate	5	10 U	10 U
Caprolactam	NS	10 U	10 U
Carbazole	NS	10 U	10 U
Chrysene	0.002	10 U	10 U
Dibenz(A,H)Anthracene	NS	10 U	10 U
Dibenzofuran	NS	10 U	10 U
Diethyl Phthalate	50	10 U	10 U
Dimethyl Phthalate	50	10 U	10 U
Di-N-Butyl Phthalate	50	10 U	10 U
Di-N-Octylphthalate	50	10 U	10 U
Fluoranthene	50	10 U	10 U
Fluorene	50	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 UJ
Hexachloroethane	5	10 U	10 U
Indeno(1,2,3-C,D)Pyrene	0.002	10 U	10 U
Isophorone	50	10 U	10 U
Naphthalene	10	10 U	10 U
Nitrobenzene	0.4	10 U	10 U
N-Nitrosodi-N-Propylamine	NS	10 UJ	10 UJ
N-Nitrosodiphenylamine	50	10 UJ	10 UJ
Pentachlorophenol	NS	10 U	10 UJ
Phenanthrene	50	10 U	10 U
Phenol	1	10 U	10 UJ
Pyrene	50	10 U	10 U

Table 8
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Metals

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-1-20171211 12/11/2017 1 µg/L	MW-4-20171211 12/11/2017 1 µg/L	MW-X-20171211 12/11/2017 1 µg/L	MW-11-20171211 12/11/2017 1 µg/L	FB-20171211 12/11/2017 1 µg/L
Total Metals						
Aluminum	**NS**	21.2 J	87.8 J	51.8 J	243	50 U
Antimony	**3**	25 U	25 U	25 U	25 U	25 U
Arsenic	**25**	10 U	10 U	10 U	10 U	10 U
Barium	**1,000**	68.1	73.3	69.9	64.1	50 U
Beryllium	**3**	3 U	3 U	3 U	3 U	3 U
Cadmium	**5**	3 U	3 U	3 U	3 U	3 U
Calcium	**NS**	59,100	61,700	59,500	69,200	111 J
Chromium, Total	**50**	6.49 JH	10.6 JH	4.56 JH	28.7 JH	9.7 JH
Cobalt	**NS**	15 U	15 U	15 U	15 U	15 U
Copper	**200**	2.6 J	2.87 J	2.19 J	10 U	10 U
Iron	**300**	61.7 JH	220 JH	122 JH	**644 JH**	36.3 JH
Lead	**25**	3.51 J	5.21 J	4.36 J	5.59 J	6 U
Magnesium	**35,000**	11,200	9,110	8,730	23,000	1,000 U
Manganese	**300**	17.3	31.4	21.4	62.9	10 U
Mercury	**0.7**	0.2 U	0.2 U	0.105 J	0.2 U	0.2 U
Nickel	**100**	20 U	5.56 JH	20 U	7.31 JH	20 U
Potassium	**NS**	2,860	2,700	2,610	2470	1,000 U
Selenium	**10**	10 U	10 U	10 U	10 U	10 U
Silver	**50**	5 U	5 U	5 U	5 U	5 U
Sodium	**20,000**	**75,500**	**118,000**	**114,000**	**59,300**	1,000 U
Thallium	**0.5**	20 U	20 U	20 U	20 U	20 U
Vanadium	**NS**	20 U	20 U	20 U	20 U	20 U
Zinc	**2,000**	11.5 J	9.44 J	8.25 J	22.8	9.22 J
Dissolved Metals						
Aluminum	**NS**	50 U	50 U	50 U	50 U	NA
Antimony	**3**	25 U	25 U	25 U	25 U	NA
Arsenic	**25**	10 U	10 U	10 U	10 U	NA
Barium	**1,000**	72	71.8	68.7	59.7	NA
Beryllium	**3**	3 U	3 U	3 U	3 U	NA
Cadmium	**5**	3 U	3 U	3 U	3 U	NA
Calcium	**NS**	60,100	59,000	56,300	65,800	NA
Chromium, Total	**50**	6.8	1.56 J	2.96 J	8.14	NA
Cobalt	**NS**	15 U	15 U	15 U	15 U	NA
Copper	**200**	2.92 J	2.09 J	2.76 J	10 U	NA
Iron	**300**	34.6 J	50 U	17.1 J	38.9 J	NA
Lead	**25**	1.91 J	2.17 J	1.75 J	2.12 J	NA
Magnesium	**35,000**	11,100	8,410	8,220	21,600	NA
Manganese	**300**	16.3	14.1	11.2	9.17 J	NA
Mercury	**0.7**	0.2 U	0.2 U	0.2 U	0.1 J	NA
Nickel	**100**	20 U	20 U	20 U	20 U	NA
Potassium	**NS**	2,870	2,490	2,380	2,240	NA
Selenium	**10**	10 U	10 U	10 U	10 U	NA
Silver	**50**	5 U	5 U	5 U	5 U	NA
Sodium	**20,000**	**78,000**	**114,000**	**109,000**	**57,100**	NA
Thallium	**0.5**	20 U	20 U	20 U	20 U	NA
Vanadium	**NS**	20 U	20 U	20 U	20 U	NA
Zinc	**2,000**	13.1 J	7.68 J	8.74 J	10.3 J	NA

Table 9

7 Saratoga Avenue and 1510-1524 Broadway

Brooklyn, New York

Remedial Investigation Groundwater Analytical Results

Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-1-20171211 12/11/2017 1 µg/L	MW-4-20171211 12/11/2017 1 µg/L	MW-X-20171211 12/11/2017 1 µg/L
Aldrin	**ND**	0.05 U	0.05 U	0.05 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.01**	0.05 U	0.05 U	0.05 U
Alpha Endosulfan	**NS**	0.05 U	0.05 U	0.05 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.04**	0.05 U	0.05 U	0.05 U
Beta Endosulfan	**NS**	0.05 U	0.05 U	0.05 U
cis-Chlordane	**NS**	0.05 U	0.05 U	0.05 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	0.05 U	0.05 U	0.05 U
Dieldrin	**0.004**	0.05 U	0.05 U	0.05 U
Endosulfan Sulfate	**NS**	0.05 U	0.05 U	0.05 U
Endrin	**ND**	0.05 U	0.05 U	0.05 U
Endrin Aldehyde	**5**	0.05 U	0.05 U	0.05 U
Endrin Ketone	**5**	0.05 U	0.05 U	0.05 U
Gamma Bhc (Lindane)	**0.05**	0.05 U	0.05 U	0.05 U
Heptachlor	**0.04**	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	**0.03**	0.05 U	0.05 U	0.05 U
Methoxychlor	**35**	0.05 U	0.05 U	0.05 U
P,P'-DDD	**0.3**	0.05 U	0.05 U	0.05 U
P,P'-DDE	**0.2**	0.05 U	0.05 U	0.05 U
P,P'-DDT	**0.2**	0.05 U	0.05 U	0.05 U
Toxaphene	**0.06**	0.5 U	0.5 U	0.5 U
trans-Chlordane	**NS**	0.05 U	0.05 U	0.05 U

Table 9

7 Saratoga Avenue and 1510-1524 Broadway

Brooklyn, New York

Remedial Investigation Groundwater Analytical Results

Pesticides

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-11-20171211 12/11/2017 1 µg/L	FB-20171211 12/11/2017 1 µg/L
Aldrin	**ND**	0.05 U	0.05 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	**0.01**	0.05 U	0.05 U
Alpha Endosulfan	**NS**	0.05 U	0.05 U
Beta Bhc (Beta Hexachlorocyclohexane)	**0.04**	0.05 U	0.05 U
Beta Endosulfan	**NS**	0.05 U	0.05 U
cis-Chlordane	**NS**	0.05 U	0.05 U
Delta BHC (Delta Hexachlorocyclohexane)	**0.04**	0.05 U	0.05 U
Dieldrin	**0.004**	0.05 U	0.05 U
Endosulfan Sulfate	**NS**	0.05 U	0.05 U
Endrin	**ND**	0.05 U	0.05 U
Endrin Aldehyde	**5**	0.05 U	0.05 U
Endrin Ketone	**5**	0.05 U	0.05 U
Gamma Bhc (Lindane)	**0.05**	0.05 U	0.05 U
Heptachlor	**0.04**	0.05 U	0.05 U
Heptachlor Epoxide	**0.03**	0.05 U	0.05 U
Methoxychlor	**35**	0.05 U	0.05 U
P,P'-DDD	**0.3**	0.05 U	0.05 U
P,P'-DDE	**0.2**	0.05 U	0.05 U
P,P'-DDT	**0.2**	0.05 U	0.05 U
Toxaphene	**0.06**	0.5 U	0.5 U
trans-Chlordane	**NS**	0.05 U	0.05 U

Table 10
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Polychlorinated Biphenyls

Sample ID Date Sampled Dilution Factor Unit	NYSDEC Class GA AWQS µg/L	MW-1-20171211 12/11/2017 1 µg/L	MW-4-20171211 12/11/2017 1 µg/L	MW-X-20171211 12/11/2017 1 µg/L	MW-11-20171211 12/11/2017 1 µg/L	FB-20171211 12/11/2017 1 µg/L
PCB-1016 (Aroclor 1016)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1221 (Aroclor 1221)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1232 (Aroclor 1232)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1242 (Aroclor 1242)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1248 (Aroclor 1248)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1254 (Aroclor 1254)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1260 (Aroclor 1260)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1262 (Aroclor 1262)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PCB-1268 (Aroclor 1268)	NS	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Tables 6-10
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Groundwater Analytical Results
Notes

GENERAL

NS : No standard.

U : The analyte was not detected at the indicated concentration.

J : The concentration given is an estimated value.

JH : The concentration given is an estimated value biased high.

ND : Non detect.

NA : Not analyzed

GROUNDWATER

NYSDEC Class GA Ambient Water Quality Standards (AWQS) : New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values.

µg/L : micrograms per Liter = parts per billion (ppb)

Exceedances of NYSDEC Class GA AWQS are highlighted in bold font.

Table 11
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Vapor Analytical Results
Volatile Organic Compounds

Sample ID	SV-1-20171129	SV-2-20171129	SV-3-20171129
Date Sampled	11/29/2017	11/29/2017	11/29/2017
Dilution Factor	10	10	10
Unit	ug/m3	ug/m3	ug/m3
1,1,1-Trichloroethane	0.16 U	0.16 U	0.33 U
1,1,2,2-Tetrachloroethane	3.43 U	3.43 U	6.87 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.83 U	3.83 U	7.66 U
1,1,2-Trichloroethane	2.73 U	2.73 U	5.46 U
1,1-Dichloroethane	2.02 U	2.02 U	4.05 U
1,1-Dichloroethene	1.98 U	1.98 U	3.96 U
1,2,4-Trimethylbenzene	10.8	12.3	11.8
1,2-Dibromoethane (Ethylene Dibromide)	3.84 U	3.84 U	7.69 U
1,2-Dichloroethane	2.02 U	2.02 U	4.05 U
1,2-Dichloropropane	2.31 U	2.31 U	4.62 U
1,2-Dichlorotetrafluoroethane	3.49 U	3.49 U	6.99 U
1,3,5-Trimethylbenzene (Mesitylene)	3.1	3.88	3.44 J
1,3-Butadiene	1.11 U	1.11 U	2.21 U
1,4-Dioxane (P-Dioxane)	1.8 U	1.8 U	3.6 U
2,2,4-Trimethylpentane	1.54 J	4.2	2.15 J
2-Chlorotoluene	2.59 U	2.59 U	5.18 U
4-Ethyltoluene	6.88	8.85	6.88
Acetone	78.9 DJL	90.3 DJL	86.5 DJL
Allyl Chloride (3-Chloropropene)	1.57 UJ	1.57 U	3.13 U
Benzene	6.39	16.6	7.99
Bromodichloromethane	3.35 U	3.35 U	6.7 U
Bromoform	5.17 U	5.17 U	10.3 U
Bromomethane	1.94 U	1.94 U	3.88 U
Carbon Disulfide	2.37	2.9	5.61
Carbon Tetrachloride	0.19 U	25.2	0.38 U
Chlorobenzene	2.3 U	2.3 U	4.61 U
Chloroethane	1.32 U	1.32 U	2.64 U
Chloroform	1.12 J	3.66	4.88 U
Chloromethane	1.03 U	1.03 U	2.07 U
Cis-1,2-Dichloroethylene	1.98 U	1.98 U	3.96 U
Cis-1,3-Dichloropropene	2.27 U	2.27 U	4.54 U
Cyclohexane	1.72 U	1.72 U	3.44 U
Dibromochloromethane	4.26 U	4.26 U	8.52 U
Dichlorodifluoromethane	2.08 J	2.47 U	1.29 J
Ethylbenzene	15.2	20.4	13.9
M,P-Xylenes	58.2	76.4	56.5
Methyl Ethyl Ketone (2-Butanone)	9.44	19.2	10
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	1.19 J	3.11	4.1 U
Methylene Chloride	1.74 U	10.4	22.2
N-Heptane	9.02	10.7	7.38
N-Hexane	10.2	25.7	16.9
O-Xylene (1,2-Dimethylbenzene)	14.8	20.4	14.3
Styrene	1.41 J	2.13 U	4.26 U
Tert-Butyl Alcohol	10.9 JL	6.97	21.5
Tert-Butyl Methyl Ether	1.8 U	1.8 U	3.61 U
Tetrachloroethylene (PCE)	**277 D**	**43.4**	27.1
Tetrahydrofuran	1.47 U	1.47 U	2.95 U
Toluene	51.2 D	69 D	56.2
Trans-1,2-Dichloroethene	1.98 U	1.98 U	3.96 U
Trans-1,3-Dichloropropene	2.27 U	2.27 U	4.54 U
Trichloroethylene (TCE)	**10.2**	**8.06**	0.32 U
Trichlorofluoromethane	2.81	1.63 J	5.62 U
Vinyl Bromide	2.19 U	2.19 U	4.37 U
Vinyl Chloride	0.08 U	0.08 U	0.15 U

Table 11
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Vapor Analytical Results
Volatile Organic Compounds

Sample ID	SV-4-20171129	SV-5-20171129	SV-7-20171129
Date Sampled	11/29/2017	11/29/2017	11/29/2017
Dilution Factor	10	10	10
Unit	ug/m3	ug/m3	µg/m^3
1,1,1-Trichloroethane	0.33 U	0.33 U	0.33 U
1,1,2,2-Tetrachloroethane	6.87 U	6.87 U	6.87 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.66 U	7.66 U	7.66 U
1,1,2-Trichloroethane	5.46 U	5.46 U	5.46 U
1,1-Dichloroethane	4.05 U	4.05 U	4.05 U
1,1-Dichloroethene	3.96 U	3.96 U	3.96 U
1,2,4-Trimethylbenzene	15.2	14.8	26.1
1,2-Dibromoethane (Ethylene Dibromide)	7.69 U	7.69 U	7.69 U
1,2-Dichloroethane	4.05 U	4.05 U	4.05 U
1,2-Dichloropropane	4.62 U	4.62 U	4.62 U
1,2-Dichlorotetrafluoroethane	6.99 U	6.99 U	6.99 U
1,3,5-Trimethylbenzene (Mesitylene)	4.92	4.13 J	8.36
1,3-Butadiene	2.21 U	2.21 U	2.21 U
1,4-Dioxane (P-Dioxane)	3.6 U	3.6 U	3.6 U
2,2,4-Trimethylpentane	59.8	1.59 J	3.36 J
2-Chlorotoluene	5.18 U	5.18 U	5.18 U
4-Ethyltoluene	9.34	8.36	16.2
Acetone	76.2 DJL	59.6 DJL	118 DJL
Allyl Chloride (3-Chloropropene)	3.13 U	3.13 U	3.13 U
Benzene	7.35	4.79	9.26
Bromodichloromethane	6.7 U	6.7 U	6.7 U
Bromoform	10.3 U	10.3 U	10.3 U
Bromomethane	3.88 U	3.88 U	3.88 U
Carbon Disulfide	3.43	3.11 U	18.1
Carbon Tetrachloride	0.38 U	0.38 U	0.38 U
Chlorobenzene	4.61 U	4.61 U	4.61 U
Chloroethane	2.64 U	2.64 U	2.64 U
Chloroform	2.15 J	4.88 U	4.88 U
Chloromethane	2.07 U	2.07 U	2.07 U
Cis-1,2-Dichloroethylene	3.96 U	3.96 U	3.96 U
Cis-1,3-Dichloropropene	4.54 U	4.54 U	4.54 U
Cyclohexane	3.44 U	3.44 U	3.44 U
Dibromochloromethane	8.52 U	8.52 U	8.52 U
Dichlorodifluoromethane	4.94 U	4.94 U	4.94 U
Ethylbenzene	19.1	12.2	28.7
M,P-Xylenes	78.2	52.1	109
Methyl Ethyl Ketone (2-Butanone)	12.1	16.8	38
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	4.1 U	4.1 U	2.38 J
Methylene Chloride	3.47 U	21.2	13.9
N-Heptane	9.43	5.74	35.6
N-Hexane	17.3	15.2	79.3
O-Xylene (1,2-Dimethylbenzene)	21.3	14.3	31.7
Styrene	4.26 U	1.36 J	2.04 J
Tert-Butyl Alcohol	7.88	19.7	8.49
Tert-Butyl Methyl Ether	1.51 J	3.61 U	3.61 U
Tetrachloroethylene (PCE)	14.9	2.58	3.8
Tetrahydrofuran	2.95 U	2.95 U	2.95 U
Toluene	62.9	40.3	89.3
Trans-1,2-Dichloroethene	3.96 U	3.96 U	3.96 U
Trans-1,3-Dichloropropene	4.54 U	4.54 U	4.54 U
Trichloroethylene (TCE)	0.32 U	0.32 U	0.32 U
Trichlorofluoromethane	1.35 J	5.62 U	6.18
Vinyl Bromide	4.37 U	4.37 U	4.37 U
Vinyl Chloride	0.15 U	0.15 U	0.15 U

Table 11
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Vapor Analytical Results
Volatile Organic Compounds

Sample ID	SV-8-20171129	SV-9-20171129	SV-10-20171129
Date Sampled	11/29/2017	11/29/2017	11/29/2017
Dilution Factor	10	10	4/10
Unit	µg/m^3	µg/m^3	µg/m^3
1,1,1-Trichloroethane	0.33 U	0.33 UJ	0.65 UJ
1,1,2,2-Tetrachloroethane	6.87 U	6.87 U	13.7 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.66 U	7.66 UJ	15.3 UJ
1,1,2-Trichloroethane	5.46 U	5.46 UJ	10.9 UJ
1,1-Dichloroethane	4.05 U	4.05 UJ	8.09 UJ
1,1-Dichloroethene	3.96 U	3.96 UJ	7.93 UJ
1,2,4-Trimethylbenzene	35.9	20.6	27.5
1,2-Dibromoethane (Ethylene Dibromide)	7.69 U	7.69 U	15.4 U
1,2-Dichloroethane	4.05 U	4.05 U	8.09 U
1,2-Dichloropropane	4.62 U	4.62 U	9.24 U
1,2-Dichlorotetrafluoroethane	6.99 U	6.99 U	14 U
1,3,5-Trimethylbenzene (Mesitylene)	11.3	6.88	8.36 J
1,3-Butadiene	2.21 U	2.21 UJ	4.42 UJ
1,4-Dioxane (P-Dioxane)	3.6 U	3.6 U	7.21 U
2,2,4-Trimethylpentane	30.4	2.9 J	2.06 J
2-Chlorotoluene	5.18 U	5.18 U	10.4 U
4-Ethyltoluene	19.2	11.8	9.83 U
Acetone	53 DJL	105 DJL	89.6 DJL
Allyl Chloride (3-Chloropropene)	3.13 U	3.13 UJ	6.26 UJ
Benzene	13.4	7.35	5.11 J
Bromodichloromethane	6.7 U	6.7 U	13.4 U
Bromoform	10.3 U	10.3 U	20.7 U
Bromomethane	3.88 U	3.88 UJ	7.77 UJ
Carbon Disulfide	3.11 U	38 JL	6.23 UJ
Carbon Tetrachloride	0.38 U	0.38 U	0.75 U
Chlorobenzene	4.61 U	4.61 U	9.21 U
Chloroethane	2.64 U	2.64 UJ	5.28 UJ
Chloroform	4.88 U	4.88 UJ	9.77 UJ
Chloromethane	2.07 U	2.07 UJ	4.13 UJ
Cis-1,2-Dichloroethylene	3.96 U	3.96 U	7.93 UJ
Cis-1,3-Dichloropropene	4.54 U	4.54 U	9.08 U
Cyclohexane	3.44 U	3.44 UJ	6.88 UJ
Dibromochloromethane	8.52 U	8.52 U	17 U
Dichlorodifluoromethane	1.68 J	3.66 JL	9.89 UJ
Ethylbenzene	30.8	20	19.1
M,P-Xylenes	117	81.7	79.5
Methyl Ethyl Ketone (2-Butanone)	3.54	29.2	8.85
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	9.02	4.1 U	8.2 U
Methylene Chloride	7.64	3.47 UJ	6.95 UJ
N-Heptane	23.4	11.5	9.43 JL
N-Hexane	22.2	15.9 JL	13.4 JL
O-Xylene (1,2-Dimethylbenzene)	35.6	22.6	19.1
Styrene	4.26 U	1.87 J	8.52 U
Tert-Butyl Alcohol	3.03 U	7.58 JL	6.06 UJ
Tert-Butyl Methyl Ether	3.61 U	3.61 U	7.21 UJ
Tetrachloroethylene (PCE)	1.9	4.88	10.8
Tetrahydrofuran	2.95 U	2.95 U	5.9 U
Toluene	111 D	62.6	66.3
Trans-1,2-Dichloroethene	3.96 U	3.96 UJ	7.93 UJ
Trans-1,3-Dichloropropene	4.54 U	4.54 U	9.08 U
Trichloroethylene (TCE)	1.61	0.32 U	0.64 U
Trichlorofluoromethane	13.5	69.1 JL	59.6 JL
Vinyl Bromide	4.37 U	4.37 U	8.74 U
Vinyl Chloride	0.15 U	0.15 UJ	0.31 UJ

Table 11
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Vapor Analytical Results
Volatile Organic Compounds

Sample ID	SV-11-20171129	
Date Sampled	11/29/2017	
Dilution Factor	4/10	
Unit	µg/m^3	
1,1,1-Trichloroethane	0.65	U
1,1,2,2-Tetrachloroethane	13.7	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	15.3	U
1,1,2-Trichloroethane	10.9	U
1,1-Dichloroethane	8.09	U
1,1-Dichloroethene	7.93	U
1,2,4-Trimethylbenzene	25.6	
1,2-Dibromoethane (Ethylene Dibromide)	15.4	U
1,2-Dichloroethane	8.09	U
1,2-Dichloropropane	9.24	U
1,2-Dichlorotetrafluoroethane	14	U
1,3,5-Trimethylbenzene (Mesitylene)	12.8	
1,3-Butadiene	4.42	U
1,4-Dioxane (P-Dioxane)	7.21	U
2,2,4-Trimethylpentane	35	
2-Chlorotoluene	10.4	U
4-Ethyltoluene	17.7	
Acetone	79.1	DJL
Allyl Chloride (3-Chloropropene)	6.26	U
Benzene	30.7	
Bromodichloromethane	13.4	U
Bromoform	20.7	U
Bromomethane	7.77	U
Carbon Disulfide	6.23	U
Carbon Tetrachloride	0.75	U
Chlorobenzene	9.21	U
Chloroethane	5.28	U
Chloroform	9.77	U
Chloromethane	4.13	U
Cis-1,2-Dichloroethylene	7.93	U
Cis-1,3-Dichloropropene	9.08	U
Cyclohexane	6.88	U
Dibromochloromethane	17	U
Dichlorodifluoromethane	7.42	J
Ethylbenzene	84.7	
M,P-Xylenes	273	
Methyl Ethyl Ketone (2-Butanone)	8.85	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	11.9	
Methylene Chloride	6.95	U
N-Heptane	29.9	
N-Hexane	15.2	
O-Xylene (1,2-Dimethylbenzene)	85.1	
Styrene	8.52	U
Tert-Butyl Alcohol	6.06	U
Tert-Butyl Methyl Ether	7.21	U
Tetrachloroethylene (PCE)	8.14	
Tetrahydrofuran	5.9	U
Toluene	315	D
Trans-1,2-Dichloroethene	7.93	U
Trans-1,3-Dichloropropene	9.08	U
Trichloroethylene (TCE)	0.64	U
Trichlorofluoromethane	16.9	
Vinyl Bromide	8.74	U
Vinyl Chloride	0.31	U

Table 11
7 Saratoga Avenue and 1510-1524 Broadway
Brooklyn, New York
Remedial Investigation Soil Vapor Analytical Results
Notes

GENERAL

U : The analyte was not detected at the indicated concentration.

J : The concentration given is an estimated value.

JL : The concentration given is an estimated value biased low.

D : Indicates the reported value is from a diluted analysis.

SOIL VAPOR

µg/m^3 : micrograms per cubic meter of air

APPENDIX A
PHASE I ESA

APPENDIX B

FIELD SAMPLING LOGS

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-2**

Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1120 **Finish Time:** 1140
Date: 11/28/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1 - 5	40	Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	SB-2(0-2)-20171127
6 - 10	37	Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
11 - 15	41	Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	SB-2(10-12)-20171127
16 - 20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-3**

Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1000 **Finish Time:** 1100
Date: 11/27/17

Depth (feet)	Recovery (Inches)	**Surface Condition:** Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	26	Top 2": Brown SILT, some Sand, Roots (FILL).	ND	DRY	ND	ND	SB-3(0-2)-20171127
2		Next 18": Gray SAND, some Silt, fine Gravel, trace Wood, Brick (FILL).	ND	DRY	ND	ND	
3							
4		Bottom 6": Brown SAND, some Silt, fine Gravel, trace Glass, Brick, Wood (FILL).	ND	DRY	ND	ND	
5							
6	24	Top 2": SLOUGH.	ND	DRY	ND	ND	
7		Next 8": Gray SAND, some Silt, fine Gravel (FILL).	ND	DRY	ND	ND	
8							
9		Next 6": BRICK (FILL).	ND	DRY	ND	ND	
10		Bottom 8": Brown SAND, some Silt, trace fine Gravel, Brick, Metal Nails, Ceramics (FILL).	ND	DRY	ND	ND	
11	40	Top 10": SLOUGH.	ND	DRY	ND	ND	SB-3(10-12)-20171127
12		Next 18": Brown SAND, some Silt, fine Gravel, trace Brick, Roots (FILL).	ND	DRY	ND	ND	
13							
14		Bottom 12": Light Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-5**
Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1100 **Finish Time:** 1120
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	26	Top 6": Brown SILT, some Sand, Roots (FILL).	ND	DRY	ND	ND	SB-5(0-2)-20171127
2							
3		Bottom 20": Brown SAND, some Silt, trace Brick, Concrete, fine Gravel, Wood (FILL).	ND	DRY	ND	ND	
4							
5							
6	20	Top 3": SLOUGH.	ND	DRY	ND	ND	
7							
8		Bottom 17": Brown SAND, some Silt, trace Brick, Wood, fine Gravel (FILL).	ND	DRY	ND	ND	
9							
10							
11	45	Light Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	SB-5(10-12)-20171127
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-6**

Sheet 1 of 3

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1410 **Finish Time:** 1530
Date: 11/28/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	40	Top 4": Brown SILT, some Sand, trace fine Gravel, Glass, Plastic, Roots, Grass (FILL).	ND	DRY	ND	ND	SB-6(0-2)-20171128
2							
3		Bottom 24": Brown SAND, some Silt, Brick, little fine Gravel, trace Glass, Wood (FILL).	ND	DRY	ND	ND	
4							
5							
6	41	Top 19": Brown SAND, some Silt, Brick, trace Wood, Concrete, Glass, fine gravel (FILL).	ND	DRY	ND	ND	SB-6(5-7)-20171128
7							
8							
9		Bottom 13": Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
10							
11	46	Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
12							
13							
14							
15							
16	53	Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater encountered at approximately 38 feet below grade during soil boring installation.
End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-6**
Sheet 2 of 3

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1410 **Finish Time:** 1530
Date: 11/28/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
21 - 25	48	Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
26 - 30	55	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
31 - 35	49	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
36 - 40	55	Brown SAND, trace Silt, fine Gravel.	ND	MOIST	ND	ND	
		Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater encountered at approximately 38 feet below grade during soil boring installation.
End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-6**
Sheet 3 of 3

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1410 **Finish Time:** 1530
Date: 11/28/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
41 42 43 44 45	55	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
46 47 48 49 50	55	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
51 52 53 54 55							
56 57 58 59 60							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater encountered at approximately 38 feet below grade during soil boring installation.
End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-7**
Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1215 **Finish Time:** 1240
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	38	Top 6": Brown SILT, some Sand, roots, trace fine Gravel (FILL).	ND	DRY	ND	ND	
2							
3		Next 24": Brown SAND, some Silt, trace Asphalt, Brick, Concrete, Glass, Wood, fine Gravel (FILL).	ND	DRY	ND	ND	SB-7(0-2)-20171127
4		Bottom 8": Brown SAND, some Silt, trace fine Gravel (FILL).	ND	DRY	ND	ND	
5							
6	50	Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	SB-7(4-6)-20171127
7							
8							
9							
10							
11	45	Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-8**
Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1140 **Finish Time:** 1200
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	35	Top 6": Brown SILT, some Sand, Roots, trace fine Gravel (FILL).	ND	DRY	ND	ND	
2		Next 6": CONCRETE (FILL).	ND	DRY	ND	ND	SB-8(0-2)-20171127
3		Next 15": Brown SAND, some Silt, trace Brick, fine Gravel, Roots (FILL).	ND	DRY	ND	ND	
4							
5		Bottom 8": BRICK (FILL).	ND	DRY	ND	ND	
6	35	Light Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
7							
8							
9							
10							
11	48	Light Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	SB-8(10-12)-20171127
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-9**
Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1300 **Finish Time:** 1330
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	32	Top 4": Brown SILT, some Sand, Roots, trace fine Gravel (FILL).	ND	DRY	ND	ND	SB-9(0-2)-20171127
2							
3		Bottom 28": Dark Brown SAND and Silt, some Brick, trace Wood, Concrete, fine Gravel (FILL).	ND	DRY	ND	ND	
4							
5							
6	30	Top 18": Dark Brown SAND, some Silt, trace Brick, Asphalt, Wood, Concrete, fine Gravel (FILL).	ND	DRY	ND	ND	SB-9(8-10)-20171127
7							
8		Bottom 12": Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	
9							
10							
11	46	Top 23": Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	
12		Next 10": Brown SAND, some Silt, clay, trace fine Gravel.	ND	DRY	ND	ND	
13							
14		Bottom 13": Brown SAND, some Silt, trace fine Gravel.	ND	DRY	ND	ND	
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-10**

Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1340 **Finish Time:** 1410
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	26	Top 6": Brown SILT, some Sand, trace Roots, fine Gravel (FILL).	ND	DRY	ND	ND	SB-10(0-2)-20171127
2							
3		Bottom 20": Brown SAND, some Silt, little Brick, trace Wood, fine Gravel, Plastic Sheeting, Asphalt (FILL).	ND	DRY	ND	ND	SB-X(0-2)-20171127
4							
5							
6	36	Top 28": Brown SAND, some Silt, little Brick, trace fine Gravel, Wood (FILL).	ND	DRY	ND	ND	SB-10(8-10)-20171127
7							
8		Bottom 8": Brown SAND, some Silt, trace fine Gravel (FILL).	ND	DRY	ND	ND	
9							
10							
11	42	Brown SAND, some Silt, trace Brick, fine Gravel.	ND	DRY	ND	ND	
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING LOG

7 Saratoga Avenue
Brooklyn, NY 11233
AKRF Project Number: 20568.03

Soil Boring ID: **SB-12**

Sheet 1 of 1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged By:	ML, AKRF

Drilling
Start Time: 1410 **Finish Time:** 1440
Date: 11/27/17

Depth (feet)	Recovery (Inches)	Surface Condition: Soil/Grass	Odor	Moisture	PID	NAPL	Soil Samples Collected for Laboratory Analysis
1	25	Top 4": Brown SILT, some Sand, trace fine Gravel, Roots, Grass (FILL).	ND	DRY	ND	ND	SB-12(0-2)-20171127
2							SB-12(0-2)MS-20171127
3		Bottom 21": Brown SAND, some Silt, little Brick, trace Concrete, Glass, Wood (FILL).	ND	DRY	ND	ND	SB-12(0-2)MSD-20171127
4							
5							
6	24	Brown SAND, some Silt, little Brick, trace Concrete, Glass, Wood (FILL).	ND	DRY	ND	ND	
7							
8							
9							
10							
11	48	Top 40": Brown SAND, some Silt, trace Brick, Concrete, fine Gravel (FILL).	ND	DRY	ND	ND	
12							SB-12(10-12)-20171127
13		Bottom 8": Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
14							
15							
16							
17							
18							
19							
20							

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, and TAL Metals.
Groundwater was not encountered during soil boring installation.
End of soil boring at 15 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 1 of 3	MW-1	Soil Boring ID:	SB-1

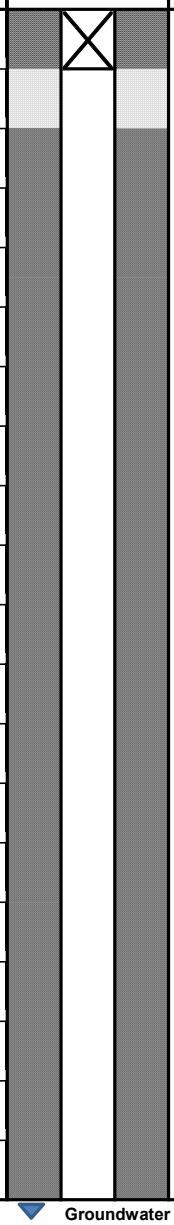
AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0745 Well:0715 **Finish Time:** Soil Boring: 1115 Well:1045

Date: Soil Boring: 11/28/17 Well: 11/30/17

Depth (feet)	Well Construction	Surface Condition: Soil/Grass	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1		**Flush-mounted well cover, locking j-plug, and concrete seal: grade to 1' below grade.** **Non-shrinking cement grout: 1' to 2' below grade.** **2" diameter PVC well casing: 0' to 35' below grade** **No. 00 morie sand: 2' to 31' below grade**	27	Top 3": Brown SILT, some Sand, fine Gravel, trace Filter Fabric. (FILL) Bottom 24": Brown SAND, some Silt, little Brick, Wood, trace Glass, fine Gravel (FILL),	ND ND	DRY DRY	ND ND	ND ND	SB-1(0-2)-20171128
2									
3									
4									
5			24	Top 18": Brown SAND, some Silt, little Brick, trace Concrete, fine Gravel (FILL). Bottom 6": Brown SAND, trace Silt, fine Gravel.	ND ND	DRY DRY	ND ND	ND ND	SB-1(6-8)-20171128
6									
7									
8									
9			42	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
10									
11									
12									
13									
14			49	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
15									
16									
17									
18									
19									
20									

Notes: ▼ **Groundwater Depth Indicator**
Groundwater measured at 36.5 feet below grade in MW-1 on November 30, 2017.
Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals
Groundwater encountered at approximately 39 feet below grade during soil boring installation.
End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ppm = parts per million** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 2 of 3	MW-1	Soil Boring ID:	SB-1

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0745 Well:0715 **Finish Time:** Soil Boring: 1115 Well:1045

Date: Soil Boring: 11/28/17 Well: 11/30/17

Surface Condition: Soil/Grass

Depth (feet)	Well Construction	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
21	No. 00 morie sand: 2' to 31' below grade	49	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
22								
23								
24								
25								
26		45	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
27								
28								
29								
30								
31								
32	Bentonite seal: 31' to 33' below grade	48	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
33	No. 2 morie sand: 33' to 50' below grade							
34								
35								
36	0.020-inch slotted PVC well screen: 35' to 50' below grade	50	Top 30": Brown SAND, trace Silt, fine Gravel.	ND	MOIST	ND	ND	
37								
38								
39			Bottom 20":Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
40								

Notes: Groundwater Depth Indicator
Groundwater measured at 36.5 feet below grade in MW-1 on November 30, 2017.
Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals
Groundwater encountered at approximately 39 feet below grade during soil boring installation.
End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ppm = parts per million** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 3 of 3	MW-1	Soil Boring ID:	SB-1

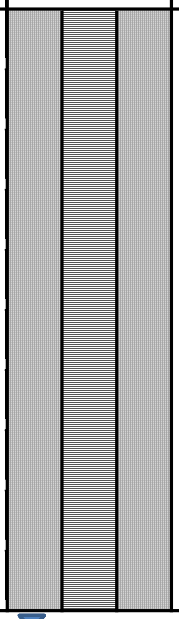
AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0745 Well:0715 **Finish Time:** Soil Boring: 1115 Well:1045

Date: Soil Boring: 11/28/17 Well: 11/30/17

Depth (feet)	Well Construction	Surface Condition: Soil/Grass	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
41		0.020-inch slotted PVC well screen: 35' to 50' below grade	28	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
42									
43									
44									
45		No. 2 morie sand: 31' to 50' below grade	54	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
46									
47									
48									
49									
50		End cap: 50' below grade							

Notes: Groundwater Depth Indicator

Groundwater measured at 36.5 feet below grade in MW-1 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 39 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector **NAPL = non-aqueous phase liquid** **ppm = parts per million** **ND = not detected**

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 1 of 3	MW-4	Soil Boring ID:	SB-4

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 1130 Well: 1100 **Finish Time:** Soil Boring: 1330 Well: 1415

Date: Soil Boring: 11/28/17 Well: 11/30/17

Surface Condition: Soil/Grass

Flush-mounted well cover, locking j-plug, and concrete seal: grade to 1' below grade.

Non-shrinking cement grout: 1' to 2' below grade.

2" diameter PVC well casing: 0' to 35' below grade

No. 00 morie sand: 2' to 31' below grade

Depth (feet)	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1–5	45	Top 6": Brown SILT, Sand, fine Gravel, Roots, Glass, Plastic (FILL). Bottom 39": Brown SAND, some Silt, trace fine Gravel, Roots, Brick (FILL).	ND ND	DRY DRY	ND ND	ND ND	SB-4(0-2)-20171128
6–10	18	Brown SAND, some Silt, trace fine Gravel, Roots, Brick, Glass, Plastic (FILL).	ND	DRY	ND	ND	
11–15	36	Top 10": Brown SAND, some Silt, trace fine Gravel, Roots, Brick, Glass, Plastic (FILL). Bottom 26": Brown SAND, trace Silt, fine Gravel.	ND ND	DRY DRY	ND ND	ND ND	SB-4(10-12)-20171128
16–20	41	Brown SAND, little Silt, fine Gravel.	ND	DRY	ND	ND	

Notes: ▼ **Groundwater Depth Indicator**

Groundwater measured at 36.25 feet below grade in MW-4 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 38 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 2 of 3	MW-4	Soil Boring ID:	SB-4

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 1130 Well: 1100 **Finish Time:** Soil Boring: 1330 Well: 1415

Date: Soil Boring: 11/28/17 Well: 11/30/17

Surface Condition: Soil/Grass

Depth (feet)	Well Construction	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
21	No. 00 morie sandpack filter: 2' to 31' below grade		Top 8": SLOUGH.	ND	DRY	ND	ND	
22		48	Bottom 40": Brown SAND, little Silt, trace fine Gravel.	ND	DRY	ND	ND	
23								
24								
25								
26		55	Top 23": SLOUGH.	ND	DRY	ND	ND	
27			Bottom 40": Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
28								
29								
30								
31		49	Top 6": SLOUGH.	ND	DRY	ND	ND	
32	Bentonite seal: 31' to 33' below grade		Bottom 43": Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
33	No. 2 morie sand: 33' to 50' below grade							
34								
35								
36	0.020-inch slotted PVC well screen: 35' to 50' below grade		Top 10": SLOUGH.	ND	MOIST	ND	ND	
37		55	Next 38": Brown SAND, trace Silt, fine Gravel.	ND	MOIST	ND	ND	
38								
39			Bottom 17": Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
40								

Notes: Groundwater Depth Indicator

Groundwater measured at 36.25 feet below grade in MW-4 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 38 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 3 of 3	MW-4	Soil Boring ID:	SB-4

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 1130 Well: 1100 **Finish Time:** Soil Boring: 1330 Well: 1415

Date: Soil Boring: 11/28/17 Well: 11/30/17

Depth (feet)	Well Construction	Surface Condition: Soil/Grass	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
41		0.020-inch slotted PVC well screen: 35' to 50' below grade		Top 8": SLOUGH.	ND	WET	ND	ND	
42			55	Bottom 47": Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
43									
44									
45		No. 2 morie sand: 31' to 50' below grade							
46									
47			55	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
48									
49									
50		End cap: 50' below grade							

Notes: Groundwater Depth Indicator

Groundwater measured at 36.25 feet below grade in MW-4 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 38 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 1 of 3	MW-11	Soil Boring ID:	SB-11

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0825 Well: 1115 **Finish Time:** Soil Boring: 0945 Well:1315

Date: Soil Boring: 11/29/17 Well: 12/1/17

Surface Condition: Soil/Grass

Well Construction:
- **Flush-mounted well cover, locking j-plug, and Concrete seal: grade to 1' below grade.**
- **Non-shrinking cement grout: 1' to 2' below grade.**
- **2" diameter PVC well casing: 0' to 35' below grade**
- **No. 00 morie sand: 2' to 31' below grade**

Depth (feet)	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
1	32	Top 3": Brown SILT, some Sand, trace fine Gravel (FILL).	ND	DRY	ND	ND	
2							
3		Bottom 29": Brown SAND, Silt, some Brick, trace Wood, Concrete, fine Gravel (FILL).	ND	DRY	ND	ND	SB-11(0-2)-20171129
4							
5							
6	18	Top 12": Brown SAND and SILT, some Brick, Concrete Wood, trace fine Gravel (FILL).	ND	DRY	ND	ND	
7							SB-11(6-8)-20171129
8		Bottom 6": Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
9							
10	30	Top 2": SLOUGH.	ND	DRY	ND	ND	
11							
12		Bottom 28": Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
13							
14							
15	48	Top 18": SLOUGH.	ND	DRY	ND	ND	
16							
17		Bottom 30": Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
18							
19							
20							

Notes: ▼ Groundwater Depth Indicator

Groundwater measured at 35.82 feet below grade in MW-11 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 37.5 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 2 of 3	MW-11	Soil Boring ID:	SB-11

AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

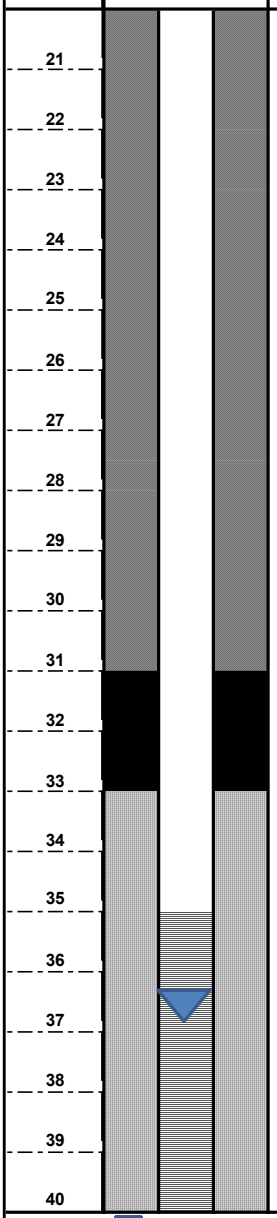
Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0825 Well: 1115 **Finish Time:** Soil Boring: 0945 Well:1315

Date: Soil Boring: 11/29/17 Well: 12/1/17

Surface Condition: Soil/Grass



No. 00 morie sand: 2' to 31' below grade

Bentonite seal: 31' to 33' below grade

No. 2 morie sand: 33' to 50' below grade

0.020-inch slotted PVC well screen: 35' to 50' below grade

Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
48	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
42	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
50	Brown SAND, trace Silt, fine Gravel.	ND	DRY	ND	ND	
51	Top 20": Brown SAND, trace Silt, fine Gravel.	ND	MOIST	ND	ND	
	Bottom 31": Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	

Notes: ▼ **Groundwater Depth Indicator**

Groundwater measured at 35.82 feet below grade in MW-11 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 37.5 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.
Wells were constructed with Geoprobe® Prepacked Well Screens.

SOIL BORING AND WELL INSTALLATION LOG	7 Saratoga Avenue Brooklyn, NY 11233 AKRF Project Number: 20568.03	Groundwater Monitoring Well ID: Sheet 3 of 3	MW-11	Soil Boring ID:	SB-11

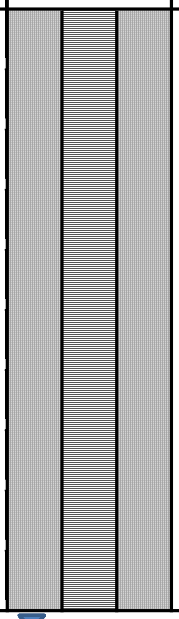
AKRF
440 Park Avenue South, 7th Floor
New York, NY 10016

Drilling Method:	Geoprobe DPP
Sampling Method:	5' Macrocore
Driller:	Cascade
Weather:	45°F
Logged by:	ML, AKRF

Drilling

Start Time: Soil Boring: 0825 Well: 1115 **Finish Time:** Soil Boring: 0945 Well:1315

Date: Soil Boring: 11/29/17 Well: 12/1/17

Depth (feet)	Well Construction	Surface Condition: Soil/Grass	Recovery (Inches)	Soil Boring Log	Odor	Moisture	PID (ppm)	NAPL	Soil Samples Collected for Laboratory Analysis
41 42 43 44 45 46 47 48 49 50		0.020-inch slotted PVC well screen: 35' to 50' below grade No. 2 morie sand: 31' to 50' below grade End cap: 50' below grade	50	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	
			54	Brown SAND, trace Silt, fine Gravel.	ND	WET	ND	ND	

Notes: Groundwater Depth Indicator

Groundwater measured at 35.82 feet below grade in MW-11 on November 30, 2017.

Groundwater monitoring well installed to 50 feet below grade.

Notes: Soil samples analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL Metals

Groundwater encountered at approximately 37.5 feet below grade during soil boring installation.

End of soil boring at 50 feet below grade.

PID = photoionization detector NAPL = non-aqueous phase liquid ppm = parts per million ND = not detected

Soil classifications and descriptions presented are based on the Modified Burmister Classification System. Descriptions were developed for environmental purposes only.

Wells were constructed with Geoprobe® Prepacked Well Screens.

Groundwater Monitoring Well Development Log

AKRF Project No:	20568.03	**Installed By:**	Cascade
Project Location:	7 Saratoga Avenue/1510-1524 Broadway, Brooklyn	**Developed By:**	M. Levy, AKRF
Client:	OER	**Logged By:**	M. Levy, AKRF
Date:	11/30/2017	**Weather:**	50°F

Development Setup

Start Time:	10:50		**Stop Time:**	12:10	
Headspace PID:	ND	parts per million (ppm)	**Well Diameter:**	2	inches
Total Depth:	50.00	feet below top of casing	**1 Well Volume*:**	2.2	gallons
Depth to Water:	36.50	feet below top of casing	**Volume Purged:**	63.4	gallons
Water Column:	13.50	feet below top of casing	**Pump Type:**	Waterra Hydrolift II Pump	

Groundwater Monitoring Well Information

Groundwater Monitoring Well ID:	MW-1	**Groundwater Monitoring Well Installation Date:**	11/30/2017

Groundwater Monitoring Well Development Parameters

Time	Pump Rate (mL/min)	Temperature (ºC)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
10:50	3,000	14.72	7.10	312	0.564	>1,000	7.32
11:00	3,000	14.96	7.06	302	0.677	378	7.50
11:10	3,000	15.00	6.86	314	0.712	238	6.74
11:20	3,000	15.19	7.02	350	0.759	208	7.14
11:30	3,000	15.27	7.15	335	0.779	144	5.53
11:40	3,000	15.47	7.05	311	0.787	113	6.00
11:50	3,000	15.45	7.11	285	0.796	86.5	5.43
12:00	3,000	15.47	7.17	265	0.797	64.3	4.05
12:10	3,000	15.57	7.22	272	0.797	47.8	4.01
12:20	3,000	15.57	7.22	275	0.796	40.2	3.98
12:30	3,000	15.57	7.24	269	0.799	33.6	3.9

Notes: PID = Photoionization Detector; ND = Not Detected; WC = Water Column; ORP = Oxidation Reduction Potential

Volume Calculations: *= 0.041 x WC for 1" wells; *= 0.163 x WC for 2" wells; *= 0.653 x WC for 4" wells; *= 1.469 x WC for 6" wells

Comments:

Purge until turbidity is less than 50 NTU for three successive readings or until water quality indicators are within 10% for three successive readings. Purge a minimum of three well volumes.

Groundwater Monitoring Well Development Log

AKRF Project No:	20568.03	**Installed By:**	Cascade
Project Location:	7 Saratoga Avenue/1510-1524 Broadway, Brooklyn	**Developed By:**	M. Levy, AKRF
Client:	OER	**Logged By:**	M. Levy, AKRF
Date:	11/30/2017	**Weather:**	50°F

Development Setup

Start Time:	14:10		**Stop Time:**	15:50	
Headspace PID:	ND	parts per million (ppm)	**Well Diameter:**	2	inches
Total Depth:	50.00	feet below top of casing	**1 Well Volume*:**	2.2	gallons
Depth to Water:	36.25	feet below top of casing	**Volume Purged:**	80	gallons
Water Column:	13.75	feet below top of casing	**Pump Type:**	Waterra Hydrolift II Pump	

Groundwater Monitoring Well Information

Groundwater Monitoring Well ID:	MW-4	**Groundwater Monitoring Well Installation Date:**	11/30/2017

Groundwater Monitoring Well Development Parameters

Time	Pump Rate (mL/min)	Temperature (ºC)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
14:10	3,000	14.70	7.01	297	0.899	>1,000	7.87
14:20	3,000	14.74	7.05	300	0.917	>1,000	7.71
14:30	3,000	15.29	7.08	324	0.962	492	5.63
14:40	3,000	15.20	7.11	324	0.957	285	5.4
14:50	3,000	15.03	7.07	336	0.960	165	5.38
15:00	3,000	15.12	7.06	320	0.961	148	5.37
15:10	3,000	15.13	7.11	335	0.967	123	5.81
15:20	3,000	15.09	7.09	341	0.968	109	6.20
15:30	3,000	15.10	7.08	336	0.961	97.8	5.40
15:40	3,000	15.21	7.08	347	0.972	86.3	4.47
15:50	3,000	15.19	7.08	339	0.991	45.1	5.41
16:00	3,000	15.20	7.08	343	0.993	36.4	5.41
16:10	3,000	15.19	7.08	341	1.02	29.2	5.41

Notes: PID = Photoionization Detector; ND = Not Detected; WC = Water Column; ORP = Oxidation Reduction Potential

Volume Calculations: = 0.041 x WC for 1" wells; *= 0.163 x WC for 2" wells; *= 0.653 x WC for 4" wells; *= 1.469 x WC for 6" well

Comments:

Purge until turbidity is less than 50 NTU for three successive readings or until water quality indicators are within 10% for three successive readings. Purge a minimum of three well volumes.

Groundwater Monitoring Well Development Log

AKRF Project No:	20568.03	**Installed By:**	Cascade
Project Location:	7 Saratoga Avenue/1510-1524 Broadway, Brooklyn	**Developed By:**	M. Levy, AKRF
Client:	OER	**Logged By:**	M. Levy, AKRF
Date:	12/1/2017	**Weather:**	50°F

Development Setup

Start Time:	13:20		**Stop Time:**	14:30	
Headspace PID:	ND	parts per million (ppm)	**Well Diameter:**	2	inches
Total Depth:	50.00	feet below top of casing	**1 Well Volume*:**	2.3	gallons
Depth to Water:	35.82	feet below top of casing	**Volume Purged:**	55	gallons
Water Column:	14.18	feet below top of casing	**Pump Type:**	Waterra Hydrolift II Pump	

Groundwater Monitoring Well Information

Groundwater Monitoring Well ID:	MW-11	**Groundwater Monitoring Well Installation Date:**	12/1/2017

Groundwater Monitoring Well Development Parameters

Time	Pump Rate (mL/min)	Temperature (ºC)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
13:20	3,000	14.29	7.30	270	0.517	>1,000	8.10
13:30	3,000	14.40	7.07	276	0.527	>1,000	5.74
13:40	3,000	14.50	7.06	289	0.567	863	6.12
13:50	3,000	14.51	7.05	280	0.590	242	5.42
14:00	3,000	14.57	7.04	279	0.591	109	5.61
14:10	3,000	14.53	7.05	281	0.589	91.7	5.60
14:20	3,000	14.60	7.05	290	0.583	58.9	5.71
14:30	3,000	14.61	7.05	290	0.599	47.6	5.03
14:40	3,000	14.61	7.05	290	0.599	34.9	4.99
14:50	3,000	14.61	7.05	290	0.602	30.1	4.80

Notes: PID = Photoionization Detector; ND = Not Detected; WC = Water Column; ORP = Oxidation Reduction Potentia

Volume Calculations: = 0.041 x WC for 1" wells; *= 0.163 x WC for 2" wells; *= 0.653 x WC for 4" wells; *= 1.469 x WC for 6" wel

Comments:

Purge until turbidity is less than 50 NTU for three successive readings or until water quality indicators are within 10% for three successive readings. Purge a minimum of three well volumes.

Well Sampling Log

Job No:	20568.03	**Client:**	OER	**Well No:**	**MW-1**
Project Location:	7 Saratoga Avenue, Brooklyn, NY	**Sampled By:**	M. Levy, AKRF		
Date:	12/11/2017	**Sampling Time:**	10:30		
LEL at surface:	ND				
PID at surface:	1.3 ppm				
Total Depth:	50.00 ft. below top of casing	**Water Column (WC):**	13.87 feet	*= 0.163 * WC for 2" wells	
Depth to Water:	36.13 ft. below top of casing	**Well Volume*:**	2.26 gallons	*= 0.653 * WC for 4" wells	
Depth to Product:	ND ft. below top of casing	**Volume Purged:**	5 gallons	*= 1.469 * WC for 6" wells	
Depth to top of screen:	35.00 ft. below top of casing	**Well Diam.:**	2 inches		
Depth to bottom of screen:	50.00 ft. below top of casing	**Purging Device (pump type):**			
Approx. Pump Intake:	43.00 ft. below top of casing	QED Bladder Pump			

Time	Depth to Water (Ft.)	Purge Rate (ml/min)	Temp (^{o}C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments (problems, odor, sheen)
945	36.13	235	15.5	0.719	6.20	5.99	228.3	198.7	Matrix spike/matrix spike duplicate (MS/MSD) collected from MW-1. No sheen or odor detected on purge water.
950	36.13	235	15.5	0.715	6.04	6.05	228.4	114.3	
955	36.13	235	15.5	0.710	6.06	6.10	230.4	200.8	
1000	36.13	235	15.5	0.708	6.06	6.15	231.7	236.2	
1005	36.13	235	15.6	0.711	6.20	6.15	231.1	200.9	
1010	36.13	235	15.6	0.713	6.25	6.17	231.1	185.6	
1015	36.13	235	15.6	0.716	6.63	6.18	232.3	18.3	
1020	36.13	235	15.6	0.717	6.64	6.18	232.9	6.6	
1025	36.13	235	15.6	0.715	6.53	6.18	232.4	9.8	
SAMPLING									
1105	36.13	235	15.6	0.718	6.07	6.18	232.5	23	
Stabilization Criteria:				**+/- 3 mS/cm**	**+/- 0.3 mg/L**	**+/- 0.1 pH units**	**+/- 10 mV**	**<50 NTU**	If water quality parameters do not stabilize and/or turbidity is greater than 50 NTU within two hours, discontinue purging and collect sample.

Groundwater samples analyzed for:VOCs, SVOCs, PCBs, pesticides, and TAL metals (total and dissolved).

Well Sampling Log

Job No:	20568.03	**Client:**	OER	**Well No:**	**MW-4**
Project Location:	7 Saratoga Avenue, Brooklyn, NY	**Sampled By:**	M. Levy, AKRF		
Date:	12/11/2017	**Sampling Time:**	12:30		
LEL at surface:	ND				
PID at surface:	2.8 ppm				
Total Depth:	50.00 ft. below top of casing	**Water Column (WC):**	13.70 feet	*= 0.163 * WC for 2" wells	
Depth to Water:	36.30 ft. below top of casing	**Well Volume*:**	2.23 gallons	*= 0.653 * WC for 4" wells	
Depth to Product:	ND ft. below top of casing	**Volume Purged:**	3.4 gallons	*= 1.469 * WC for 6" wells	
Depth to top of screen:	35.00 ft. below top of casing	**Well Diam.:**	2 inches		
Depth to bottom of screen:	50.00 ft. below top of casing	**Purging Device (pump type):**			
Approx. Pump Intake:	43.50 ft. below top of casing	QED Bladder Pump			

Time	Depth to Water (Ft.)	Purge Rate (ml/min)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments (problems, odor, sheen)
1155	36.30	200	15.1	0.769	7.76	6.17	243.6	70.1	Blind duplicate sample collected from MW-4. No sheen or odor detected on purge water.
1200	36.30	200	15.2	0.766	7.49	6.26	241.6	81.5	
1205	36.30	200	15.2	0.775	7.48	6.29	235.2	73.2	
1210	36.30	200	15.3	0.778	7.35	6.28	243.5	72.9	
1215	36.30	200	15.3	0.807	7.34	6.25	246.7	48.9	
1220	36.30	200	15.3	0.812	7.34	6.25	248.5	33.7	
1225	36.30	200	15.3	0.811	7.34	6.25	249.7	30.1	
SAMPLING									
1300	36.30	200	15.3	0.818	7.40	6.25	249.9	38.9	
Stabilization Criteria:				**+/- 3 mS/cm**	**+/- 0.3 mg/L**	**+/- 0.1 pH units**	**+/- 10 mV**	**<50 NTU**	If water quality parameters do not stabilize and/or turbidity is greater than 50 NTU within two hours, discontinue purging and collect sample.

Groundwater samples analyzed for:VOCs, SVOCs, PCBs, pesticides, and TAL metals (total and dissolved).

Well Sampling Log

Job No:	20568.03	**Client:**	OER	**Well No:**	**MW-11**
Project Location:	7 Saratoga Avenue, Brooklyn, NY	**Sampled By:**	M. Levy, AKRF		
Date:	12/11/2017	**Sampling Time:**	15:05		
LEL at surface:	ND				
PID at surface:	4.3 ppm				
Total Depth:	50.00 ft. below top of casing	**Water Column (WC):**	14.19 feet	*= 0.163 * WC for 2" wells	
Depth to Water:	35.81 ft. below top of casing	**Well Volume*:**	2.31 gallons	*= 0.653 * WC for 4" wells	
Depth to Product:	ND ft. below top of casing	**Volume Purged:**	4 gallons	*= 1.469 * WC for 6" wells	
Depth to top of screen:	35.00 ft. below top of casing	**Well Diam.:**	2 inches		
Depth to bottom of screen:	50.00 ft. below top of casing	**Purging Device (pump type):**			
Approx. Pump Intake:	44.00 ft. below top of casing	QED Bladder Pump			

Time	Depth to Water (Ft.)	Purge Rate (ml/min)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments (problems, odor, sheen)
1425	35.81	178	14.4	0.769	8.63	6.37	238.3	600.8	No sheen or odor detected on purge water
1430	35.81	178	14.7	0.786	8.47	6.37	241.8	469.7	
1435	35.81	178	14.8	0.781	8.19	6.37	253.2	382.5	
1440	35.81	178	15.1	0.785	8.05	6.37	266.6	130.8	
1445	35.81	178	15.2	0.777	8.07	6.38	267.4	125.5	
1450	35.81	178	15.1	0.780	7.99	6.37	271.5	49.9	
1455	35.81	178	15.1	0.784	7.86	6.35	274.6	49.4	
1500	35.81	178	15.1	0.783	7.86	6.35	275.9	48.5	
SAMPLING									
1550	35.81	178	15.1	0.781	7.92	6.38	281.8	49.7	
Stabilization Criteria:				**+/- 3 mS/cm**	**+/- 0.3 mg/L**	**+/- 0.1 pH units**	**+/- 10 mV**	**<50 NTU**	If water quality parameters do not stabilize and/or turbidity is greater than 50 NTU within two hours, discontinue purging and collect sample.

Groundwater samples analyzed for:VOCs, SVOCs, PCBs, pesticides, and TAL metals (total and dissolved).

APPENDIX C

INVESTIGATION DERIVED WASTE DISPOSAL MANIFEST

B 470

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. . . . . | Manifest Doc. No. 68078 | 2. Page 1 of

GENERATOR

3. Generator's Name and Mailing Address
NYC. Department of Housing Preservation and Development 100 Gold St New York 10038

4. Generator's Phone ( )

7 Saratoga Ave Brooklyn NY

5. Transporter 1 Company Name: **AARCO ENVIRONMENTAL SERVICES CORP.**

6. US EPA ID Number: **N.Y.R.0.0.0.1.0.7.3.2.6**

A. Transporter's Phone: **631-586-5900**

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
DALE TRANSFER CORP.
129 DALE STREET
WEST BABYLON, NY 11704

10. US EPA ID Number: **N/A**

C. Facility's Phone: **631-393-2882**

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. **NON-HAZARDOUS WASTE SOLID** Non Haz Soil	006	DM	01.200	P
b. **NON-HAZARDOUS WASTE LIQUID** Non Haz groundwater	004	DM	00.720	G
c.				
d.				

D. Additional Descriptions for Materials Listed Above
Profile # 2018-038 (Soil)
Profile # 2018-037 (Liquid)

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY PHONE # 631-586-5900

WO# 715-235944.

TRANSPORTER

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Matthew Levy of AARCO for NYC Department of Housing Preservation & Development | Signature | Month 02 | Day 05 | Year 18

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name: Marcelo Castillo | Signature | Month 02 | Day 05 | Year 18

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month . | Day . | Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Month . | Day . | Year .

GENERATOR'S COPY

SESI
CONSULTING
ENGINEERS

Geotechnical
Foundations
Land Planning
Geo-Structural
Environmental
Water Resources

Principals:

Steven P. Byszewski, PE, PP
Anthony Castillo, PE
Fuad Dahan, PhD, PE, LSRP
Roger Hendrickson
John M. Nederfield, PE
Justin M. Protasiewicz, PE
Kenneth Quazza, PE
Michael St. Pierre, PE

August 23, 2017
(Supplemental Data Added on May 9, 2018)

via email: r_fogliano@macquesten.com

Ms. Rella Fogliano, President
MacQuesten Construction Management, LLC
438 Fifth Avenue Suite 100
Pelham, NY 10803

RE: **Geotechnical Investigation and Report**
MWBE Site C
Brooklyn, New York
SESI Project No. 9753

Dear Ms. Fogliano:

In accordance with our Professional Services Agreement dated April 12, 2017, we have completed our geotechnical investigation for the above referenced project. This report contains a description of our investigation, an evaluation of the subsurface soil and groundwater conditions, and presents recommendations for general site preparation procedures and foundation design criteria for the planned construction.

If you have any questions, please call.

Sincerely,

SESI CONSULTING ENGINEERS D.P.C.

Christopher F. Zwingle, P.E.
Senior Project Engineer

c. Joseph Apicella (MacQuesten)

Encl: Geotechnical Investigation Report dated August 23, 2017 (Supplemental Data Added on May 9, 2018)

N:\PROJECTS\9753 - Brooklyn NY (MacQuesten)\Reports\9753 Geotechnical Report

SESI
CONSULTING
ENGINEERS

GEOTECHNICAL INVESTIGATION REPORT AND REPORT

For

MWBE Site C
1510-1512 Broadway
Brooklyn, New York

Prepared For:

MACQUESTEN CONSTRUCTION MANAGEMENT, LLC
438 Fifth Avenue, Suite 100
Pelham, NY 10803

Prepared By:

SESI CONSULTING ENGINEERS D.P.C.
12A Maple Avenue
Pine Brook, NJ 07058

Project No.: 9753

August 23, 2017
(Supplemental Data Added on May 9, 2018)

Christopher F. Zwingle, P.E.
NY PE License No. 61541

1.0 SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The study site is bounded to the north by the Halsey Street Station, an elevated NYC Transit Authority (NYCTA) station, which runs over Broadway, in Brooklyn, NY. The site is bounded to the south and east by Hancock Street, and to the west by Jefferson Ave. and Saratoga Ave. A two-story brick building lies adjacent to the south portion of the site. The site is a triangle shaped vacant lot, with mild vegetation growth, and six medium sized trees along the two-story brick building which runs adjacent to the lot.

A 60- foot high, mixed-use structure is planned for construction. The cellar, which will contain parking, has a proposed footprint of approximately 25,000 square feet and is currently planned to extend approximately 10-feet below the sidewalk level. The street level will contain commercial and other uses. Several levels of residential are proposed above the street level, extending to a total height of about 60 feet above the sidewalk.

At the time the borings were drilled and the test pits excavated, the site was level, and at approximately the same elevation as Broadway.

2.0 FIELD AND LABORATORY INVESTIGATIONS

2.1 August 2017 Field investigation

Our geotechnical engineering study consisted of a site reconnaissance, a review of existing soils and geologic data, and a field investigation consisting of drilling nine (9) soil borings (B1 through B9). The borings were all drilled to a depth of 52-feet below existing grade (ft-bg). Temporary, two-inch diameter groundwater monitoring wells were installed to depths of 42, 50, and 50 ft-bg in boreholes B2, B5 and B8.

2.2 March and April 2018 Field Investigation

On March into April 2018 a supplemental field investigation was performed, consisting of drilling four (4) additional soil borings (B10 through B13), and excavating three (3) test pits (TP1, TP2, TP3). This supplemental investigation was performed in the south and southeast portion of the site to obtain additional geotechnical data for the design of the support of excavation (SOE) system. SESI is not developing the SOE design, but has obtained the geotechnical data necessary for the design.

The supplemental borings were drilled to a depth of 52-ft-bg, except B13 which was drilled to 22-ft-bg. The test pits were excavated using a New Holland LB-620 articulated backhoe, the test pits were performed to determine the depth of the adjacent buildings basement. The test pits ranged in depths from 6.5 to 10.0 ft-bg.

Temporary, limited access was granted by the tenant of the existing two-story building to the south. This building contains a partial basement level which extends to 12 ft-bg. We did not have access to the entire building basement, so we do not know if there is another partial basement level or not.

2.3 General

The 13 borings and three test pits exceeds the geotechnical investigation requirements outlined in Section 1802.4.1 of the 2014 NYC Building Code (NYC BC).

All the borings and test pits were located within 200-feet of the NYCTA elevated railroad. SESI filed an application for a no-impact determination from the NYCTA on June 21, 2017, for the August 2017 field investigation. A no-impact determination letter was received from the NYCTA, dated June 23, 2017.

The borings were drilled at the locations shown on **Figure 1 - Boring Location Plan**. Prior to drilling the borings, a geophysical survey of the boring locations was performed to determine if any utilities were present at the boring locations. This survey was conducted twice: once before the August 2017 investigation, and a second time just before the March/April 2018 investigation. The survey incorporated a hand-held metal detector, an electromagnetic utility locating device, and ground penetrating radar. Individual soil boring logs and test pit logs, which describe the materials encountered, are included in **Appendix A**.

Soil samples were obtained for classification in accordance with the procedures of the Standard Penetration Test (ASTM D-1586). For this test, a standard split-spoon sampler (2 inches outside diameter, one and three-eighths inches inside diameter) is driven into the soil by a 140-pound weight falling 30 inches. After discounting the initial six inches of penetration, due to possible disturbance of the material, the number of blows required to drive the sampler 12-inches is recorded and designated as the standard penetration resistance or “N” value. The “N” value is an indication of the relative compactness of the soil in-situ.

The borings satisfy the special inspections requirement of section 1704.7.4.1 of the NYC BC. The borings were performed in substantial accordance with section 1802.5 of the NYC BC. All fieldwork was performed under the technical direction of a New York Professional Engineer from SESI Consulting Engineers D.P.C. Our field engineer maintained continuous logs of the explorations as work proceeded and coordinated the soil sampling operations to develop the required subsurface information. The borings were drilled to the depths indicated on the logs. The description and classification of the soils are a true description of the samples recovered at the levels indicated.

Laboratory classification testing consisted of eight (8) water content determinations and eight (8) mechanical grain size analyses. The results of the water contents and percent passing sieve No. 200 tests are presented on the boring logs. The results of the mechanical grain size analyses are presented in graphical form in **Appendix B**.

3.0 SUBSURFACE CONDITIONS

The site soils consist of a layer of uncontrolled fill overlying natural sand soils. The soil conditions, from the ground surface, down, are described below. The soils are classified per the NYC BC Table 1804.1.

Uncontrolled Fill (NYC BC Class 7)

A miscellaneous, uncontrolled fill was encountered in the borings to depths of 5 to 21 ft-bg. The fill contains sand soil, with small, but varying amounts of silt and gravel, mixed with brick, concrete, asphalt, and wood. The fill consists of soil which is very similar to the natural glacial sands which lie below the fill layer. Thus, it was often difficult to distinguish the exact boundary separating the fill layer from the underlying natural soils. This fill is in a loose to medium dense condition.

The bearing capacity, or strength, of this uncontrolled fill layer is low because it is in a non-compact condition and contains some organic materials; it is unacceptable for supporting the proposed structural foundation loads. This fill material is classified as Class 7 "Uncontrolled Fill," as defined by the NYC BC Table 1804.1. This fill material does not have a presumptive maximum allowable bearing capacity per the NYC BC.

Natural Glacial Sands (NYC BC Class 3a and 3b)

Natural glacial outwash sand soils were encountered beneath the existing fill and extended to the bottoms of the borings. These sand soils mostly consist of coarse-fine sands, with smaller but varying amounts of silt and gravel. The silt content of these soils is low, typically less than 10 percent by weight. Based on the blow counts obtained during the soil sampling, these natural sand soils are in a medium dense to very dense condition and will provide suitable support for the anticipated loads. In accordance with the NYC BC, this material is a Class 3a and 3b soil – "Medium to Dense Granular Soils."

Groundwater

Groundwater was encountered at a depth of 35 ft-bg in the temporary monitoring wells and the borings. The depth to groundwater should be expected to vary seasonally and with wet weather.

Bedrock

Bedrock was not encountered in any of the borings.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General

The layer of loose to very dense uncontrolled fill extends to depths of 5 to 21 ft-bg. The fill overlies natural, medium dense to dense, sand soil, with varying amounts of silt and gravel. Groundwater will likely not be encountered during the site construction, as it exists approximately 35 ft-bg.

The uncontrolled fill is considered poor from a foundation bearing standpoint. In accordance with the NYC BC, presumptive allowable bearing pressures cannot be utilized for the Class 7 uncontrolled fill materials; rather (the bearing capacity would need to be determined on a site-specific basis). The natural sands below the layer of uncontrolled fill, however, are suitable for support of the anticipated building loads on conventional shallow foundations or a mat foundation.

The cellar should bear on the natural sands, as the cellar is proposed to extend 10 feet below the sidewalk level. However, in the areas of deeper fills, the fill will need to be removed and replaced with controlled compacted fill.

A support-of-excavation (SOE) system will need to be constructed around the perimeter of the proposed cellar footprint.

4.2 Site and Building Area Preparation Procedures

In general, the site preparation procedures should consist of removing the uncontrolled fill within the footprint of the proposed cellar to the natural sand soils. Areas of deeper fills will need to be removed and replaced with controlled, compacted fill. A temporary SOE system will be required.

The mass excavation within the cellar footprint should continue through all fill into the natural soils. Once the bottom of the excavation has been achieved, it should be proof-rolled with a vibratory roller. Any backfill necessary to attain the proposed finished grade should be constructed as a controlled compacted fill, utilizing a suitable granular material obtained either from on-site or off-site sources. As an alternate, ¾-inch clean crushed stone may be used in the construction of the compacted fill.

All structural, compacted fill should be placed in maximum 12-inch thick lifts, with each layer compacted to the required density using a vibratory roller acceptable to the Geotechnical Engineer. Structural fill should be compacted to 95 percent of the maximum Modified Proctor density (ASTM D 1557).

Much of the existing on-site fill should be suitable for re-use as structural fill. Off-site borrow material, if required, should have a maximum particle size of 3-inches and the maximum amount of fines (percentage by weight passing a No. 200 mesh sieve) should be 15% to help facilitate construction during wet weather. The “fines” should be non-plastic.

Backfill in confined areas, such as utility trenches and foundations within load bearing or paved areas, should be placed in maximum 6-inch thick layers and compacted to a minimum of 92 percent and average of 95 percent density, as described above.

Groundwater was measured in the borings to be approximately 35 ft-bg, but this could change seasonally and with wet weather. Regardless, it is unlikely that groundwater will be encountered during the proposed construction.

A pre-construction condition survey should be conducted of the adjacent buildings and structures surrounding the site prior to any construction activities. This could help protect the Owner from potential claims of construction-induced damage. Also, the proposed SOE design will need to be submitted to the NYCTA for approval, given the proximity of the NYCTA tracks to the proposed construction.

4.3 Support of Excavation (SOE)

A SOE system will need to be constructed to support the streets, utilities, the elevated NYCTA structure, and loads to be developed due to construction (e.g., trucks, crane outriggers). It is noted that while excavating TP3, a utility pipe was encountered 5.5 ft-bg; this may be an active water line, based on seepage observed around the pipe. The SOE design may require the use

of soldier piles and lagging, with the piles installed and grouted in pre-drilled boreholes. This is because driving piles using a hammer may develop unacceptable vibrations for the surrounding structures, particularly the NYCTA structure.

The SOE will need to support much of, or possibly all the existing two-story building, which lies to the south and which is not slated for demolition. The north side of this building was investigated using test pits TP1 and TP2. At these locations, the existing foundation extended to a depth of approximately 5 ft-bg. It is believed to extend deeper in the western-most corner, where a partial basement exists.

It is possible that much of the SOE could be designed as a cantilever structure, which would not require temporary soil anchor tiebacks. However, some areas of the SOE may require the installation of tiebacks, particularly if the SOE is required to extend deeper to facilitate excavation of the deeper fills. The thickness of the fill layer is typically 10 feet or less, except in the following seven borings: B2 – 15 feet, B3 – 13 feet, B4 – 17 feet, B7 – 21 feet, B10 – 17 feet, B11 – 14 feet, and B13 – 15 feet. (These fills need to be removed and replaced with structural fill for support of the new building.) Tie-backs beyond the property lines will require approval from the NYCTA (to the north) and NYC Department of Building; temporary easements may be required.

The natural sand soils, due to the low silt content, may have limited stability in an open cut. Our experience on a recent similar project required that the sand soils be grouted prior to the installation of timber lagging, to minimize caving of the excavation behind the SOE during installation of the lagging.

4.4 Foundation and Slab Design Criteria

After satisfactory completion of the mass excavation and construction of structural compacted fills, conventional shallow foundations and a slab-on-grade may be constructed within the natural sand soils for the proposed structure. Footings may be designed for a maximum net allowable bearing pressure of 3.0 tons per square foot (tsf, or 6,000 pounds per square foot, psf). This is consistent with the presumptive allowable bearing capacity of the site soils, listed on Table 1804.1 of the 2014 NYC BC. Regardless of the loads, the minimum plan dimension of isolated footings should be 36-inches and the minimum width of continuous footings should be 24-inches.

The bottom of the footing excavations could become disturbed if left open to the weather and construction activity. Footing excavations should be left open for as short a time as practical to avoid excessive disturbance to the exposed subgrade. Any areas that become soft should be excavated to stable material and backfilled with ¾-inch clean crushed stone or controlled compacted fill.
The cellar floor slab should be designed using a subgrade modulus of 175 pounds per cubic inch (pci), if 6-inches of crushed stone is placed beneath the slab.

The final construction should experience post-construction total settlements of less than 1-inch, with maximum differential settlements in a 30-foot span of less than ½-inch. This is based on satisfactory completion of the outlined site and building area preparation procedures, with the foundations founded on the natural sandy soils or the compacted structural fill,

4.5 Seismic Evaluation

The soil profile at the site is classified as a "stiff soil profile," per the NYC BC, table 1613.5.2. The seismic design parameters listed in the below table should be used.

Description	Parameter	Recommended Value	2014 NYC BC Reference
Mapped Spectral Acceleration for short periods	**S_s**	**0.281 g**	Section 1613.5.1
Mapped Spectral Acceleration for 1-sec period	**S_1**	**0.073 g**	Section 1613.5.1
Site Class	**D**		Table 1613.5.2
Site Coefficient	**F_a**	**1.57**	Table 1613.5.3(1)
Site Coefficient	**F_v**	**2.40**	Table 1613.5.3(2)
5 percent damped design spectra response acceleration at short periods:	**S_{DS}**	**0.294 g**	Section 1613.5.4
5 percent damped design spectral response acceleration at 1-sec period:	**S_{D1}**	**0.117 g**	Section 1613.5.4

The proposed construction will be subject to the requirements of **Seismic Design Category** (**SDC**) **B,** in accordance with Section 1613.5.6 of the NYC BC, and tables 1613.5.6(1) and (2). This is based on the above parameters, and the anticipated Structural Occupancy/Risk Category of III (NYC BC table 1604.5). This should be confirmed by the project structural engineer.

4.6 Liquefaction Potential

The 2014 NYC BC, Section 1813.1, requires an evaluation of the liquefaction potential of non-cohesive soils below the groundwater table, and up to 50 feet below the ground surface. The site soils are non-cohesive granular soils and the groundwater table is approximately 35 ft-bg; therefore, the liquefaction analysis was performed on the soils from 35 to 50 ft-bg.

The analysis demonstrates that liquefaction of the soils does not need to be considered for foundation design for this project. The standard penetration test (SPT; blow counts) "N" values from the borings were corrected to the N_{60} values as required by the NYC BC. Graphs of the N_{60} values for the nine borings versus depth, relative to Structural Occupancy/Risk Category III (reference NYC BC, table 1604.5), are presented in **Appendix C.**

4.7 Underpinning

The existing adjacent building to the south of the proposed construction may require further investigation, to determine the nature of the foundation and the extent and depths of the below grade portions of the building. Underpinning of the existing building may or may not be required.

4.8 Permanent Below Grade Walls

Permanent below grade walls should be designed to resist lateral loadings from static earth pressure, water pressure, and surcharge loading, including construction crane loading. Backfill should not be placed against below-grade walls until the concrete has reached its 28-day compressive strength and after adequate lateral bracing has been provided to prevent rotation of the wall. We recommend the following design parameters:

4.9 Slopes and Excavations

All excavations within the SOE greater than 4-feet in depth should have the sides sloped back or be appropriately sheeted and braced in accordance with all local, State, and OSHA requirements, including but not limited to, temporary shoring, trench boxes and benching and be evaluated by a qualified Geotechnical Engineer.

4.10 Utility Lines

The site soils will provide suitable support for utility lines. Cobbles greater than 4 inches in diameter should be removed from the utility line subgrade or a minimum 4-inch thick sand layer should be placed beneath the utility lines.

Backfill material, placed around utility lines to 6-inches above the utility lines, should have a maximum particle size of 1.5-inches. Backfill of utility trenches that fall within load-bearing areas should be placed in maximum 8-inch thick lifts and compacted to a minimum of 92 percent and average of 95 percent of Modified Proctor density (ASTM D-1557).

5.0 TESTING REQUIREMENTS

During the placement of all controlled, compacted, structural fill, visual observations and density tests should be performed to determine the adequacy of the compaction. Density testing should be done in accordance with the following minimum frequency requirements:

Building Areas: minimum of 4 tests per 12-inch lift; spacing not to exceed 25 feet between test locations.

Minimum density requirements are outlined in the previous sections of this report. A summary of recommended soil design parameters is included in Table 1.

6.0 ENGINEERING INSPECTION

The recommendations presented in the previous sections of this report assume that the site preparation procedures will be done under engineering inspection by a representative of this

office. SESI can provide the required NYC BC Special Inspections for this project. This includes site preparation, fill placement, in-place density, etc.

7.0 LIMITATIONS

The subsurface data presented herein identifies the subsurface conditions only at the location of the test hole and at the depths where the samples were taken. SESI Consulting Engineers D.P.C. reviews the published geologic data and the field data and uses professional judgment and experience to render an opinion on the subsurface conditions throughout the site. Because the actual subsurface conditions may differ, we recommend that SESI be retained to provide construction inspection to minimize the risks associated with unanticipated conditions.

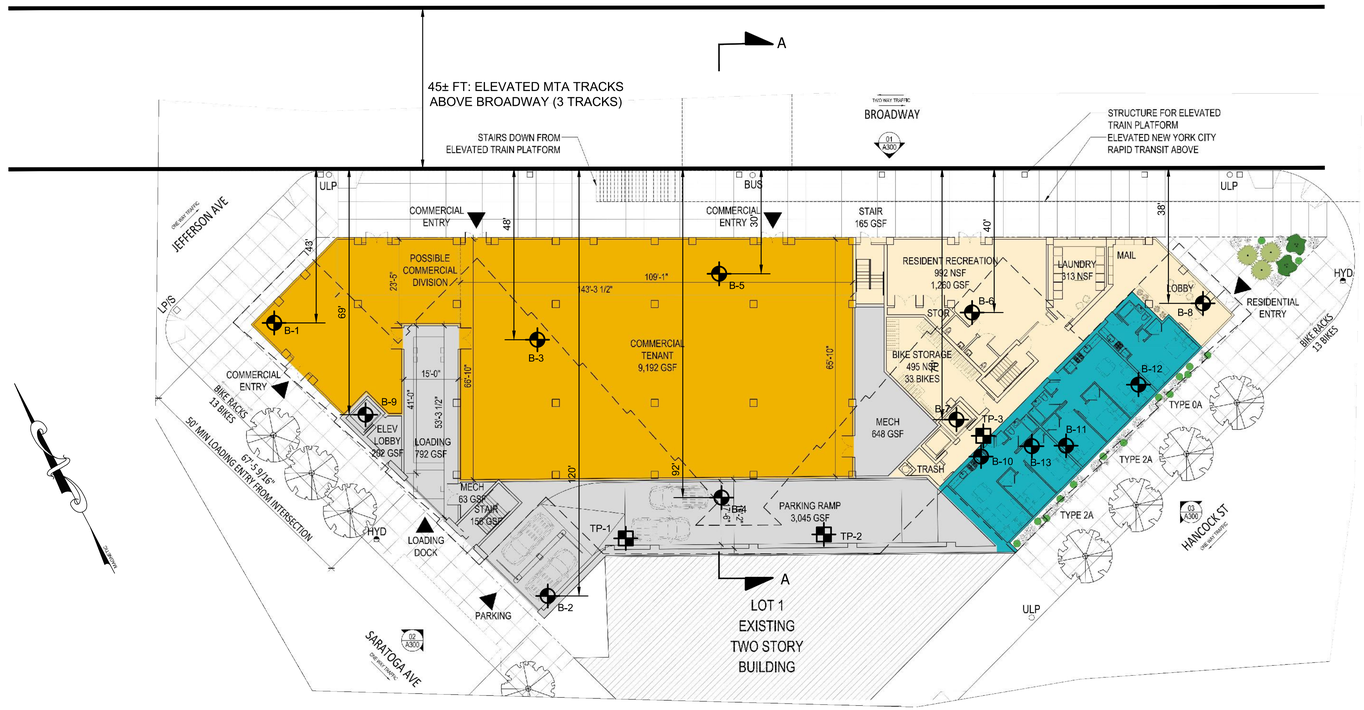
This report should not be used:

- When the nature of the proposed construction is changed;
- When the size or configuration of the proposed construction is altered;
- When the location or orientation of the proposed construction is modified;
- When there is a change in ownership; or
- For application to an adjacent or any other site.

SESI shall not accept any responsibility for problems which may occur if SESI is not consulted when there are changes to the factors considered in this report's development. The soil logs should not be separated from the engineering report to minimize the likelihood of soil log misinterpretation.

8.0 DISCLAIMER

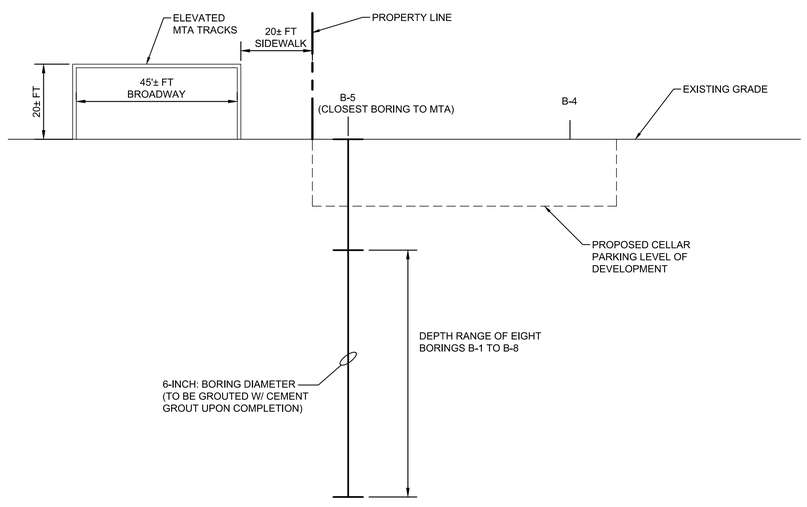
This Report was prepared by SESI for the sole and exclusive use of MacQuesten Construction Management LLC. Nothing under the Professional Services Agreement between SESI and its client, MacQuesten Construction Management LLC shall be constructed to give any rights or benefits to anyone other than client and SESI, and all duties and responsibilities undertaken pursuant to the Agreement will be for the sole and exclusive benefit of client and SESI and not for the benefit of any other party. This report has been prepared and issued subject to the express conditions that same is not to be disseminated to anyone other than client, without the advance written consent of SESI (which SESI, in its sole discretion, is free to grant or withhold). Use of the report by any other person is unauthorized and such use is at the sole risk of the user.



KEY MAP
SCALE: N.T.S.

Scale: 1"= 20'
0 10 20 40 60 80

NOTE:
PROPERTY SITUATED AT 1510, 1512, 1514, 1520, 1522, 1524 BROADWAY & 7 SARATOGA AVE. TAX BLOCK 1489; LOTS 6, 11, 12, 13, 14, 15, 16, 17, 18.



SECTION A-A
SCALE: 1" = 20'

NOTE:
THIS PLAN IS FOR LOCATING BORINGS ONLY.
OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:
B-1 - APPROX. LOCATION AND NO. OF PROPOSED BORING

REFERENCE
SITE INFORMATION TAKEN FROM "FIRST FLOOR PLAN" PREPARED BY MACQUESTEN CONSTRUCTION MANAGEMENT LLC. UNDATED.

SCOPE OF WORK

The proposed construction consists of a mixed-use redevelopment of vacant lots. There will be one level of below grade parking; a first floor level of commercial space, and five levels of residential. The total building height will be 60 feet above grade, and 10 feet below-grade. Eight proposed borings are located within 200 feet of the MTA elevated train station and are shown on the attached Proposed Boring and Test Pit Location Plan. The borings will extend to depths between 30 and 100 feet below existing grade.

SOIL BORING PROCEDURES

1) Position drill rig over proposed boring location and extend stabilizers on the drill rig to secure the drill rig. Raise the drilling tower.
2) If the surface of the ground is covered with asphalt, use a solid auger to auger through the existing asphalt to the subgrade soil. If soil is present at the surface this step may be eliminated.
3) Using a split-spoon sampler, perform the Standard Penetration Test in accordance with ASTM D 1586, beginning at the existing ground surface elevation and at each subsequent sample depth. Drive the split-spoon sampler into the ground a distance of 24–inches. Retrieve the sampler from the ground and advance hole using hollow-stem augers to 24 inches and repeat sampling operation at this depth. Retrieve the sampler from the ground and advance hole using hollow-stem augers to 48 inches and repeat sampling operation at this depth. Retrieve the sampler and hollow-stem augers from the ground and install a five (5) foot section of 4-inch pipe casing into the auger hole.
4) Once casing has been installed, using a tri-cone roller bit; flush out the soil from within the casing using bentonite and water slurry.
5) Once flushed clean of the soil cuttings, the roller bit should be advanced to 6 feet. Once attained the bit should be removed and replaced with the split-spoon sampler. Drive the split-spoon sampler into the ground a distance of 24–inches. Retrieve the sampler from the ground and advance hole with the tri-cone roller bit to 8 feet and repeat sampling operation at this depth.
6) Retrieve the sampler from the ground and advance the existing casing with an additional five (5) foot section of 4-inch pipe casing. Once the casing has been advanced, use the tri-cone roller bit to flush out the soil from within the casing using bentonite and water slurry.
7) Repeat sequence of soil sampling operations at five foot intervals until the maximum boring depth is attained.
8) Should an obstruction be encountered prior to attaining the completion depth of the proposed boring, the obstruction may be cored using an NX double core barrel fitted with a diamond cutting edge. The obstruction will be cored a minimum of 5 feet to identify the nature of the obstruction. Recovery rates and Rock Quality Designations will be measured on all retrieved cores.
9) Should soft compressible or organic soils be encountered and undisturbed samples were required, these soils may be sampled using 3-inch thin walled Shelby Tubes in accordance with ASTM D 1587. The bore hole would be flushed of all soil cuttings prior to the sampling operation. Once the hole has been flushed, the Shelby Tube is lowered into the borehole to the bottom. Once at the bottom, the Shelby Tube is pressed 24 – inches into the subgrade soil under one continuous uniform press. The tube should be allowed to sit 5 minutes after the pressing has been completed for the sample and the water surrounding the tube to stabilize. After the 5-minute wait period, the drill rod connected to the Shelby Tube should be rotated by hand several times to shear off the soil at the base of the tube. Once sheared at the base the tube may be removed from the borehole and sealed. Drilling may resume to the next soil sampling depth.
10) Upon completion of the boring, the hole will be backfilled with grout and the casing installed will be pulled from the ground.

THE PURPOSE OF THIS DRAWING IS TO OBTAIN A LETTER - OF - NO - IMPACT FROM THE NYC MTA FOR THE EIGHT PROPOSED BORINGS B-1 TO B-8

rev	date	description	by
1	10/27/17	ADD BORINGS AND TEST PITS	yy

dwg by: yy
chk by: CZ
scale: 1" = 20'
date: 6/20/17

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE., PINE BROOK, NJ., 07058 PH: 973-808-9050

CHRISTOPHER F. ZWINGLE, P.E.
PROFESSIONAL ENGINEER
N.Y. LIC. NO. 61541

MACQUESTEN CONSTRUCTION MANAGEMENT, LLC
MWBE SITE C
1510-1524 BROADWAY
BROOKLYN, NEW YORK

drawing title:
BORING LOCATION PLAN

job no. 9753
drawing no.
FIG-1

1 of 1

N:\ACAD\9753\9753 BORING LOCATION PLAN.dwg, FIG-1, 5/9/2018 11:24:24 AM, 1:1

Appendix A

13 Boring and 3 Test Pit Logs

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-1
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL
BORING BY: Granese Drilling Inc.	DATE STARTED:	8/3/2017	GROUNDWATER TABLE DEPTH	
INSPECTOR: MZ	DATE COMPLETED:	8/3/2017	0 Hr. 35' b.g. Date 8/3/17	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
5											
	S-1	8	5		6	13				FILL: Brown coarse to fine SAND, little Gravel with Brick, trace Silt	F
				7			4	9	17	(NYC BC Class 7 Soil)	
	S-2	6	7		6	10				FILL: Same (NYC BC Class 7 Soil)	F
				9			10	9	20	Brown coarse to fine SAND, trace Gravel, trace Silt (NYC BC Class 3a Soil)	SW
10											
	S-3	8	10		13	18				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				12			22	10	40	(NYC BC Class 3a Soil) (W.C. = 4.7%) (Minus #200 Sieve = 3.9%)	
15											
	S-4	21	15		4	6				Same (NYC BC Class 3b Soil)	SW
				17			10	10	16		
20											
	S-5	9	20		12	13				Same (NYC BC Class 3b Soil)	SW
				22			10	13	23		
25											
	S-6	24	25		6	10				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				27			15	17	25	(NYC BC Class 3b Soil)	
30											
	S-7	20	30		11	17				Same (NYC BC Class 3a Soil)	SW
				32			24	23	41		
35											
	S-8	17	35		9	11				Same; grading to little Gravel (NYC BC Class 3b Soil)	SW
				37			11	13	22	(sample is wet)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

The subsurface information shown hereon was obtained for the design and estimating purposes for our client. It is made available to authorized users only that they may have access to the same information available to our client. It is presented in good faith, but it is not intended as a substitute for investigations, interpretations or judgment of such authorized users. Information on the logs should not be relied upon without the geotechnical engineers recommendations contained in the report from which these logs were extracted.

Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 1

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-1**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/3/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/3/2017	0 Hr. 35' b.g.	Date 8/3/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-9	24	40		4	8				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			12	15	19	(NYC BC Class 3b Soil)	
45											
	S-10	24	45		7	9				Same (NYC BC Class 3b Soil)	SW
				47			14	24	23		
50											
	S-11	24	50		3	10				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				52			22	17	32	(NYC BC Class 3a Soil)	
55										Boring Completed @ 52'	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

The subsurface information shown hereon was obtained for the design and estimating purposes for our client. It is made available to authorized users only that they may have access to the same information available to our client. It is presented in good faith, but it is not intended as a substitute for investigations, interpretations or judgment of such authorized users. Information on the logs should not be relied upon without the geotechnical engineers recommendations contained in the report from which these logs were extracted.

Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 1

SESI CONSULTING ENGINEERS				PROJECT NAME:	MWBE Site C			BORING NO.	B-2
				LOCATION:	1510-1524 Broadway, Brooklyn NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	STREET LEVEL
BORING BY:	Granese Drilling Inc.			DATE STARTED:	8/1/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR:	CFZ/MZ			DATE COMPLETED:	8/1/2017	0 Hr. 35' b.g.	Date 8/1/17	24 Hr. 35.85' b.g.	Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-1	7	0		3	5				FILL: Brown coarse to fine SAND, little Gravel, trace Silt	F
				2			5	50/3"	10	(NYC BC Class 7 Soil)	
										Rig Chatter, drilled through rock	
	S-2	16	3		14	20				FILL: Brown coarse to fine SAND, little Gravel, trace Silt (rock in tip) (Class 7)	F
5				5			50/4"		50+	Rig Chatter, drilled through rock	
	S-3	2	5		45	6				FILL: Brown coarse to fine SAND, little Gravel with Brick, trace Silt	F
				7			5	6	11	(NYC BC Class 7 Soil)	
	S-4	12	7		7	11				FILL: Brown coarse to fine SAND, little Gravel with Brick and Concrete,	F
				9			50/5"		50+	trace Silt (NYC BC Class 7 Soil)	
10											
	S-5	15	10		24	11				FILL: Light Brown coarse to fine SAND, little Gravel with Brick and	F
				12			22	22	33	Concrete, trace Silt (NYC BC Class 7 Soil)	
15										Drill Chatter, cobbles	
	S-6	12	15		40	19				Brown coarse to fine SAND, somee Gravel, little Silt	SW
				17			8	10	27	(NYC BC Class 3b Soil) (W.C. = 8.3%) (Minus #200 Sieve = 12.5%)	
20											
	S-7	10	20		49	54					
				22			24	17	78	Same; grading to little Gravel	SW
										(NYC BC Class 3a Soil)	
25											
	S-8	15	25		17	15				Same (NYC BC Class 3a Soil)	SW
				27			24	20	39		
30											
	S-9	18	30		17	15				Same (NYC BC Class 3a Soil)	SW
				32			18	16	33		
35											
	S-10	17	35		12	13				Same	SW
				37			18	16	31	(sample is wet) (NYC BC Class 3a Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 2

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-2**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/1/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/1/2017	0 Hr. 35' b.g.	Date 8/1/17	24 Hr. 35.85' b.g.	Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N (bl/ft)	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
40		(in)	(ft)	(ft)							
	S-11	20	40		11	16				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			25	23	41	(NYC BC Class 3a Soil)	
45											
	S-12	24	45		6	9				Same (NYC BC Class 3b Soil)	SW
				47			17	20	26		
50											
	S-13	24	50		15	10				Brown coarse to fine SAND, little Gravel, little Silt	SW
				52			10	15	20	(NYC BC Class 3b Soil)	
										Boring Completed @ 52'	
55										Set Temporary 2" Diameter Monitoring Well @ 42' below grade	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS

PROJECT NAME:	MWBE Site C	BORING NO.	**B-3**
LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL
BORING BY: Granese Drilling Inc	DATE STARTED: 8/3/2017	GROUNDWATER TABLE DEPTH	
INSPECTOR: MZ	DATE COMPLETED: 8/3/2017	0 Hr. 35' b.g. Date 8/3/17	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
										Rig Jumping	
										(boulders and cobbles)	
5											
	S-1	9	5		22	6				FILL: Brown coarse to fine SAND, little Gravel with Brick and concrete,	F
				7			5	4	11	trace Silt (NYC BC Class 7 Soil)	
	S-2	8	7		6	6				same (NYC BC Class 7 Soil)	F
				9			3	6	9		
10											
	S-3	9	10		4	3				FILL: Brown coarse to fine SAND, little Gravel with Brick, trace Silt	F
				12			2	3	5	(NYC BC Class 7 Soil)	
	S-4	12	12		2	4				Same (NYC BC Class 7 Soil)	F
				14			3	2	7	Brown coarse to fine SAND, trace Gravel, trace Silt (NYC BC Class 6 Soil)	SW
15											
	S-5	13	15		4	4				Same (NYC BC Class 6 Soil)	SW
				17			4	4	8		
20											
	S-6	18	20		8	7				Brown coarse to fine SAND, some Gravel, trace Silt	SW
				22			9	8	16	(NYC BC Class 3b Soil) (W.C.=3.9%) (Minus #200 Sieve = 2.6%)	
25											
	S-7	15	25		14	9				Same (NYC BC Class 3b Soil)	SW
				27			9	12	18		
30											
	S-8	15	30		73	47				Brown coarse to fine SAND, some Gravel, trace Silt	SW
				32			12	14	59	(NYC BC Class 3a Soil) (W.C.=4.7%) (Minus #200 Sieve = 4.2%)	
35											
	S-9	4	35		40	24				Same; grading to trace Gravel (NYC BC Class 3a Soil)	SW
				37			16	14	40	(sample is wet)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 3

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-3**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/3/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/3/2017	0 Hr. 35' b.g.	Date 8/3/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-10	24	40		7	10				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			14	18	24	(NYC BC Class 3b Soil) (W.C.=18.7%) (Minus #200 Sieve = 3.6%)	
45											
	S-11	21	45		18	9				Same (NYC BC Class 3b Soil)	SW
				47			11	15	20		
50											
	S-12	20	50		6	8				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			12	14	20	(NYC BC Class 3b Soil) (W.C.=20.6%) (Minus #200 Sieve = 2.5%)	
55										Boring Completed @ 52'	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 3

SESI CONSULTING ENGINEERS				PROJECT NAME:	MWBE Site C			BORING NO.	B-4
				LOCATION:	1510-1524 Broadway, Brooklyn NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	STREET LEVEL
BORING BY:	Granese Drilling Inc.			DATE STARTED:	8/2/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR:	MZ			DATE COMPLETED:	8/3/2017	0 Hr. 35' b.g.	Date 8/2/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
										Rig Chatter, Drilling through Boulders	
5											
	S-1	17	5		21	16				FILL: Brown to Tan coarse to fine SAND, trace Gravel, trace Silt	F
				7			15	34	31	(crushed mica schist in tip) (NYC BC Class 7 Soil)	
	S-2	17	7		63	33				FILL: Crushed mica schist (NYC BC Class 7 Soil)	F
				9			32	27	65	grading to… Tan coarse to fine SAND, trace Gravel, trace Silt	
10											
	S-3	10	10		85	49				FILL: Light Brown to Tan coarse to fine SAND, trace Gravel, trace Silt	F
				12			42	34	91	with crushed rock (NYC BC Class 7 Soil)	
										Rig chatter @ 13 FEET	
15											
	S-4	12	15		52	73				FILL: Brown to Tan coarse to fine SAND, trace Gravel, trace Silt	
				17			64	61	>100	(NYC BC Class 7 Soil)	
	S-5	16	17		17	12				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				19			10	13	22	(NYC BC Class 3b Soil)	
20											
	S-6	15	20		22	6				Brown coarse to fine SAND, trace Silt	SW
				22			8	9	14	(NYC BC Class 3b Soil)	
25											
	S-7	12	25		14	12				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				27			10	14	22	(NYC BC Class 3b Soil)	
30											
	S-8	18	30		13	16				Same (NYC BC Class 3a Soil)	SW
				32			14	12	30		
35											
	S-9	16	35		9	9				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				37			10	11	25	(sample is wet) (NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 4

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-4
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/2/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/3/2017	0 Hr. 35' b.g.	Date 8/2/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-10	24	40		7	16				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			16	20	32	(NYC BC Class 3a Soil)	
45	S-11	24	45		6	13				Same (NYC BC Class 3a Soil)	SW
				47			17	16	30		
50	S-12	24	50		6	6				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			12	14	18	(NYC BC Class 3b Soil)	
55										Boring Completed @ 52'	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 4

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-5
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED: 8/1/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED: 8/1/2017	0 Hr. 35' b.g.	Date 8/1/17	24 Hr. 35.75' g.b.	Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N (bl/ft)	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
0		(in)	(ft)	(ft)							
5											
	S-1	7	5		4	2				FILL: Brown coarse to fine SAND, little Gravel with Brick, trace Silt	F
				7			1	1	3	(NYC BC Class 7 Soil)	
10											
	S-2	17	10		11	10				Brown coarse to fine SAND, some Gravel, trace Silt	SW
				12			24	12	34	(NYC BC Class 3a Soil) (W.C. = 8.3%) (Minus #200 Sieve = 5.3%)	
	S-3	14	12		10	10				same (NYC BC Class 3b Soil)	
				14			8	7	18		
15										Rig Chatter @ 14 FEET	
	S-4	12	15		12	46				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				17			11	5	47	(NYC BC Class 3a Soil)	
	S-5	14	17		7	8				Same; grading to little Gravel(NYC BC Class 3b Soil)	SW
				19			8	12	16		
20											
	S-6	12	20		15	17				Same; grading to trace Gravel (NYC BC Class 3b Soil)	SW
				22			8	9	25		
25											
	S-7	17	25		6	9				Same; grading to little Gravel (NYC BC Class 3b Soil)	SW
				27			12	13	21		
30											
	S-8	20	30		6	9				Same (NYC BC Class 3b Soil)	SW
				32			12	11	21		
35											
	S-9	18	35		6	9				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				37			13	14	22	(sample is wet) (NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 5

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-5**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/1/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/1/2017	0 Hr. 35' b.g.	Date 8/1/17	24 Hr. 35.75' b.g.	Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N (bl/ft)	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
40		(in)	(ft)	(ft)							
	S-10	10	40		7	9				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				42			9	10	18	(NYC BC Class 3b Soil)	
45	S-11	18	45		6	12				Same; grading to trace Gravel (NYC BC Class 3b Soil)	SW
				47			15	19	27		
50	S-12	20	50		6	13				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			13	17	26	(NYC BC Class 3b Soil)	
										Boring Completed @ 52'	
55										Set Temporary 2" Diameter Monitoring Well @ 50' below grade	
										Notes: (1) Borehole backfilled with drilling spoils	
60										(2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 5

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-6
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL
BORING BY: Granese Drilling Inc.	DATE STARTED:	8/2/2017	GROUNDWATER TABLE DEPTH	
INSPECTOR: MZ	DATE COMPLETED:	8/2/2017	0 Hr. 35' b.g. Date 8/2/17	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
										Rig Chatter, Drilling through Boulders	
5											
	S-1	6	5		3	3				FILL: Brown coarse to fine SAND, little Gravel with Bric, trace Silt	F
				7			2	1	5	(NYC BC Class 7 Soil)	
	S-2	17	7		3	5				same (NYC BC Class 7 Soil)	F
				9			5	3	10	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
10										(NYC BC Class 3b Soil)	
	S-3	20	10		14	21				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				12			16	11	37	(NYC BC Class 3a Soil)	
15											
	S-4	20	15		6	8				Same (NYC BC Class 3b Soil)	SW
				17			7	13	15		
20											
	S-5	19	20		5	6				Brown coarse to fine SAND, trace Gravel, little Silt	SW
				22			8	9	14	(NYC BC Class 3b Soil)	
25											
	S-6	9	25		27	17				Same; grading to little Gravel (NYC BC Class 3b Soil)	SW
				27			12	10	29		
30											
	S-7	18	30		9	12				Same (NYC BC Class 3b Soil)	SW
				32			13	19	25		
35											
	S-8	20	35		11	13				Same; grading to trace Gravel	SW
				37			12	13	25	(sample is wet) (NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 6

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-6**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/2/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/2/2017	0 Hr. 35' b.g.	Date 8/2/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-9	12	40		9	16				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			14	12	30	(NYC BC Class 3a Soil)	
45											
	S-10	18	45		6	8				Same (NYC BC Class 3b Soil)	SW
				47			8	5	16		
50											
	S-11	18	50		9	13				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			12	12	25	(NYC BC Class 3b Soil)	
										Boring Completed @ 52'	
55											
										Notes: (1) Borehole backfilled with drilling spoils	
										(2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
60											
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 6

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-7
	LOCATION:	1510-1524 Broadway, Brooklyn, NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL
BORING BY: Granese Drilling Inc.	DATE STARTED:	8/2/2017	GROUNDWATER TABLE DEPTH	
INSPECTOR: MZ	DATE COMPLETED:	8/4/2017	0 Hr. 35' b.g. Date 8/4/17	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-1	21	10		12	19				FILL: Brown coarse to fine SAND, little Gravel, trace Silt	F
				12			23	30	42	(NYC BC Class 7 Soil)	
	S-2	12	12		6	22				Same; grading to with crushed rock (NYC BC Class 7 Soil)	F
				14			20	39	42		
15										Auger Refusal @ 14 FEET, OFFSET 3 FEET NW (Boring resumed 8/4/17)	
	S-3	16	15		40	50/3"				FILL: Brown to Gray coarse to fine SAND, little Gravel, little Silt	F
				17					50+	Same; grading to Brown coarse to fine SAND, trace root fibers	
										(NYC BC Class 7 Soil)	
20											
	S-4	22	20		29	26				Same; grading to with Brick (NYC BC Class 7 Soil)	F
				22			11	11	37	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
										(NYC BC Class 3a Soil)	
25											
	S-5	14	25		21	25				Brown coarse to fine SAND, little Gravel with crushed mica schist, trace	SW
				27			22	15	47	Silt (NYC BC Class 3a Soil)	
30											
	S-6	21	30		12	19				Brown coarse to fine SAND, little Clayey SILT, trace Gravel	SM
				32			28	25	47	Same; grading to Brown coarse to fine SAND, little Gravel, trace Silt	SW
										(NYC BC Class 3a Soil)	
										Rig Chatter, Drilling through Cobbles	
35											
	S-7	24	35		10	8				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				37			10	15	18	(sample is wet) (NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 7

SESI CONSULTING ENGINEERS				PROJECT NAME:	MWBE Site C		BORING NO.	B-7
				LOCATION:	1510-1524 Broadway, Brooklyn NY		JOB NO.	9753
				METHOD:	HSA		GROUND ELEVATION:	STREET LEVEL
BORING BY:	Granese Drilling Inc.			DATE STARTED	8/2/2017		GROUNDWATER TABLE DEPTH	
INSPECTOR:	MZ			DATE COMPLETED	8/4/2017	0 Hr. 35' b.g.	Date 8/3/17	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-8	19	40		12	35				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				42			15	15	50	(NYC BC Class 3a Soil)	
45											
	S-9	20	45		10	14				Same; grading to trace Gravel (NYC BC Class 3a Soil)	SW
				47			17	20	31		
50											
	S-12	9	50		8	7				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				52			9	15	16	(NYC BC Class 3b Soil)	
55										Boring Completed @ 52'	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 7

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	B-8
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL
BORING BY: Granese Drilling Inc.	DATE STARTED:	8/2/2017	GROUNDWATER TABLE DEPTH	
INSPECTOR: MZ	DATE COMPLETED:	8/2/2017	0 Hr. 35' b.g. Date 8/1/17	24 Hr. 35.90' g.b. Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
										Rig Chatter, Drilling through Boulders	
5											
	S-1	2	5		3	4				FILL: Brown coarse to fine SAND, little Gravel with Brick and	F
				7			4	1	8	Concrete, little Silt (NYC BC Class 7 Soil)	
	S-2	9	7		4	17					F
				9			3	7	20	Same; grading to trace Silt (NYC BC Class 7 Soil)	
10											
	S-3	20	10		14	21				Brown coarse to fine SAND, some Gravel, trace Silt	SW
				12			16	11	37	(NYC BC Class 3a Soil) (W.C. = 10.8%) (Minus #200 Sieve = 21.6%)	
	S-4	18	12		12	11				Same (NYC BC Class 3a Soil)	SW
				14			21	15	32		
15											
	S-5	12	15		10	7				Light Brown coarse to fine SAND, some Gravel, little Silt	SW
				17			10	7	17	(NYC BC Class 3b Soil)	
20											
	S-6	15	20		20	8				Brown coarse to fine SAND, little Gravel, little Silt	SW
				22			8	10	16	(NYC BC Class 3b Soil)	
25											
	S-7	14	25		8	8				Same; grading to some Gravel (NYC BC Class 3a Soil)	SW
				27			11	10	19		
30											
	S-8	6	30		9	11				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				32			11	13	22	(rock in tip) (NYC BC Class 3b Soil)	
35											
	S-9	17	35		9	10				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				37			11	10	21	(sample is wet) (NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 8

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-8**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/2/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/2/2017	0 Hr. 35' b.g.	Date 8/1/17	24 Hr. 35.90' b.g.	Date 8/3/17

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N (bl/ft)	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
40		(in)	(ft)	(ft)							
	S-10	23	40		7	9				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				42			12	15	21	(NYC BC Class 3b Soil)	
45											
	S-11	18	45		5	11				Same; grading to trace Gravel (NYC BC Class 3b Soil)	SW
				47			13	17	24		
50											
	S-12	19	50		4	7				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			12	13	19	(NYC BC Class 3a Soil)	
										Boring Completed @ 52'	
55										Set Temporary 2" Diameter Monitoring Well @ 50' below grade	
										Notes: (1) Borehole backfilled with drilling spoils	
										(2) A geophysical survey was performed using a hand-held	
60										metal detector, electromagnetic utility locating device, and	
										ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 8

SESI CONSULTING ENGINEERS				PROJECT NAME:	MWBE Site C			BORING NO.	B-9
				LOCATION:	1510-1524 Broadway, Brooklyn NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	STREET LEVEL
BORING BY:	Granese Drilling Inc.			DATE STARTED:	8/3/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR:	MZ			DATE COMPLETED:	8/3/2017	0 Hr. 35' b.g.	Date 8/3/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
										Rig Chatter, Drilling through Boulders	
										FILL: NYC BC Class 7 Soil	
5											
	S-1	18	5		5	7				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				7			6	5	13	(NYC BC Class 3b Soil)	
	S-2	16	7		5	6				Same (NYC BC Class 3b Soil)	SW
				9			6	6	12		
10											
	S-3	18	10		6	6				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				12			7	8	13	(NYC BC Class 3b Soil)	
15											
	S-4	13	15		16	13				Same; grading to little Gravel (NYC BC Class 3b Soil)	SW
				17			8	7	21		
20											
	S-5	22	20		9	11				Brown coarse to fine SAND, little Gravel, trace Silt	SW
				22			13	13	24	(NYC BC Class 3b Soil)	
25											
	S-6	20	25		11	16				Same; grading to trace Gravel (NYC BC Class 3b Soil)	SW
				27			23	28	26		
30											
	S-7	20	30		12	11				Same (NYC BC Class 3b Soil)	SW
				32			15	15	26		
35											
	S-8	18	35		11	15				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				37			16	12	31	(sample is wet) (NYC BC Class 3a Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 9

SESI CONSULTING ENGINEERS	PROJECT NAME:	MWBE Site C	BORING NO.	**B-9**
	LOCATION:	1510-1524 Broadway, Brooklyn NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	STREET LEVEL

BORING BY: Granese Drilling Inc.	DATE STARTED	8/3/2017	GROUNDWATER TABLE DEPTH			
INSPECTOR: MZ	DATE COMPLETED	8/3/2017	0 Hr. 35' b.g.	Date 8/3/17	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-9	24	40		7	9				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				42			12	9	21	(NYC BC Class 3b Soil)	
45											
	S-10	24	45		5	11				Same (NYC BC Class 3b Soil)	SW
				47			16	17	27		
50											
	S-11	24	50		6	12				Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				52			29	42	41	(NYC BC Class 3a Soil)	
55										Boring Completed @ 52'	
60										Notes: (1) Borehole backfilled with drilling spoils (2) A geophysical survey was performed using a hand-held metal detector, electromagnetic utility locating device, and ground penetrating radar prior to dirlling to locate utilities.	
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE 9

SESI CONSULTING ENGINEERS	PROJECT NAME:	1510 Broadway	BORING NO.	B-10
	LOCATION:	Brooklyn, NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	
BORING BY: MZ	DATE STARTED:	3/30/2018	GROUNDWATER TABLE DEPTH	
INSPECTOR: GDI	DATE COMPLETED:	3/30/2018	0 Hr. 37' b.g	Date 3/30/18	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-1	14	0		2	5			9	FILL: Brown coarse to fine SAND, little Silt, trace Gravel with Brick	F
				2			4	6		(NYC BC Class 7 Soil)	
	S-2	6	2		11	7			11	Same; with concrete, wood (NYC BC Class 7 Soil)	F
				4			4	9			
5	S-3	9	4		5	4			8	Same; (NYC BC Class 7 Soil)	F
				6			4	3			
	S-4	10	6		3	2			7	Same; (NYC BC Class 7 Soil)	F
				8			5	5			
	S-5	13	8		5	11			29	FILL: Brown to Tan coarse to fine SAND, trace Gravel, trace Silt	F
10				10			18	27		with Brick (NYC BC Class 7 Soil)	
	S-6	7	10		93	50/1"			+50	FILL: Light Brown to Tan coarse to fine SAND, trace Gravel, trace Silt	F
				12						with Brick (NYC BC Class 7 Soil)	
										11'-14' Drilling through rock/concrete or miscellaneous debris	
15											
	S-7	12	15		11	12			27	FILL: Light Brown coarse to fine SAND, little Gravel, trace Silt with	F
				17			15	20		Brick (NYC BC Class 7 Soil)	
	S-8	4	17		18	15			35	Light Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				19			20	20		(NYC BC Class 3a Soil)	
20	S-9	12	19		20	10			20	Light Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				21			10	10		(NYC BC Class 3b Soil)	
25											
	S-10	20	25		18	27			48	Light Brown coarse to fine SAND, little Gravel, trace Silt	SW
				27			21	22		(NYC BC Class 3a Soil)	
	S-11	17	27		9	7			18	Light Brown coarse to fine SAND, little Gravel, trace Silt	SW
				29			9	10		(NYC BC Class 3b Soil)	
30											
	S-12	15	30		17	30			65	Same; (NYC BC Class 3a Soil)	SW
				32			35	27			
35											
	S-13	18	35		12	13			25	Light Brown coarse to fine SAND, trace Gravel, trace Silt (tip wet)	SW
				37			12	9		(NYC BC Class 3b Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS	PROJECT NAME:	1510 Broadway	BORING NO.	**B-10**	
	LOCATION:	Brooklyn, NY	JOB NO.	9753	
	METHOD:	HSA	GROUND ELEVATION:		
BORING BY: MZ	DATE STARTED:	3/30/2018	GROUNDWATER TABLE DEPTH		
INSPECTOR: GDI	DATE COMPLETED:	3/30/2018	0 Hr. 37' b.g	Date 3/30/18	24 Hr. / Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
		(in)	(ft)	(ft)					(bl/ft)		
40	S-14	20	40		5	8			16	Light Brown coarse to fine SAND, little Gravel, trace Silt (sample wet)	SW
				42			8	9		(NYC BC Class 3b Soil)	
45	S-15	24	45		4	3			11	Light Brown coarse to fine SAND, trace Gravel, trace Silt (wet)	SW
				47			8	7		(NYC BC Class 3b Soil)	
50	S-16	24	50		4	5			10	Light Brown coasrse to fine Sand, trace Gravel, trace Silt (wet)	SW
				52			5	10		(NYC BC Class 3b Soil)	
55										Boring Completed @ 52'	
60											
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS				PROJECT NAME:	1510 Broadway			BORING NO.	B-11
				LOCATION:	Brooklyn, NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	
BORING BY:	MZ			DATE STARTED:	3/30/2018	GROUNDWATER TABLE DEPTH			
INSPECTOR:	GDI			DATE COMPLETED:	4/2/2018	0 Hr. 40' b.g	Date 3/30/18	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-1	6	0		3	7			17	Fill: Brown medium to fine SAND, little Silt, trace Gravel with crushed rock	F
				2			10	10		(NYC BC Class 7 Soil)	
	S-2	5	2		10	50/2"				Fill: Same with brick (NYC BC Class 7 Soil)	F
				4							
5	S-3	9	4		5	2			5	Fill: Brown coarse to fine SAND, trace Gravel, trace Silt with birck, and	F
				6			3	2		crushed rock (NYC BC Class 7 Soil)	
	S-4	5	6		2	1			8	Fill: Brown coarse to fine SAND, trace Gravel, trace Silt with wood,	F
				8			7	10		miscellaneous debris (wet) (NYC BC Class 7 Soil)	
	S-5	10	8		4	5			12	Fill: Tan coarse to fine SAND, some Clayey Silt, trace Gravel with brick	F
10				10			7	13		(sample is wet) (NYC BC Class 7 Soil)	
	S-6	11	10		30	41			+90	Fill: Tan to Light Brown coarse to fine SAND, little Silt, trace Gravel (wet)	F
				12			50/3"			(NYC BC Class 7 Soil)	
15	S-7	13	14		5	7			15	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				16			8	12		(NYC BC Class 3b Soil)	
	S-8	18	16		12	11			22	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				18			11	14		(NYC BC Class 3b Soil)	
20											
	S-9	11	20		7	9			19	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				22			10	10		(NYC BC Class 3b Soil)	
25											
	S-10	12	25		10	17			36	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				27			19	19		(NYC BC Class 3a Soil)	
30											
	S-11	7	30		8	9			22	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				32			13	12		(NYC BC Class 3b Soil)	
35											
	S-13	11	35		20	21			42	Brown coarse to fine SAND, little Gravel (multicolored), trace Silt	SW
				37			21	21		(NYC BC Class 3a Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE

SESI CONSULTING ENGINEERS						
	PROJECT NAME:	1510 Broadway	BORING NO.	**B-11**		
	LOCATION:	Brooklyn, NY	JOB NO.	9753		
	METHOD:	HSA	GROUND ELEVATION:			
BORING BY: MZ	DATE STARTED:	3/30/2018	GROUNDWATER TABLE DEPTH			
INSPECTOR: GDI	DATE COMPLETED:	4/2/2018	0 Hr. 40' b.g	Date 3/30/18	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-13	18	40		9	8			17	Brown coarse to fine SAND, trace Gravel, trace Silt (wet)	SW
				42			9	14		(NYC BC Class 3b Soil)	
45											
	S-14	24	45		13	10			25	Brown coarse to fine SAND, little Gravel, trace Silt (wet)	SW
				47			15	16		(NYC BC Class 3b Soil)	
50											
	S-15	24	50		8	12			26	Brown coarse to fine SAND, little Gravel, trace Silt (wet)	SW
				52			14	15		(NYC BC Class 3b Soil)	
55										Boring Completed @ 52'	
60											
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS				PROJECT NAME:	1510 Broadway			BORING NO.	B-12
				LOCATION:	Brooklyn, NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	
BORING BY:	MZ			DATE STARTED:	4/2/2018	GROUNDWATER TABLE DEPTH			
INSPECTOR:	GDI			DATE COMPLETED:	4/2/2018	0 Hr. 35' b.g	Date 4/2/18	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol USCS
0		(in)	(ft)	(ft)					(bl/ft)		
	S-1	6	0		13	15			28	Fill: Brown coarse to fine SAND, trace Silt with crushed rock	F
				2			13	8		(NYC BC Class 7 Soil)	
	S-2	6	2		8	6			9	Fill: Brown coarse to fine SAND, littlee Silt with brick	F
				4			3	4		(NYC BC Class 7 Soil)	
5	S-3	8	4		6	2			4	Same; (NYC BC Class 7 Soil)	F
				6			2	3			
	S-4	10	6		18	15			31	Fill: Brown coarse to fine SAND, little Clayey Silt, trace Gravel with brick	F
				8			16	50/2"		(NYC BC Class 7 Soil)	
	S-5	10	8		23	28			58	Fill: Brown coarse to fine SAND, little Clayey Silt, trace Gravel with brick	F
10				10			30	29		(NYC BC Class 7 Soil)	
	S-6	16	10		26	31			53	Brown coarse to fine SAND, little Silt, trace Gravel	SW
				12			22	20		(NYC BC Class 3a Soil)	
	S-7	18	12		21	17			34	Brown coarse to fine SAND, little Silt, trace Gravel	SW
				14			17	18		(NYC BC Class 3a Soil)	
15	S-8	11	14		20	22			47	Same; (NYC BC Class 3a Soil)	SW
				16			25	27			
	S-9	10	16		12	12			24	Brown coarse to fine SAND, little Silt, trace Gravel	SW
				18			12	20		(NYC BC Class 3b Soil)	
20											
	S-10	12	20		6	9			15	Brown coarse to fine SAND, trace Silt, trace Gravel	SW
				22			6	10		(NYC BC Class 3b Soil)	
25											
	S-11	8	25		5	7			18	Same; (NYC BC Class 3b Soil)	SW
				27			11	17			
30											
	S-12	10	30		13	14			23	Brown coarse to fine SAND, trace Gravel, trace Silt	SW
				32			9	8		(NYC BC Class 3b Soil)	
35											
	S-13	16	35		15	17			34	Brown coarse to fine SAND, trace Gravel (rounded), trace Silt	SW
				37			17	20		(tip of sample wet) (NYC BC Class 3a Soil)	
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE

SESI CONSULTING ENGINEERS				PROJECT NAME:	1510 Broadway			BORING NO.	B-12
				LOCATION:	Brooklyn, NY			JOB NO.	9753
				METHOD:	HSA			GROUND ELEVATION:	
BORING BY:	MZ			DATE STARTED:	4/2/2018	GROUNDWATER TABLE DEPTH			
INSPECTOR:	GDI			DATE COMPLETED:	4/2/2018	0 Hr. 35' b.g	Date 4/2/18	24 Hr.	Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon 0/6	6/12	12/18	18/24	N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
40		(in)	(ft)	(ft)					(bl/ft)		USCS
	S-14	1	40		9	10			26	Brown coarse to fine SAND, trace Gravel, trace Silt (wet)	SW
				42			16	13		(NYC BC Class 3b Soil)	
45	S-15	24	45		5	8			18	Brown coarse to fine SAND, trace Gravel, trace Silt (wet)	SW
				47			10	12		(NYC BC Class 3b Soil)	
50	S-16	24	50		8	9			21	Brown coarse to fine SAND, trace Gravel, trace Silt (wet)	SW
				52			12	13		(NYC BC Class 3b Soil)	
55										Boring Completed @ 52'	
60											
65											
70											
75											
80											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

SESI CONSULTING ENGINEERS	PROJECT NAME:	1510 Broadway	BORING NO.	B-13
	LOCATION:	Brooklyn, NY	JOB NO.	9753
	METHOD:	HSA	GROUND ELEVATION:	
BORING BY: MZ	DATE STARTED:	4/2/2018	GROUNDWATER TABLE DEPTH	
INSPECTOR: GDI	DATE COMPLETED:	4/2/2018	0 Hr. Not Obs. Date 4/2/18	24 Hr. Date

DEPTH (ft)	SAMPLE No.	REC	DEPTH FROM	DEPTH TO	Blows on Spoon				N	SOIL DESCRIPTION AND STRATIFICATION	Symbol
0		(in)	(ft)	(ft)	0/6	6/12	12/18	18/24	(bl/ft)		USCS
5											
	S-1	6	5		6	7			9	Fill: Brown coarse to fine SAND, trace Silt, trace Gravel with brick and	F
				7			2	2		miscellaneous debris (NYC BC Class 7 Soil)	
	S-2	6	7		3	8			14	Fill: Light Brown medium to fine SAND, trace Gravel, trace Silt with brick	F
				9			6	6		(NYC BC Class 7 Soil)	
10	S-3	12	9		8	12			32	Fill: Brown coarse to fine SAND, trace Gravel, trace Silt with brick,	F
				11			20	30		concrete (NYC BC Class 7 Soil)	
	S-4	8	11		58	41			75	Brown coarse to fine Sand, trace Gravel, trace Silt	F
				13			34	31		(NYC BC Class 7 Soil)	
	S-5	9	13		24	20			34	Fill: Brown coarse to fine SAND, trace Gravel, trace Silt with brick	F
15				15			14	13		(NYC BC Class 7 Soil)	
	S-6	12	15		7	10			23	Brown coarse to fine Sand, trace Gravel, trace Silt	SW
				17			13	10		(NYC BC Class 3b Soil)	
20											
	S-7	12	20		12	13			28	Brown coarse to fine SAND, trace Silt (NYC BC Class 3b Soil)	SW
				22			15	15			
										Boring Completed @ 22'	
25											
30											
35											
40											

Nominal I.D. of Hole	in
Nominal I.D. of Split Barrel Sampler	1⅜ in
Weight/type of Hammer on Drive Pipe	300 lb
Weight/type of Hammer on Split Barrel	140 lb
Drop of Hammer on Drive Pipe	in
Core Size	in

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Pp: Pocket Penetrometer; WOH: Weight of Hammer; WOR: Weight of Rod

Approximate Change in Strata: ____________ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _ _

Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.

FIGURE

PROJECT NO.	9753	PROJECT	1510 Broadway, Brooklyn NY	TEST PIT NO.	TP- 1
LOCATION	SEE FIGURE 1	APPROX. ELEV.		INSPECTED BY	MZ
WATER OBSERVATION	No Seepage Observed			DATE EXCAVATED	4/3/2018

DEPTH FT.	DESCRIPTION / SOIL CLASSIFICATION	RELATIVE DENSITY OR CONSISTENCY
0	Topsoil: 1"-6"	
1	6"-4.5" Fill: Brown coarse to fine SAND, little Gravel, little cobbles, trace Silt	
2		
3		
4		
5	4'6" Bottom of Foundation Underneath foundation - Brown coarse to fine Sand, little Cobbles/Gravel	
6	trace Silt	
7	Test Pit Completed @ 6.5' b.g.	
8		
9		
10		
11		
12		
13		
14		

NOTE:

Fig.

SESI CONSULTING

PROJECT NO.	9753	PROJECT	1510 Broadway, Brooklyn NY	TEST PIT NO.	TP- 2
LOCATION	SEE FIGURE 1	APPROX. ELEV.		INSPECTED BY	MZ
WATER OBSERVATION	No Seepage Observed			DATE EXCAVATED	4/3/2018

DEPTH FT.	DESCRIPTION / SOIL CLASSIFICATION	RELATIVE DENSITY OR CONSISTENCY
0	0-1' Fill: Brown coarse to fine SAND, little Gravel, little cobbles, trace Silt	
1	8" Asphalt	
2	Fill: Brown to Orange Brown medium to fine SAND, little Silt, trace Gravel	
3	with Brick, concrete, metal, and miscellaneous debris	
4		
5	4'8" Bottom of Foundation	
	Underneath foundation - Brown coarse to fine Sand, little Cobbles/Gravel	
6	trace Silt	
7		
8		
9		
10		
	Test Pit Completed @ 10' b.g.	
11		
12		
13		
14		

NOTE:

Fig.

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PROJECT NO.	9753	PROJECT	1510 Broadway, Brooklyn NY	TEST PIT NO.	TP- 3
LOCATION	SEE FIGURE 1	APPROX. ELEV.		INSPECTED BY	MZ
WATER OBSERVATION	Seepage @ 7.5' +/- b.g.			DATE EXCAVATED	4/3/2018

DEPTH FT.	DESCRIPTION / SOIL CLASSIFICATION	RELATIVE DENSITY OR CONSISTENCY
0	0-2" Topsoil	
1	Fill: Dark Brown to Brown coarse to fine SAND, trace Gravel, trace Silt with concrete, brick, and miscellaneous debris	
2		
3		
4		
5		
6	5'6" Possible Fire Hydrant Line	
7	Seepage Observed @ 7-7.5' b.g.	
8		
9	Test Pit Completed @ 8' b.g.	
10		
11		
12		
13		
14		

NOTE:

Fig.

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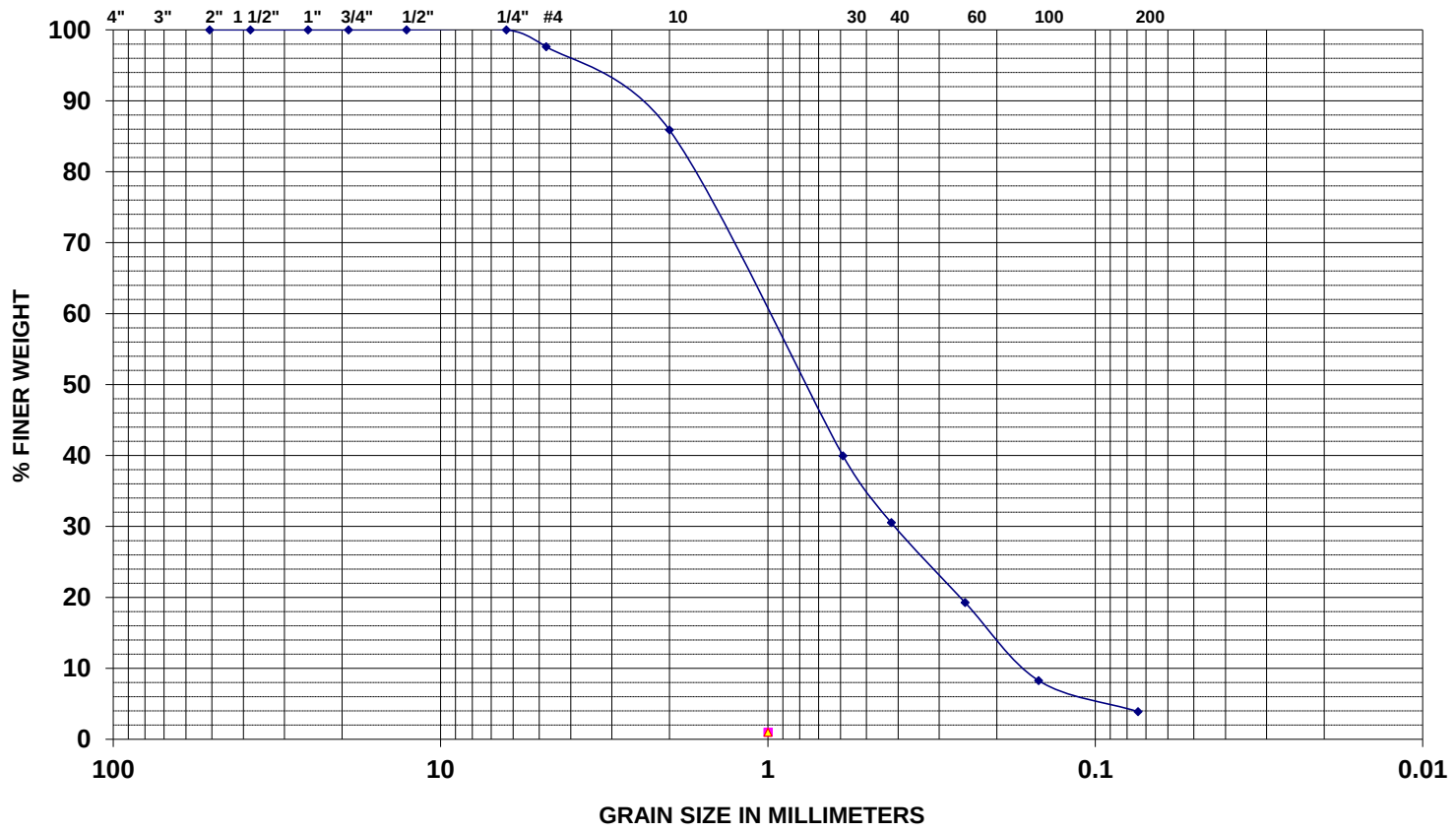
Appendix B

Grain Size Distribution Plots

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-1		
Sample	S-3		
Depth	10-12'		
% +3"			
% Gravel	14.11		
% Sand	82.00		
% Fines	3.89		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	4.74		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	100.00
1/4"	100.00
4	97.63
10	85.89
30	39.96
40	30.54
60	19.28
100	8.27
200	3.89

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

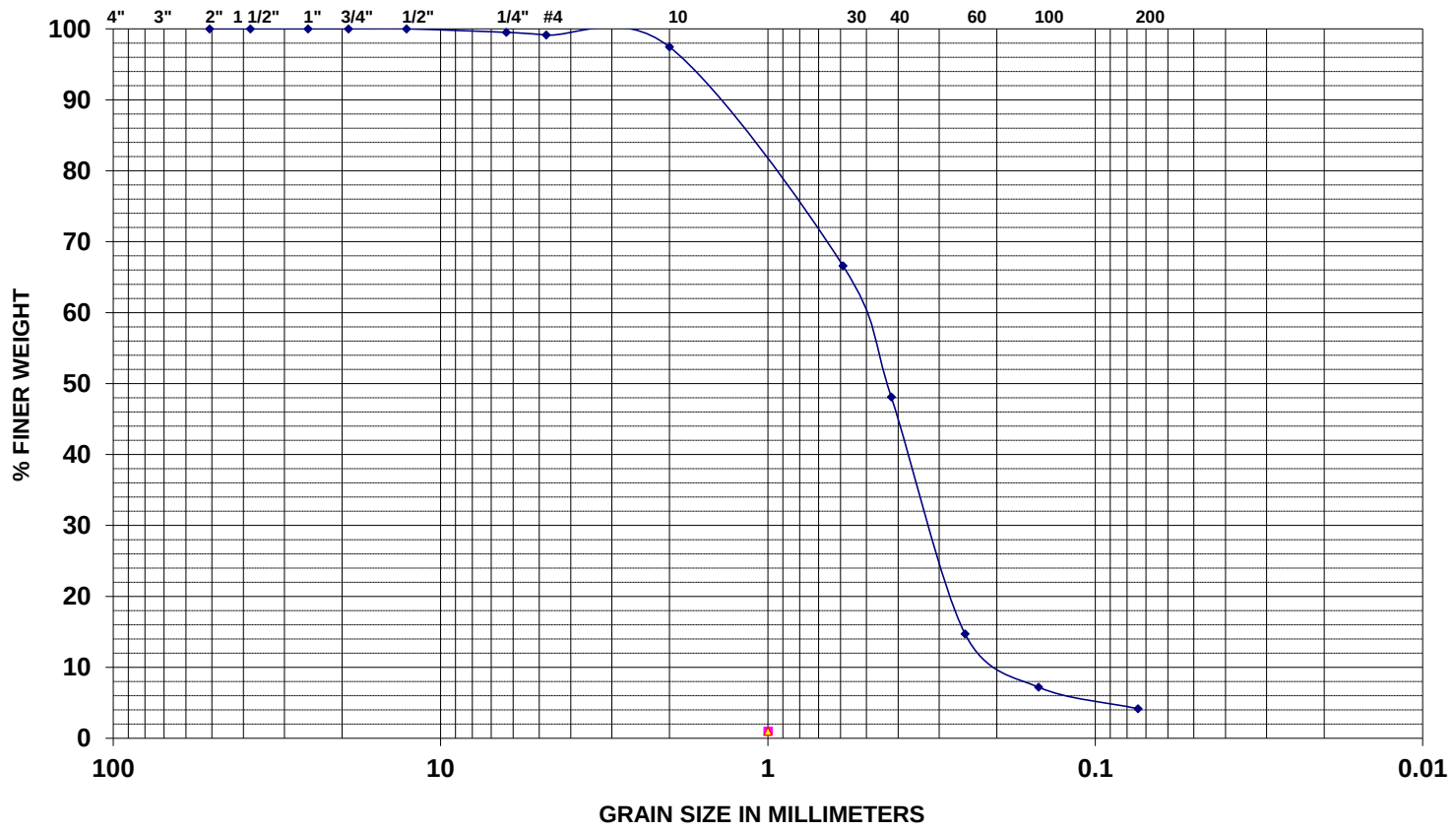
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, little Gravel, trace Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-2		
Sample	S-6		
Depth	15-17'		
% +3"			
% Gravel	2.55		
% Sand	93.30		
% Fines	4.16		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	6.89		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	100.00
1/4"	99.50
4	99.13
10	97.45
30	66.60
40	48.11
60	14.71
100	7.20
200	4.16

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

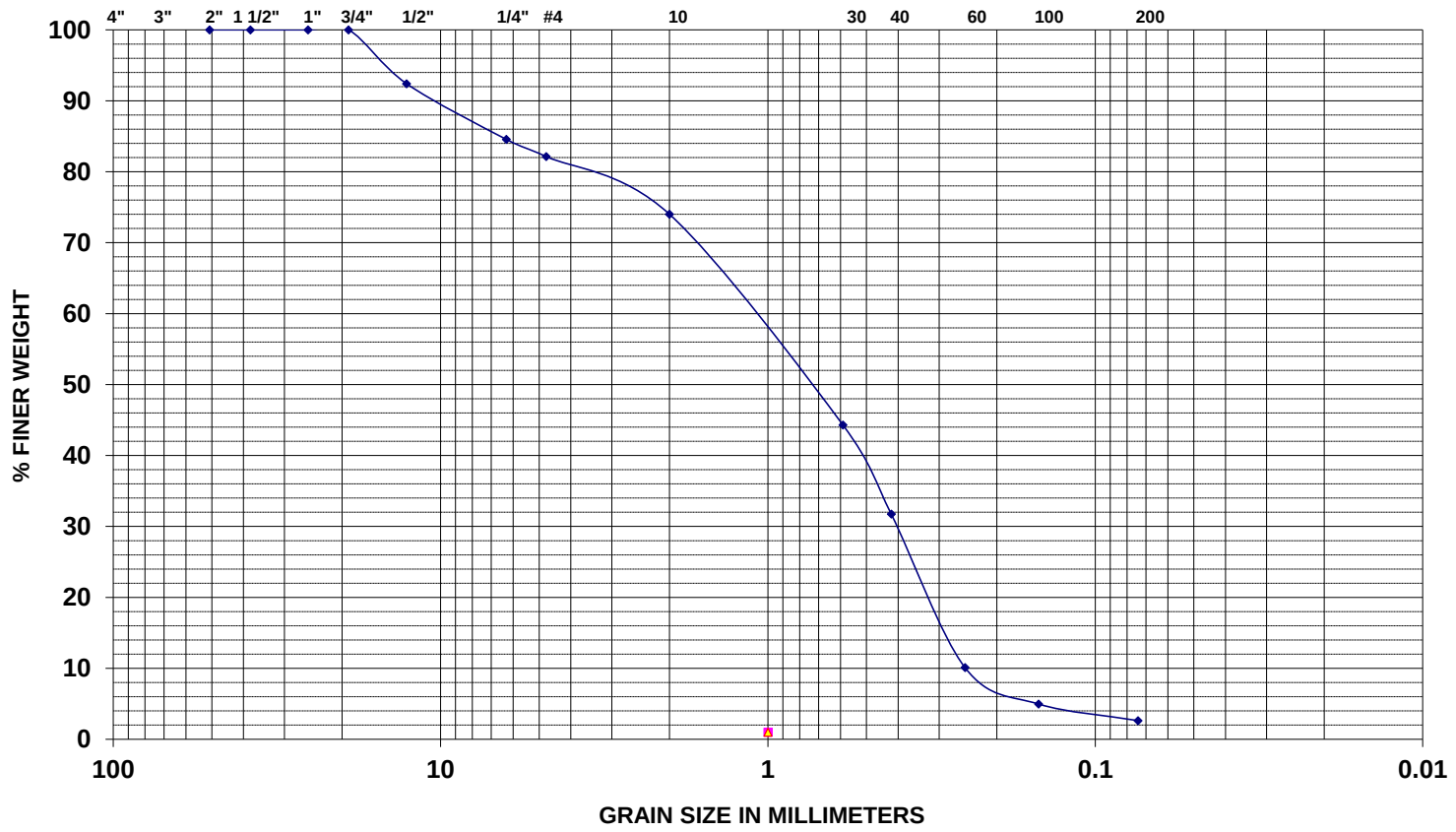
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, trace Gravel, trace Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-3		
Sample	S-6		
Depth	20-22"		
% +3"			
% Gravel	25.99		
% Sand	71.39		
% Fines	2.63		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	3.98		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	92.41
1/4"	84.56
4	82.14
10	74.01
30	44.29
40	31.73
60	10.10
100	4.97
200	2.63

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

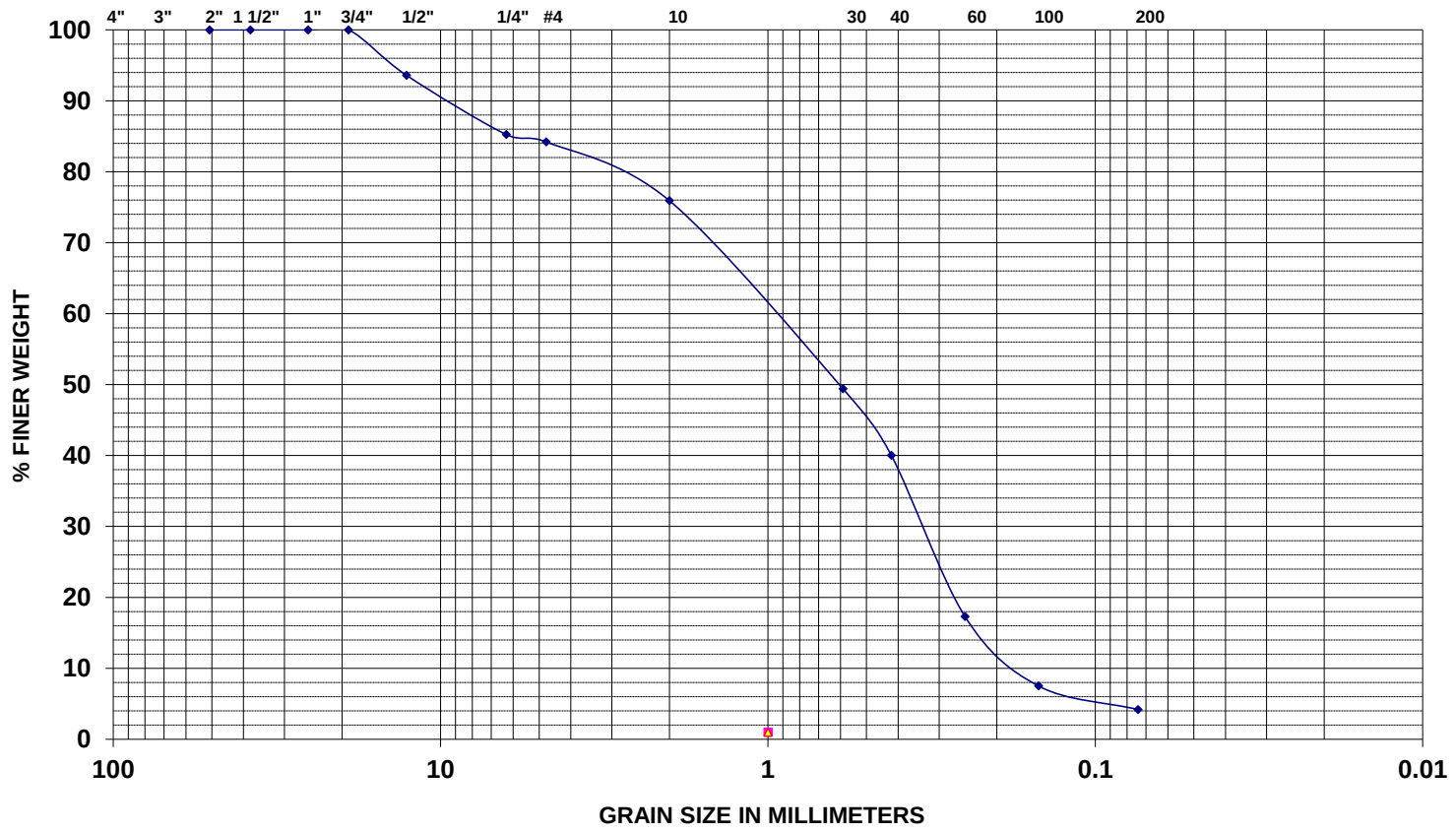
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, some Gravel, trace Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-3		
Sample	S-8		
Depth	30-32"		
% +3"			
% Gravel	24.08		
% Sand	71.72		
% Fines	4.19		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	4.76		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	93.58
1/4"	85.24
4	84.21
10	75.92
30	49.40
40	40.03
60	17.30
100	7.51
200	4.19

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuesten Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

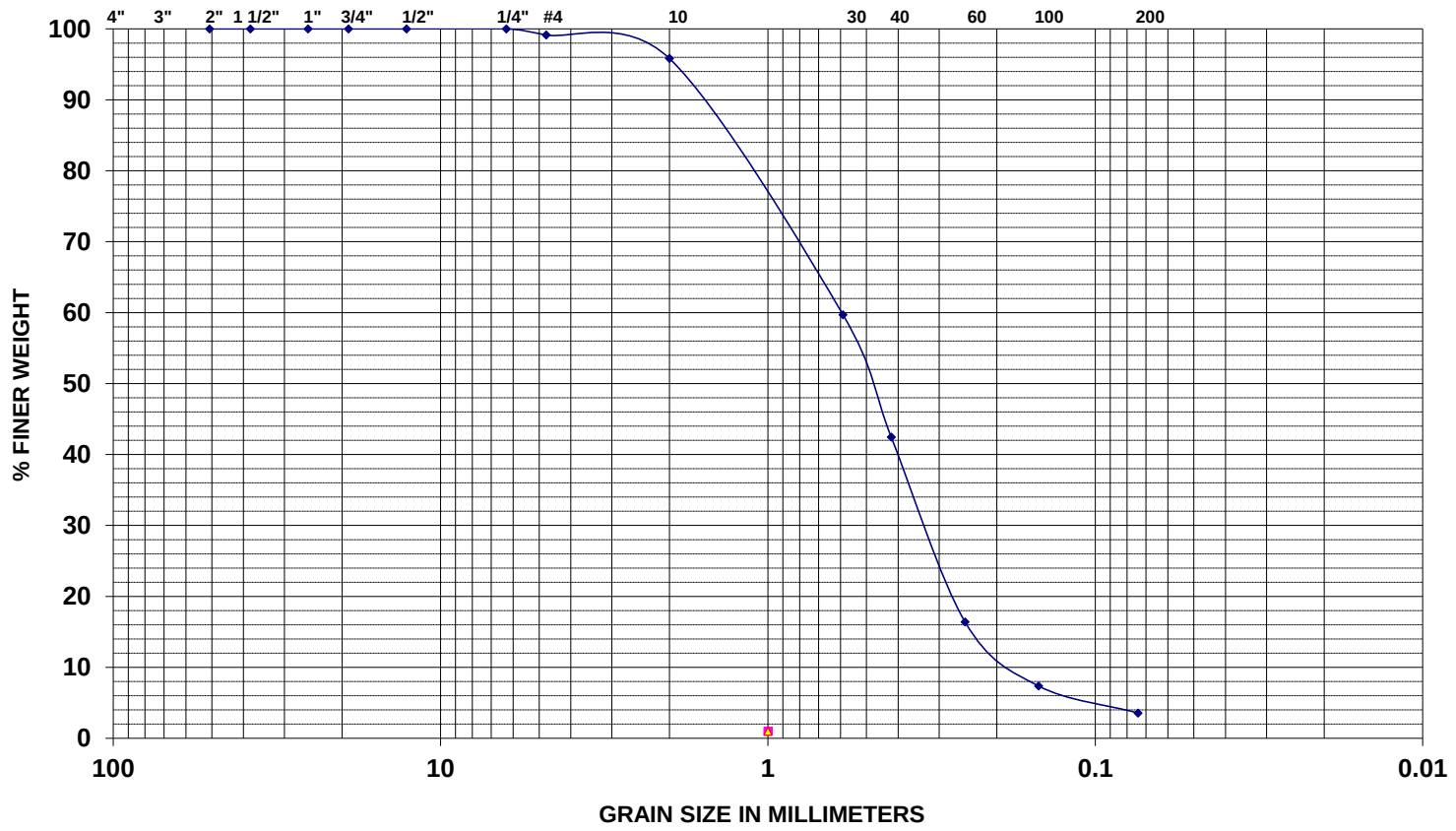
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, some Gravel, trace Gravel
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-3		
Sample	S-10		
Depth	40-42'		
% +3"			
% Gravel	4.18		
% Sand	92.26		
% Fines	3.56		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	18.79		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	100.00
1/4"	100.00
4	99.14
10	95.82
30	59.71
40	42.44
60	16.40
100	7.37
200	3.56

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

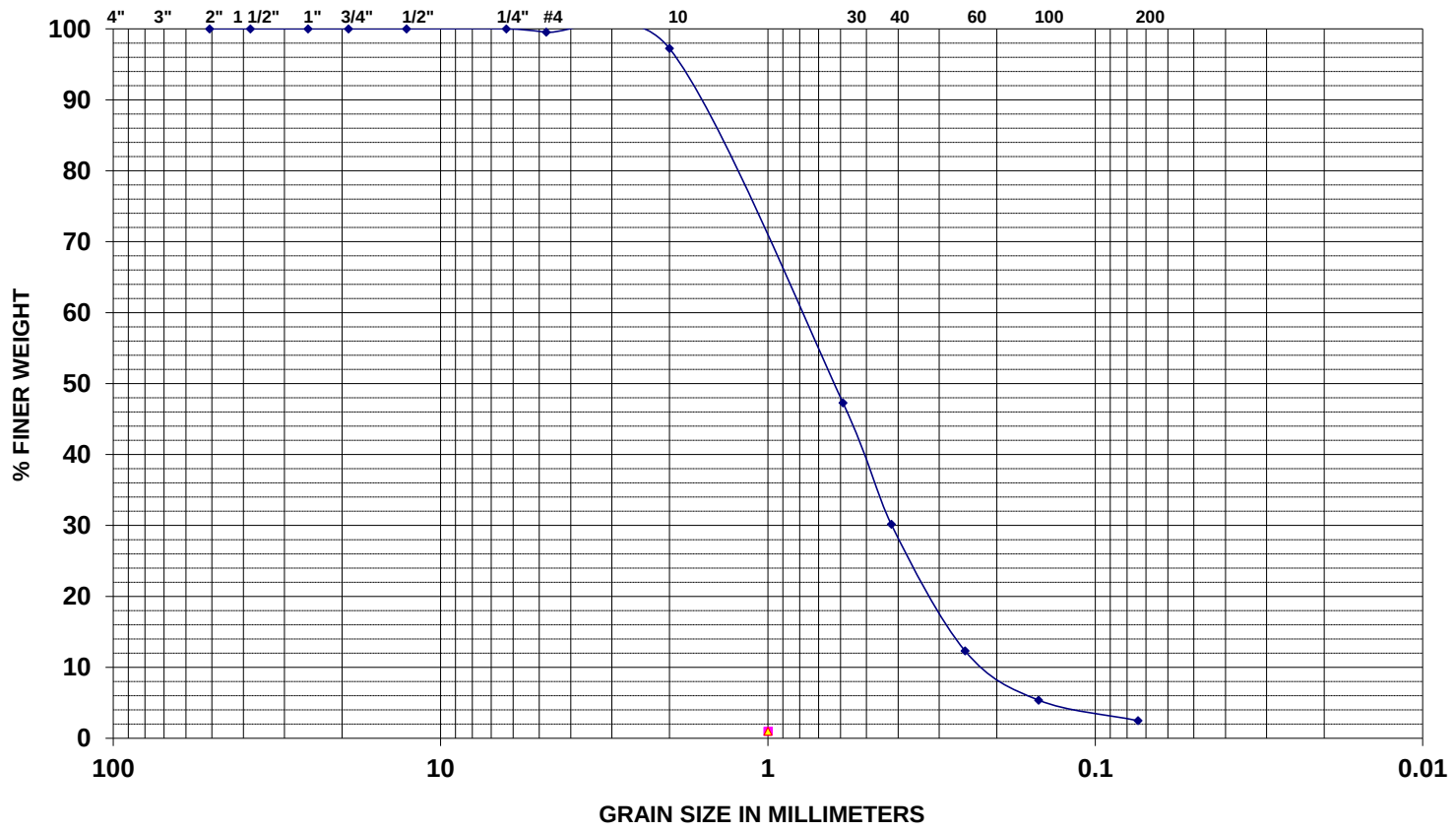
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, trace Gravel, trace Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-3		
Sample	S-12		
Depth	50-52'		
% +3"			
% Gravel	2.76		
% Sand	94.77		
% Fines	2.47		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	20.69		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	100.00
1/4"	100.00
4	99.52
10	97.24
30	47.29
40	30.16
60	12.32
100	5.38
200	2.47

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

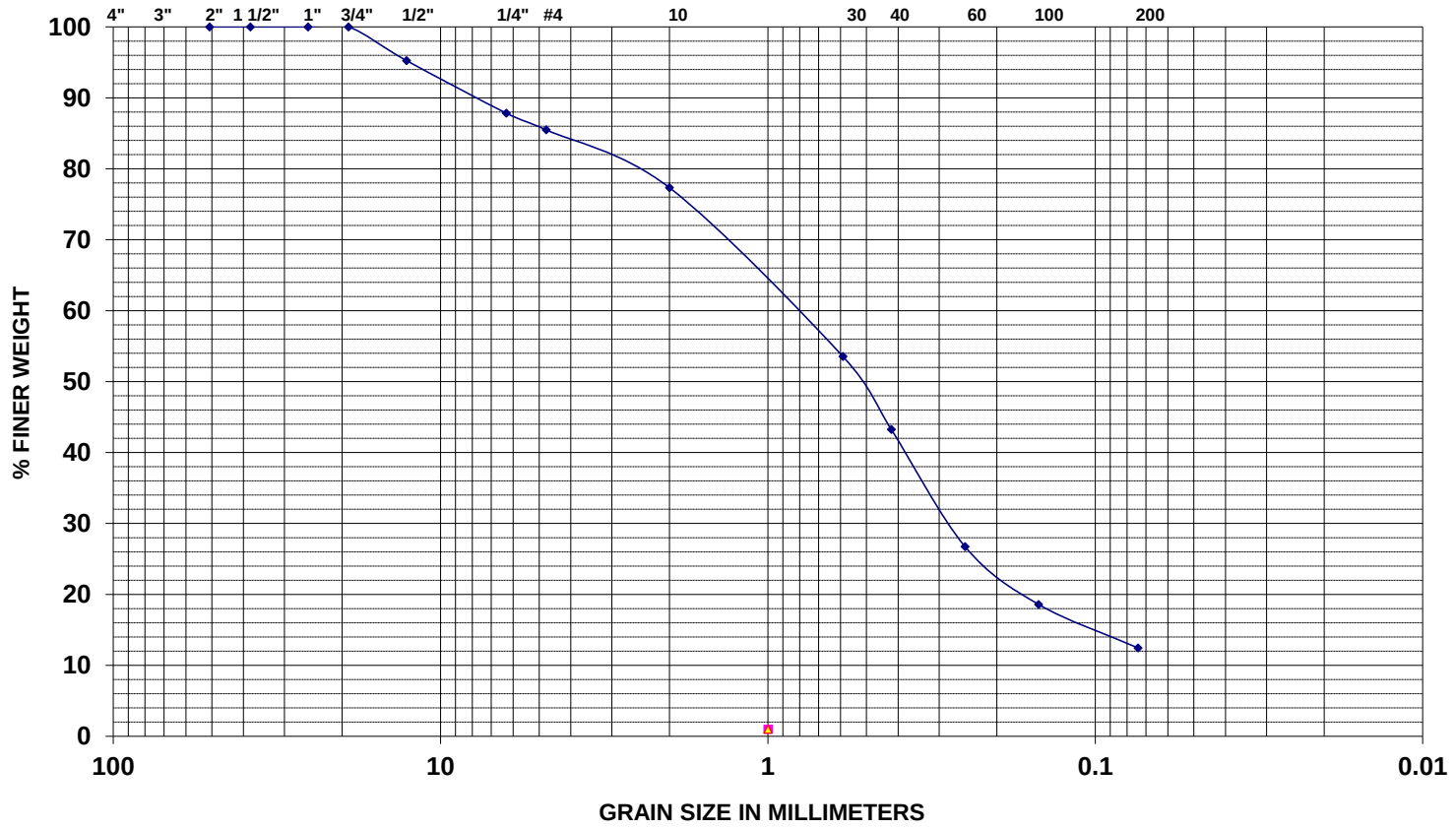
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, trace Gravel, trace Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-5		
Sample	S-2		
Depth	10-12'		
% +3"			
% Gravel	22.66		
% Sand	64.89		
% Fines	12.45		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	8.31		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	95.24
1/4"	87.84
4	85.48
10	77.34
30	53.53
40	43.26
60	26.74
100	18.59
200	12.45

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

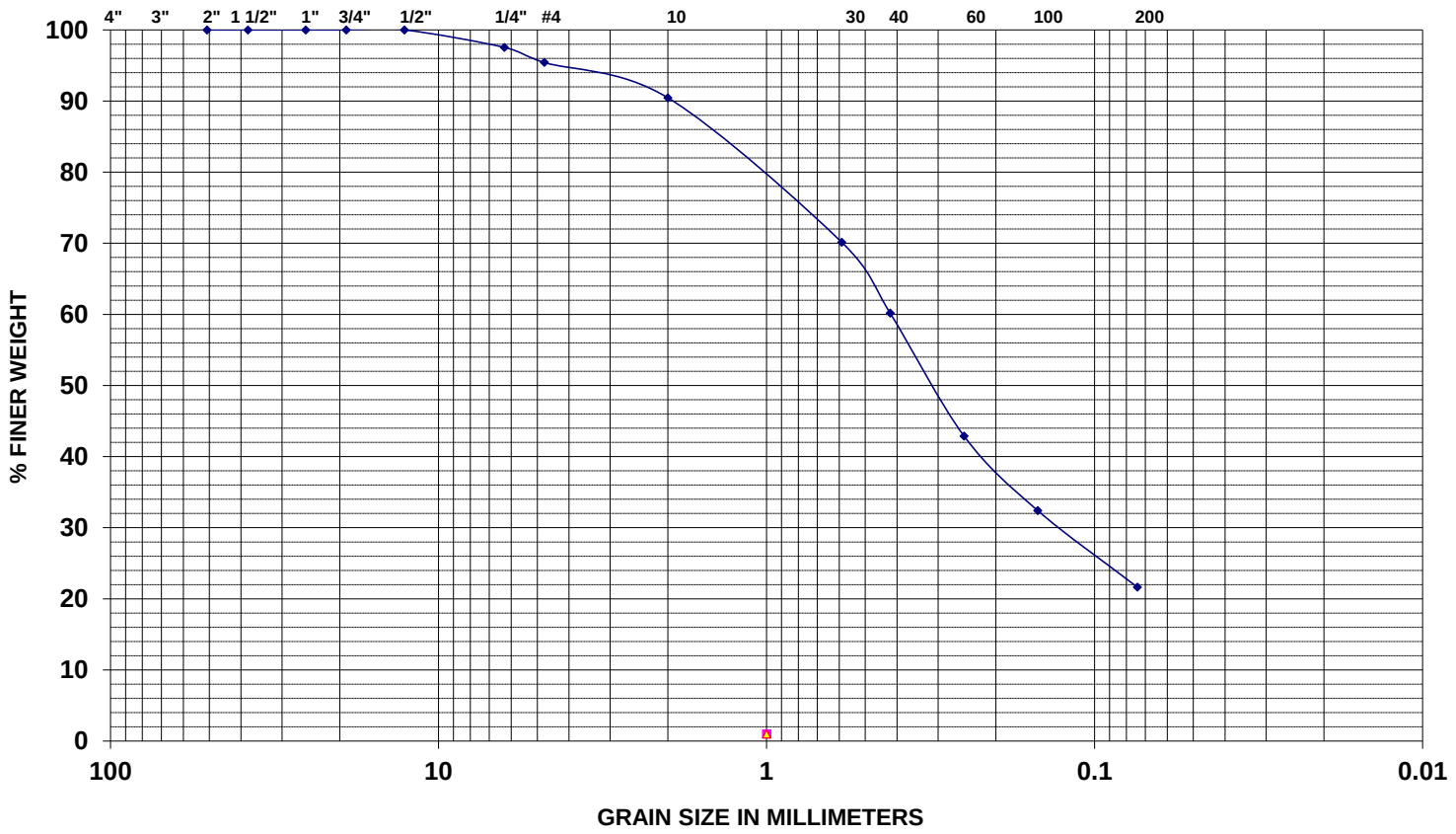
SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, some Gravel, little Silt
■	
▲	

SESI CONSULTING ENGINEERS

GRAVEL			SAND			SILT OR CLAY
COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	

3/4" 2mm .074mm

U.S STANDARD SIEVE SIZES



Symbol	◆	■	▲
Boring	B-8		
Sample	S-3		
Depth	10-12'		
% +3"			
% Gravel	9.54		
% Sand	68.82		
% Fines	21.63		
% Silt			
% Clay			
Sp.G			
LL			
PL			
PI			
W (%)	10.81		

Particle Size Sieve #	Percent Finer Than
3"	100.00
1 1/2"	100.00
1"	100.00
3/4"	100.00
1/2"	100.00
1/4"	97.54
4	95.42
10	90.46
30	70.15
40	60.18
60	42.89
100	32.40
200	21.63

PARTICLE SIZE DISTRIBUTION

CLIENT: McQuestan Construction Manag
PROJECT: MWBE Site C
DATE: August 9, 2017
JOB NO. 9753 FIGURE No

SYMBOL	DESCRIPTION AND REMARKS
◆	Brown coarse to fine SAND, some Silt, trace Gravel
■	
▲	

SESI CONSULTING ENGINEERS

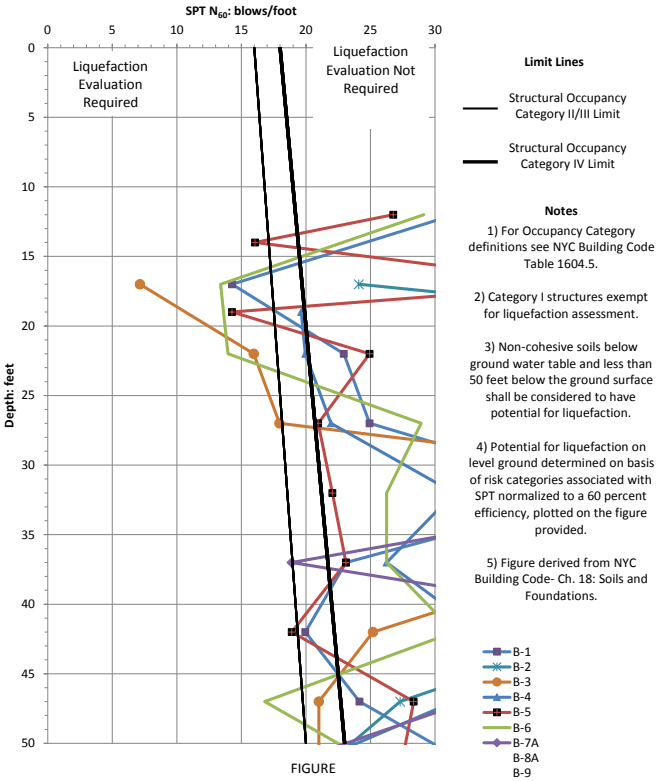
Appendix C

Liquefaction Plots

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Nui 9753

NYC Liquefaction Potential



FIGURE

DO NOT CHANGE THIS BOX	
Depth: feet	**SPT N_{60}: blows/foot**
0	16
50	20
0	18
50	23

Boring	Depth	N	N60
B-1	12	40	32
	17	16	14
	22	23	23
	27	25	25
	32	41	43
	37	22	23
	42	19	20
	47	23	24
	52	32	34

Boring	Depth	N	N60
B-2	17	27	24
	22	78	78
	27	39	39
	32	33	35
	37	31	33
	42	41	43
	47	26	27
	52	20	21

Boring	Depth	N	N60
B-3	17	8	7
	22	16	16
	27	18	18
	32	59	62
	37	40	42
	42	24	25
	47	20	21
	52	20	21

Boring	Depth	N	N60
B-4	19	22	20
	22	14	20
	27	22	22
	32	30	32
	37	25	26
	42	32	34
	47	30	32
	52	18	19

Boring	Depth	N	N60
B-5	12	34	27
	14	18	16
	17	47	42
	19	16	14
	22	25	25
	27	21	21
	32	21	22
	37	22	23
	42	18	19
	47	27	28
	52	26	27

Boring	Depth	N	N60
B-6	12	37	29
	17	15	13
	22	14	14
	27	29	29
	32	25	26
	37	25	26
	42	30	32
	47	16	17
	52	25	26

Boring	Depth	N	N60
B-7	27	47	47
	32	47	49
	37	18	19
	42	50	53
	47	31	33
	52	16	17

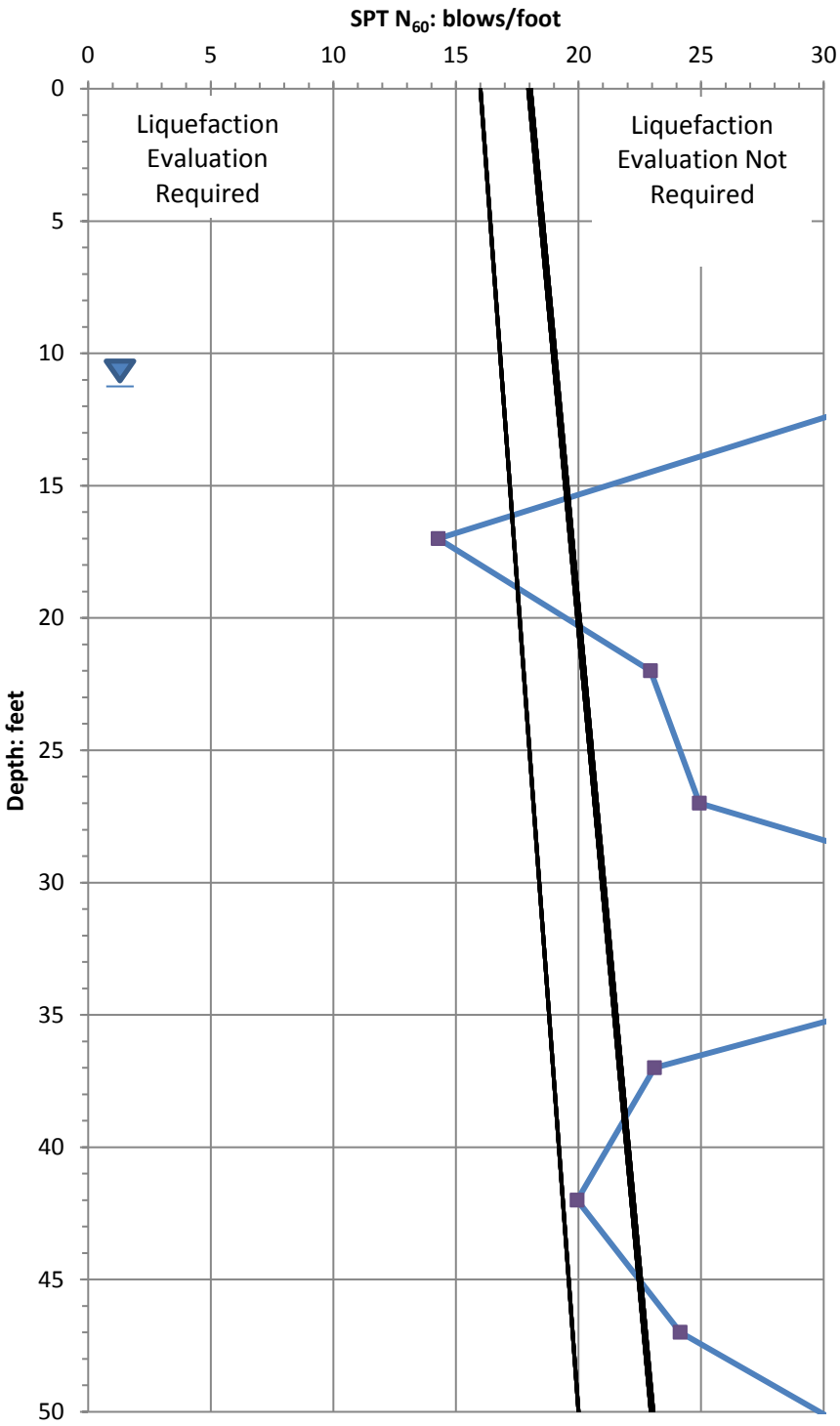
Boring	Depth	N	N60
B-8	12	37	29
	14	32	29
	17	17	15
	22	16	16
	27	19	19
	32	22	23
	37	21	22
	42	21	22
	47	24	25
	52	19	20

Boring	Depth	N	N60
B-9	7	13	10
	9	12	9
	12	13	10
	17	21	19
	22	24	24
	27	26	26
	32	26	27
	37	31	33
	42	21	22
	47	27	28
	52	41	43

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

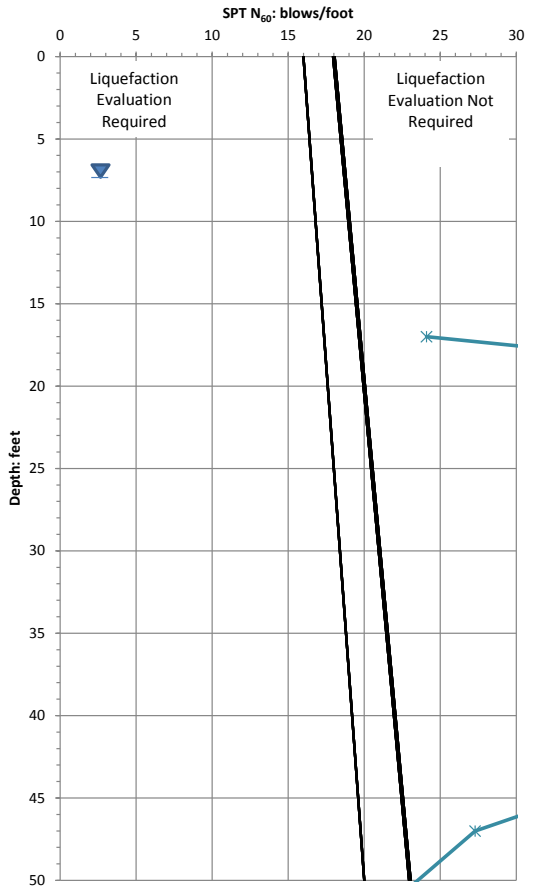
B-1

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

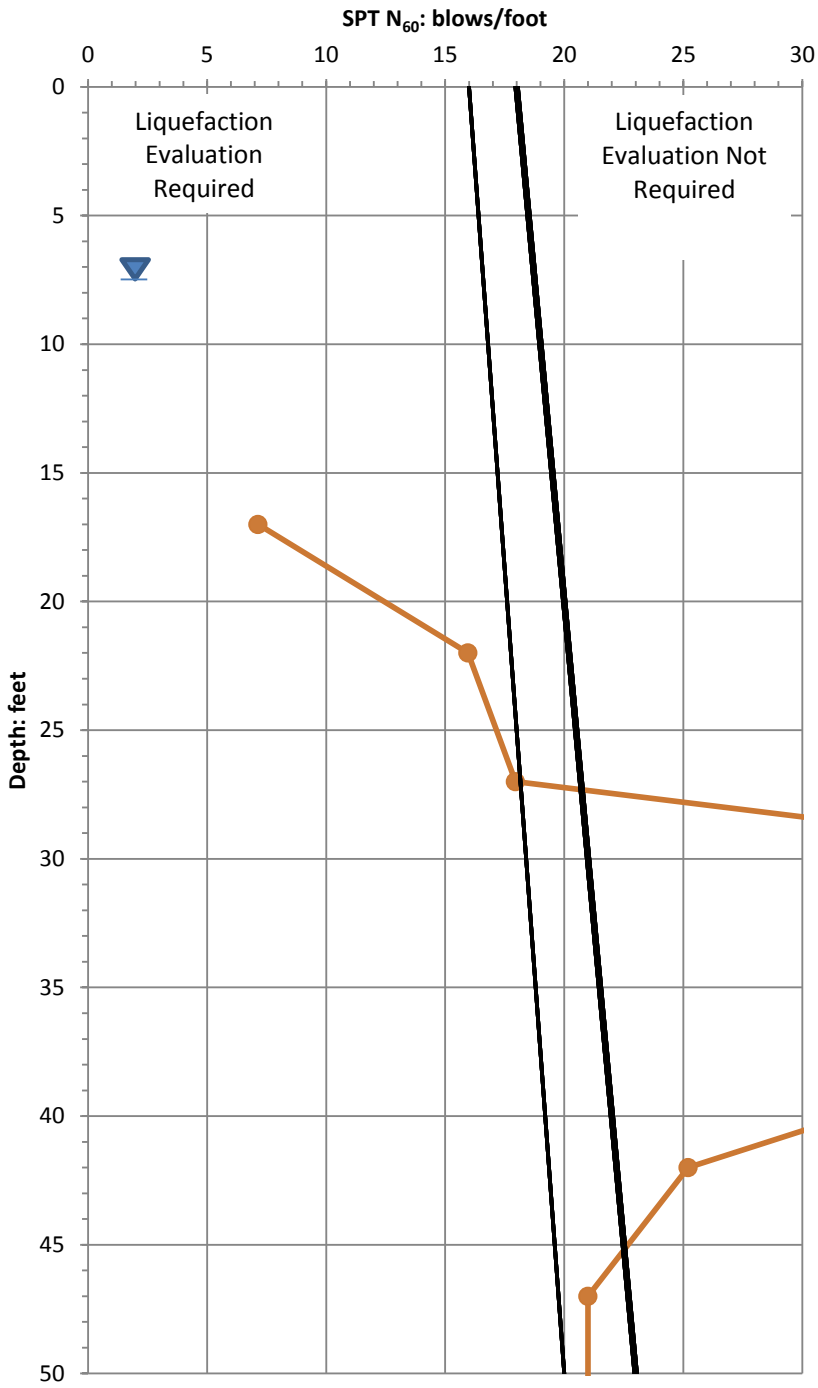
B-2

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

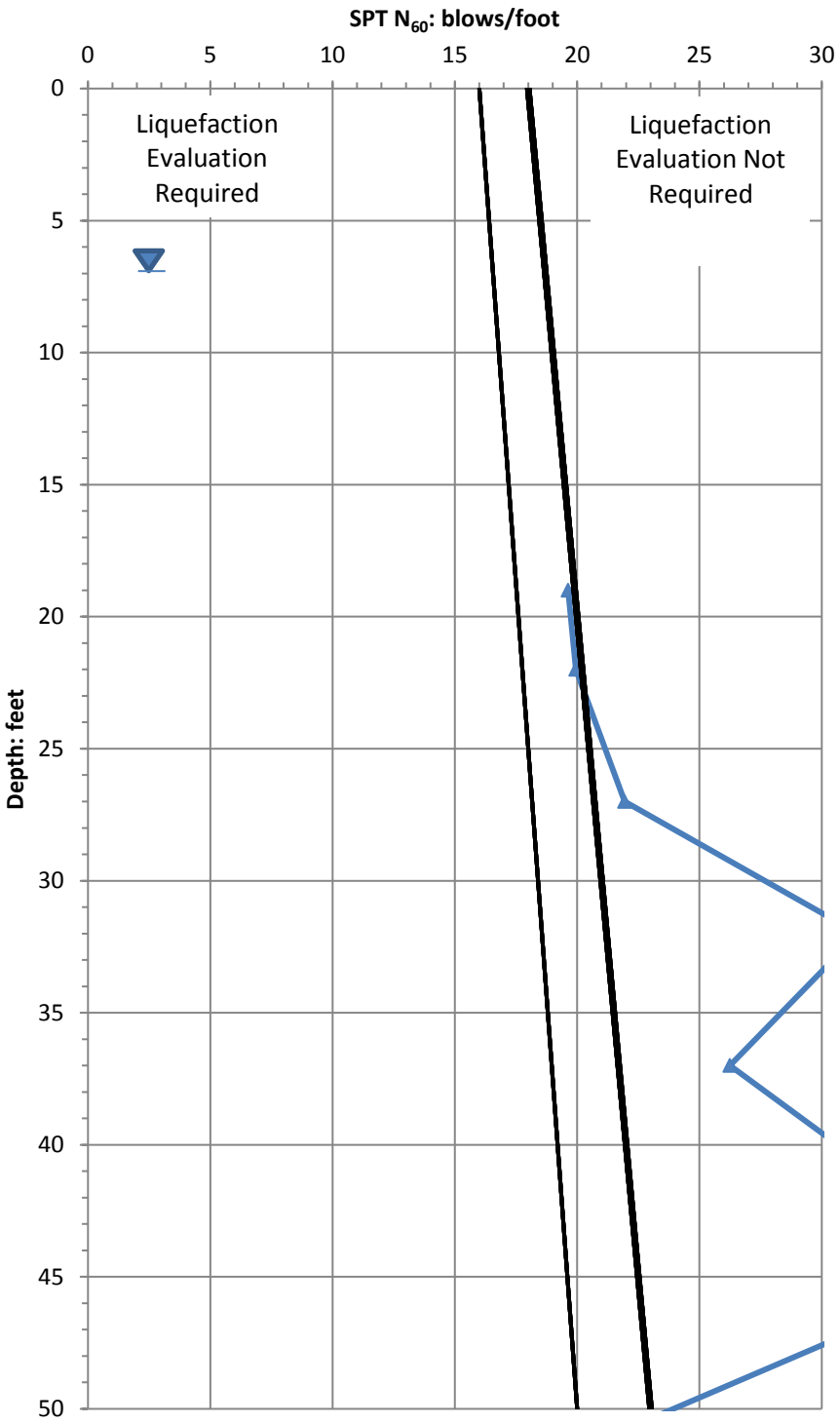
B-3

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

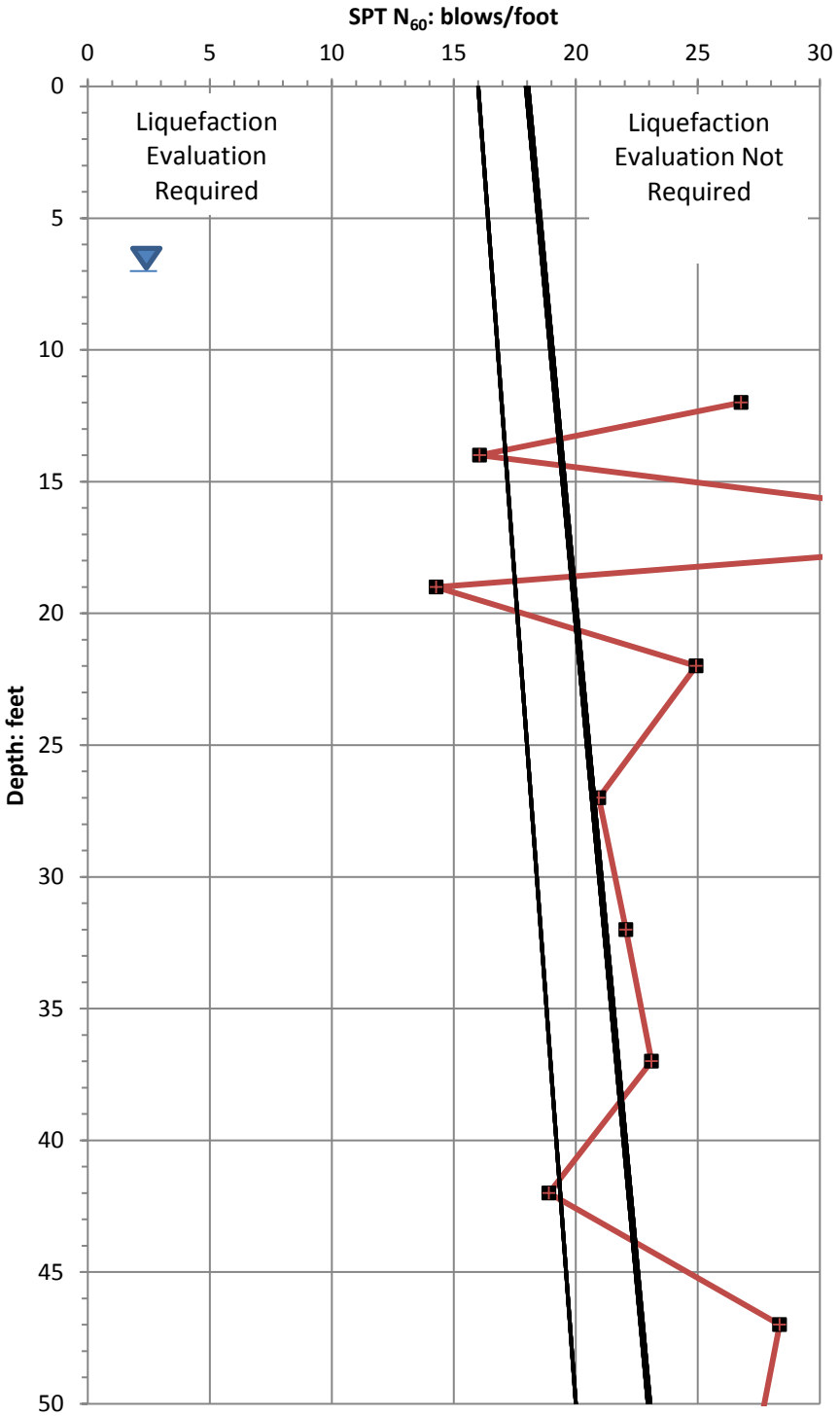
B-4

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

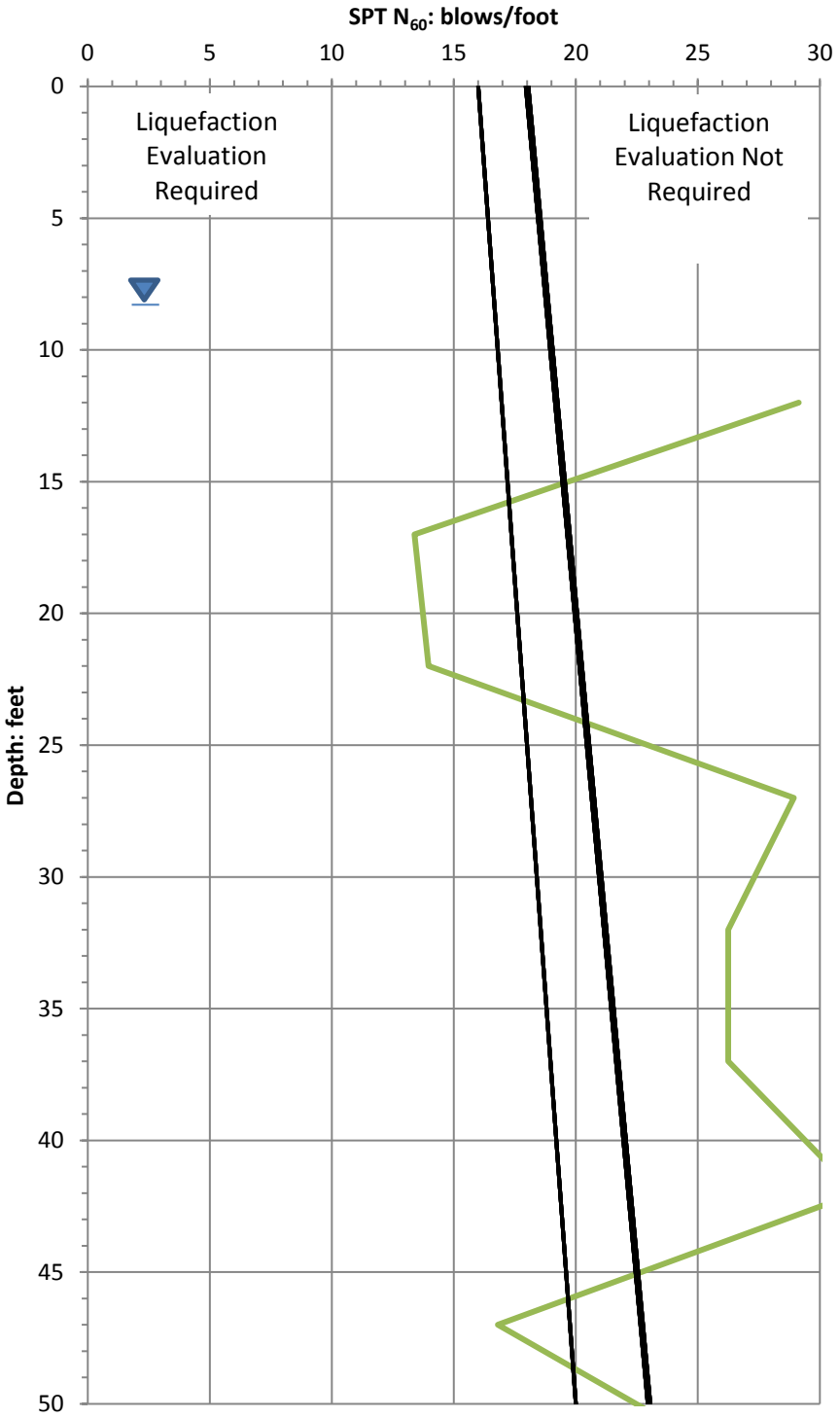
B-5

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

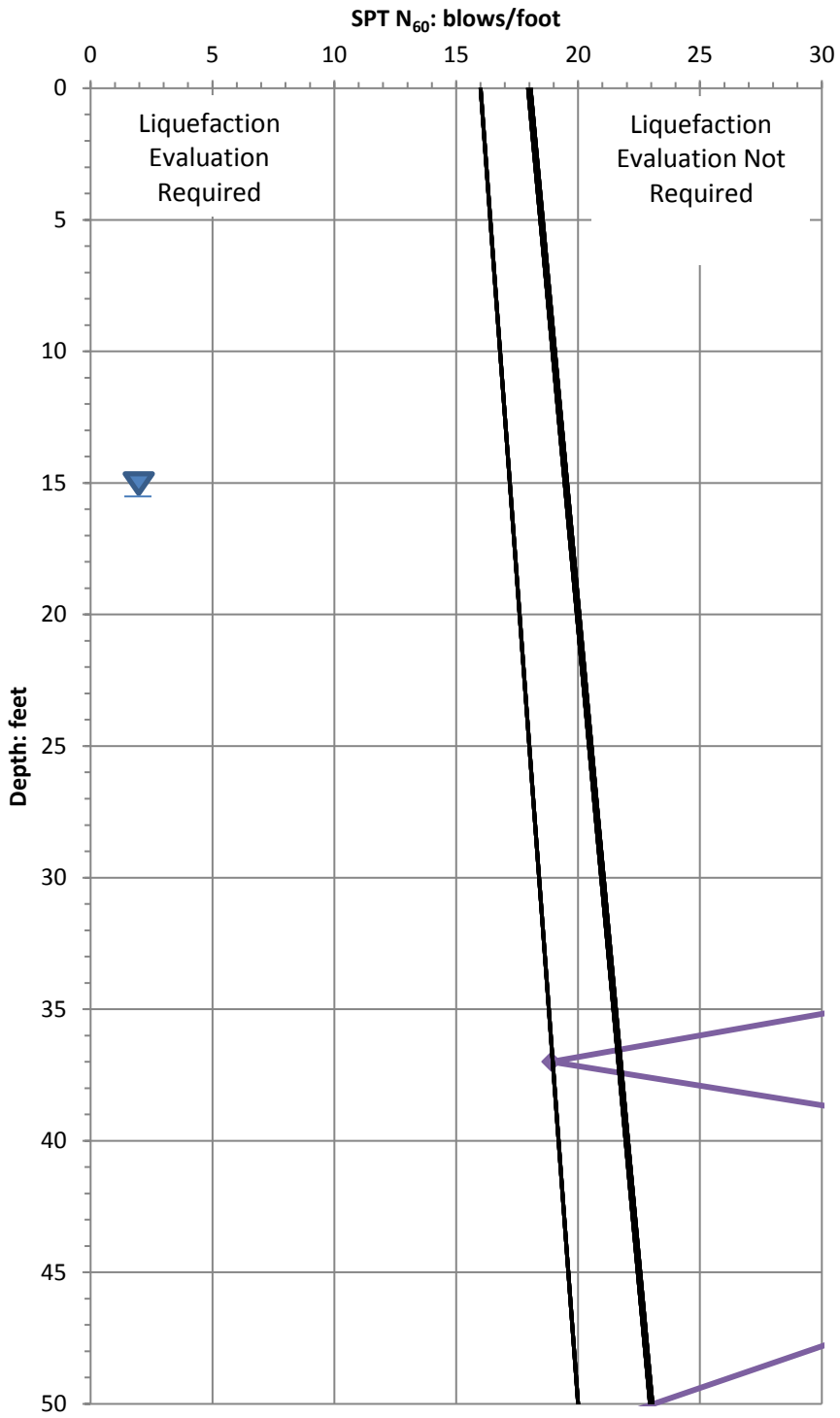
B-6

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

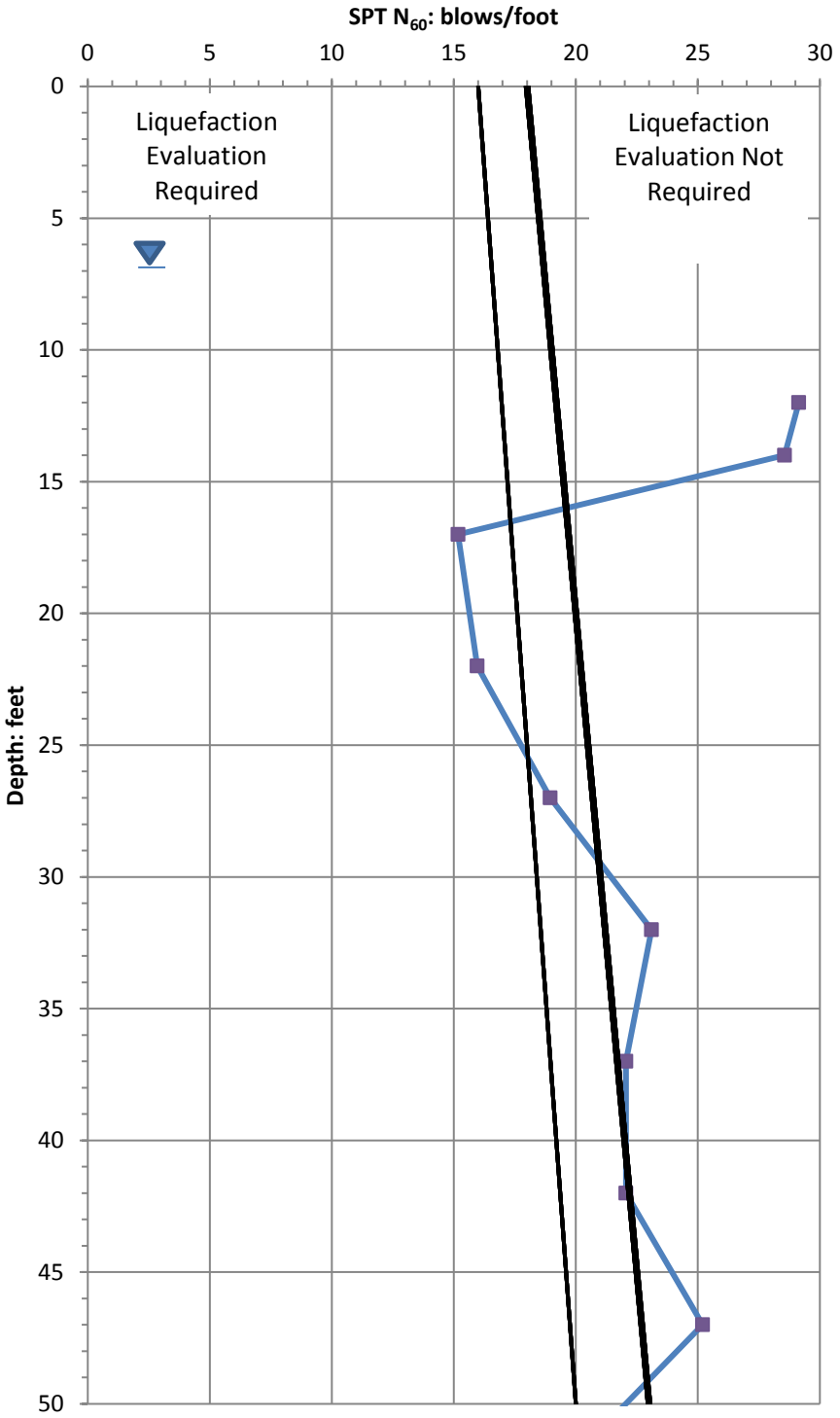
B-7A

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

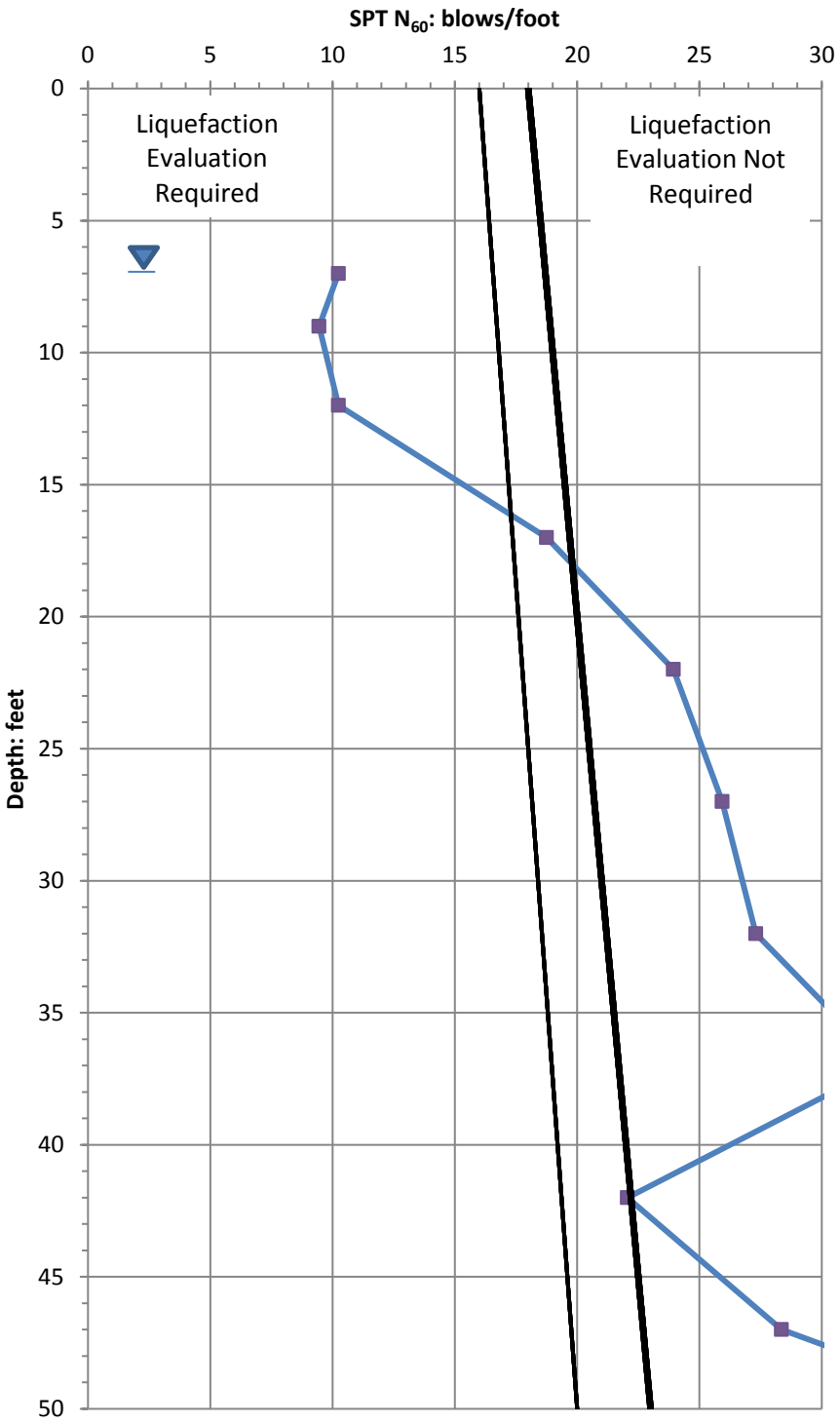
B-8A

FIGURE 14

SESI CONSULTING ENGINEERS

Location: Brooklyn, NY
Project Number: 9753

NYC Liquefaction Potential



Limit Lines

Structural Occupancy Category II/III Limit

Structural Occupancy Category IV Limit

Notes

1) For Occupancy Category definitions see NYC Building Code Table 1604.5.

2) Category I structures exempt for liquefaction assessment.

3) Non-cohesive soils below ground water table and less than 50 feet below the ground surface shall be considered to have potential for liquefaction.

4) Potential for liquefaction on level ground determined on basis of risk categories associated with SPT normalized to a 60 percent efficiency, plotted on the figure provided.

5) Figure derived from NYC Building Code- Ch. 18: Soils and Foundations.

B-9

FIGURE 14

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

Quality Assurance Project Plan

1510 Broadway Dry Cleaner Site
1510 Broadway
Brooklyn, NY 11221
BCP # C224280

1.0 PROJECT DESCRIPTION

This document presents the Quality Assurance Project Plan (QAPP) for the remedial investigation (RI) for the proposed development at 1510 Broadway, Brooklyn, New York.

The Site, which is the subject of this RIWP, is approximately 0.46-acres. The Site properties are identified as Block 1489 Lots 6 & 11-18. An application to merge these nine lots into one lot with the address 1510 Broadway has been submitted to the City for processing. The Site is depicted on a United States Geological Survey (USGS) Topographic Map (Figure 2.1) and Survey Map (Figure 2.2).

The Site is bounded by Broadway, Hancock Street, Saratoga Avenue, and Jefferson Avenue. The elevated subway is located above Broadway (J and Z lines), and the MTA Halsey Street Station is adjacent to site. The surrounding area is predominantly residential and commercial in use, with some institutional uses. Currently, the Site is vacant and enclosed by construction fencing. There is one small garage building on the BCP Site, which will be demolished.

The project site is located within Community District 19 at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant / Brownsville section of Brooklyn, New York. The project is entirely within the New York City transit zone. The address for the BCP Site once lot consolidation occurs will be 1510 Broadway. The proposed development consists of one eight-story structure with a partial cellar level. The cellar will contain mechanical spaces and building storage. The first floor will contain the commercial retail space, a residential lobby, five residential units, a residential recreational area, laundry and bike rooms, and additional mechanical and building storage rooms. Residential units will occupy the second through eighth floors, with an exterior residential recreation courtyard proposed on the second floor

2.0 PROJECT ORGANIZATION

The RIWP will be conducted by Soils Engineering Services, Inc. (SESI), on behalf of 1510 Broadway LLC. The organization of SESI's key project management and field staff, and respective areas of responsibility, is presented below.

2.1 Project Principal

Fuad Dahan PhD, P.E.

Provide technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.

2.2 Principal Engineer

Fuad Dahan, PhD, P.E.

Provide technical guidance and review of reports, analytical data. Will have key involvement in screening and development of remedial alternatives.

2.3 Project Manager

Fuad Dahan, PhD, P.E.

Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to BCP program requirements and client expectations.

2.4 Remedial Investigation Program Manager

Joe Scardino

Responsible for coordinating and directing field efforts of SESI staff and subcontractors, and for maintaining that work is done according to QAPP specifications.

2.5 Field Team Leader

Joseph Scardino

Responsible for overseeing field work during the RI and IRM, including observing subcontractors, maintaining field notes, and collecting samples of various environmental media, in accordance with the NYSDEC-approved Work Plan.

2.5 Quality Assurance Officer

Steven Gustems, PG

Responsible for will reviewing sampling procedures and certify that the data was collected and analyzed using the appropriate procedures.

3.0 QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

In cases where NYSDOH ELAP Certification exists for a specific group or category of parameters, the laboratories performing analysis in connection with this project will have appropriate NYSDOH ELAP Certification. For analysis of samples where Analytical Service Protocol (ASP, June 2000) Category B deliverables are required.

Detection limits set by NYSDEC-ASP (June 2000) will be used for all sample analyses unless otherwise noted. If NYSDEC-ASP-dictated detection limits prove insufficient to assess project goals (i.e., comparison to drinking water standards or attainment of ARARs), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control objectives for all measurement data include completeness, representativeness, comparability, precision and accuracy.

3.1 COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of the study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

3.2 REPRESENTATIVENESS

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing and rinsing with pesticide-grade methanol, followed by a thorough rinse with distilled water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment and sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 7/85 or as periodically updated.

The analysis results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

3.3 COMPARABILITY

Consistency in the acquisition, preparation, handling and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

3.4 PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), colorimetry, atomic spectroscopy, gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures (June 2000). Data will be 100 percent compliant with NYSDEC-ASP requirements.

The number of duplicate, spiked and blank samples analyzed will a minimum of 1 duplicate for every 20 samples per each medium of groundwater and soil. The inclusion and frequency of analysis of field blanks will be on the order of one per every 20 samples (soil) but not more than one per day. For the aqueous matrix field blanks will be collected at a frequency of one per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks (water matrix) or field blanks (soil).

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

4.0 SAMPLING PROCEDURES

4.1 SAMPLING PROGRAM

The sampling program for this project will include soil, groundwater and soil vapor. Soil samples will be collected from split spoon sampling or macrocore devices retrieved from soil borings. Groundwater samples will be collected from groundwater monitoring wells

using low flow purging techniques. Soil vapor samples will be collected from vapor points screened in the vadose zone using Summa Canisters.

4.1.1 Drilling/Sampling Procedures

Soil and groundwater samples will be collected by means of a soil boring program. Soil borings shall be completed using the hollow stem auger drilling methods, direct push methods, or rotary drilling methods, whichever methods are determined to be best suited to site conditions by the SESI project manager and SESI field team leader.

Soil samples will be collected from soil borings and analyzed in accordance with the NYSDEC-approved Work Plan. Monitoring wells for groundwater sample collection will be installed in select completed soil borings. Either hollow stem auger (HSA) or direct push drilling methods may be utilized for monitoring well completion.

Samples of the encountered overburden materials shall be collected continuously during drilling so that a complete soil profile is examined and described by the SESI field geologist. The sampling method employed shall be ASTM D-1586/Split Barrel Sampling using a standard 2-foot long, 2-inch outside diameter split- spoon sampler with a 140-pound hammer, in cases where HSA methods are used. Upon retrieval of the sampling barrel, the collected sample shall be placed in glass jars and labeled, stored on site (on ice in a cooler if necessary), and transmitted to the appropriate testing laboratory or storage facility. Chain-of-custody procedures will be practiced following Section 15, EPA-600/4-82-029, Handbook for Sampling and Sample Preservation of Water and Waste Waters.

A geologist or engineer will be on site during the drilling operations to fully describe each soil sample, following the New York State Soil Description Procedure, and to retain representative portions of each sample.

The drilling contractor will be responsible for obtaining accurate and representative samples, informing the geologist of changes in drilling pressure, keeping a separate general log of soils encountered including blow counts [i.e., the number of blows from a soil sampling drive weight (140 pounds)] required to drive the split-spoon sampler in 6-inch increments and installing monitoring wells to levels directed by the supervising geologist following specifications further outlined in this protocol.

4.1.2 Monitoring Well Completion

Monitoring wells will be constructed of 0.010-inch slot size PVC well screen and riser casing. Other materials utilized for completion will be washed silica sand (Q-Rock No. 4 or approved equivalent) bentonite grout, Portland cement, and a protective steel locking well casing and cap with locks. The depth of the wells will be determined based on the depth to water, type of contaminant and field conditions encountered.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time, a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to collapse 2 to 3 feet above the top of the screen. Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/bentonite grout will continue to be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical flow above the screened interval. During placement of sand and bentonite pellets, frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

A bolt-down protective curb box will be installed, flush with the ground, or steel “stick-up” protective casing and secured by a Portland cement seal. The cement seal shall extend laterally at least 1 foot in all directions from the protective casing and shall slope gently away to drain water away from the well.

4.1.3 Well Development

All monitoring wells will be developed or cleared of all fine-grained materials and sediments that have settled in or around the well during installation so that the screen is transmitting representative portions of the groundwater. The development will be by one of two methods, pumping or bailing groundwater from the well until it yields relatively sediment-free water.

A decontaminated pump or bailer will be used and subsequently decontaminated after each use following procedures outlined in the Decontamination Protocol. Pumping or bailing will cease when the turbidity falls below 50 NTUs or until specific conductivity, pH, and temperature are stable (i.e., consecutive readings are within 10 percent with no overall upward or downward trends in measurements). Well development water will be disposed of on the ground surface at each well location or contained in drums as conditions warrant.

4.1.4 Decontamination

All drilling equipment and associated tools including augers, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials will be decontaminated before any drilling on site begins, between each well, and prior to removing any equipment from the site. The preferred decontamination procedure will be to scrape the equipment from any residual soils and then rinse with water and Alconox®. Every effort will be made to minimize the generation of contaminated water.

4.2 Groundwater Sampling Program.

4.2.1 Well Evacuation

Prior to sampling a monitoring well, the static water level will be recorded. All well data will be recorded on a field sampling record. The wells will be sampled in accordance with the USEPA guidelines for the Low Flow Purging Sampling (LFPS). The purpose of LFPS is to collect groundwater samples from monitoring wells that are representative of ambient groundwater conditions in the aquifer. The LFPS method reduces turbidity which is needed particularly when sampling for metals.

4.2.2 Sampling Procedure

The wells will be sampled using the LFPS technique. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. QED bladder pumps are used for this method. The pump intake is lowered to the mid-point of the water column or as subsurface features such as bedrock fractures or more permeable zones warrant. At the initiation of low flow purging a water level is recorded as well as field parameters. Field parameters are then monitored every five minutes during low flow purging using a flow through cell. When three consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells are used so continuous real time readings are made. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing.

In addition to water samples collected from the monitoring wells, two types of "blanks" will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 ml VOA vials, as follows:

A trip blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, deionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for TCL volatiles is planned (water matrix only). The trip blank will be analyzed for TCL volatile organic compounds as a measure of the internal laboratory procedures and their effect on the results.

4.3 Soil Vapor Sampling

Soil vapor sampling will be conducted in accordance with NYSDOH Guidance for Evaluating Indoor Air Intrusion in New York State (February 2005). Soil vapor samples will be collected in the vadose zone from shallow (5 feet) well points. Each well point will be installed in a shallow boring drilled either by hand-operated equipment (e.g. hand auger or percussion hammer drill), or by a small truck-mounted drill rig. Drilling equipment used shall be based on soil conditions, and the method that provides the most practical approach.

Each well point will consist of an inert sampling tube (polyethylene, stainless steel, or Teflon®) with a 6-inch screened section at the bottom through which soil vapors can be

sampled. The screen slot size will be 0.0075 inches. A sampling zone will be created around the screened section by backfilling with 1 to 2 feet of porous course sand or glass beads, and at least three feet of bentonite will be placed above the porous sampling zone to form a seal from the surface. Native clean soil will be packed around the remaining annulus to the ground surface.

Each designated soil vapor sampling location will be purged of a minimum of three volumes using a low volume pump, and then attached to a regulator, and secured with a clamp. The regulator will then be attached to a 1-liter summa canister.

The regulator will be set to collect a soil vapor sample at a flow rate of less than 0.2 liters per minute. After the summa canister is filled, the valve will be closed.

Each canister will be listed according to a specific sample I.D. on a chain of custody form. Sample canisters will be delivered to the laboratory within 24 hours and analyzed for VOCs by method TO-15. The detection limit for VOCs will be 1 µg/m3 or less.

The soil vapor sampling effort will include the use inert helium tracer gas to verify that the soil vapor samples are not diluted by ambient air. The atmosphere around the sampling tube will be enriched with the tracer gas, and the soil vapor sample will be collected in the presence of the enriched tracer atmosphere. This will be accomplished by placing an inverted plastic pail over the sampling point and filling the pail with the tracer gas via a small tube penetrating the site of the pail. Refer to NYSDOH Guidance for Evaluating Indoor Air Intrusion in New York State (October 2006).

Weather conditions in the 48 hours prior to the test, and during the test, will be noted, including average wind speed, precipitation, temperature, and barometric pressure.

4.4 SAMPLE PRESERVATION AND SHIPMENT

Since all bottles will contain the necessary preservatives as shown in Table 4.1, they need only be filled. The 40 ml VOA vials must be filled brim full with no air bubbles. The other bottles should be filled to within about 1 inch from the top.

The bottles will be sent from the laboratory in coolers which will be organized on a per site basis. Following sample collection, the bottles should be placed on ice in the shipping cooler. The samples will be cooled to 4°C, but not frozen.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the ASP.

5.0 *SAMPLE CUSTODY*

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by NEIC Policies and Procedures (USEPA-330/9-78-001-R, Revised June 1988) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

5.1 FIELD SAMPLE CUSTODY

A chain-of-custody record accompanies the samples from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two copies of this record follow the samples to the laboratory. The laboratory maintains one file copy and the completed original is returned to the site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated and ice is used to maintain samples at approximately 4°C until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24-48 hours of the day of collection depending on parameter holding times.

Each sample shipping container is assigned a unique identification number by the laboratory. This number is recorded on the chain-of-custody record and is marked with indelible ink on the outside of the shipping container. The field sampler will indicate the sample designation/location number in the space provided on the appropriate chain-of-custody form for each sample collected. The shipping container is closed and a seal provided by the laboratory is affixed to the latch. This seal must be broken to open the container, and this indicates possible tampering if the seal is broken before receipt at the laboratory. The laboratory will contact the site investigation team leader and the sample will not be analyzed if tampering is apparent.

5.2 LABORATORY SAMPLE CUSTODY

The site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

1. The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
2. Upon receipt of the samples, the custodian will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody record and records the date and time received.
3. Care is exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.
4. The samples are stored in a secured area at a temperature of approximately 4°C until analyses are to commence.
5. A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
6. A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

5.3 FINAL EVIDENCE FILES

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession and you placed it in a secure area.
- It is in a designated secure area.

6.0 CALIBRATION PROCEDURES

Instruments and equipment used to gather, generate or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the ASP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

7.0 ANALYTICAL PROCEDURES

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP (June 2000) and are summarized on Table 7.1. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than 1 to 5. The sample shall be either re-extracted, re-sonicated, re-stream distilled, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

7.1 VOLATILE ORGANICS (VOA)

For the analysis of water samples for Target Compound List (TCL), volatile organic compounds (VOCs), no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Method 8260 will be used, plus tentatively identified compounds (TICs). USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted.

7.2 SEMI-VOLATILE ORGANIC COMPOUNDS

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are

described in NYSDEC-ASP Volume I, Section D-III. USEPA Method 8270 will be used, plus tentatively identified compounds (TICs).

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

7.3 PESTICIDE AND PCB COMPOUNDS

The sample preservation procedures for gas chromatography for pesticides and PCB's will be as described in the NYSDEC-ASP methods (Section D-IV). The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

7.4 METALS

Water, soil and waste samples will be analyzed for the metals listed in Table 7.1. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The analyses for metals will be performed by atomic absorption spectroscopy (AAS) or inductively-coupled plasma emission spectroscopy (ICPES), as specified in the ASP with regard to AAS flame analysis.

7.5 SITE SPECIFICITY OF ANALYSES

Work plans prepared for remedial investigation waste sites contain recommendations for the chemical parameters to be determined for each site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste sites. Analyses of Target Compound List (TCL) analytes will be performed on all samples.

TABLE 4.1 – SAMPLE CONTAINERIZATION

PARAMETER & ANALYTICAL METHOD	NO.	BOTTLE TYPE	PRESERVATIVE(1)	HOLDING TIME
Aqueous Samples				
SVOCs (BNAs) – USEPA 8270C	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081A	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
VOCs – USEPA 8260B	2	40 mL, glass vial with septum cap	Hydrochloric Acid to pH <2	14 days
Metals(2)	1	1-liter, plastic bottle	Nitric acid to pH <2	180 days Mercury: 28 days
Cyanide – SM 4500-CN-E	1	1-liter, plastic	Sodium Hydroxide to pH >12	14 days
Soil, Sediment, Solid Waste Samples				
VOCs – USEPA 8260B	3	15-gram EnCore samplers	None	14 days
SVOCs (BNAs) – USEPA 8270C	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction, 40 days extracted)
Pesticides – USEPA 8081A	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082	1	4-oz. glass jar with Teflon lid	None	7 days (until extraction) 40 days (extracted)
Metals(2)	1	4-oz. glass jar with Teflon lid	None	180 days Cyanide: 14 days Mercury: 28 days
Soil Vapor / Indoor Air Samples				
VOCs – USEPA TO-15	1	Summa Canister	None	30 days

(1) All samples will be preserved with ice during collection and shipment.
(2) From verified time of sample receipt by the analytical laboratory (within 24 to 48 hours of collection).
(3) A complete list of compounds is provided on Table 7.1.

TABLE 4.2 – SAMPLING PROCEDURE FOR MONITORING WELLS USING VOLUME AVERAGED PURGING

1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.

2. Sampling device and electric contact probe decontaminated.
    a. Sampling device and probe are rinsed with pesticide-grade methanol and distilled water.
    b. Methanol is collected into a large funnel which empties into a five- gallon container.

3. Sampling device lowered into well.
    a. Bailer lowered by dedicated PVC or polypropylene line.

4. Sample taken.
    a. Sample is poured slowly from the open end of the bailer and the sample bottle tilted so that aeration and turbulence are minimized.
    b. Duplicate sample is collected when appropriate.

5. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.

6. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.
    a. Dedicated line is disposed of or left at well site.

7. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.

8. Chain-of-custody forms are completed in triplicate.
    a. The original and one carbon copy are put into a zip-lock bag and placed into the cooler.

9. The original will be returned following sample analysis.
    a. A second carbon copy is kept on file.

10. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

TABLE 4.3 – SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-STESS (LOW-FLOW) METHODS

1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.

2. Sampling device is lowered into well. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well. Pump intake must be no less than 2 feet from the bottom of the well to prevent disturbance and resuspension of sediments which may be at the bottom of the well.

3. Measure water level again: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

4. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

5. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):

    a. 0.1 for pH
    b. 3% for specific conductance (conductivity)
    c. 10 mv for redox potential
    d. 10% for DO and turbidity

6. Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

7. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

8. Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and

equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.

9. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.

10. Measure and record well depth.

11. Close and lock the well.

12. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.

13. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.

    a. Dedicated line is disposed of or left at well site.

14. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.

15. Chain-of-custody forms are completed in triplicate.

    a. The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis.
    b. A second carbon copy is kept on file.

16. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

TABLE 7-1 – CONTRACT-REQUIRED QUANTITATION LEVELS AND ANALYTICAL METHODS FOR ASP INORGANICS, ASP VOLATILES, ASP SEMI-VOLATILES, ASP PESTICIDES, AND PCBS

Target Compound List (TCL) and Contract-Required Quantitation Limit

SECTION 1 - ASP INORGANICS Method: NYSDEC-ASP-91-4					
	PARAMETER	**METHOD DETECTION LIMIT * (µg/l)**		**PARAMETER**	**METHOD DETECTION LIMIT * (µg/l)**
1.	Aluminum	18.8	13.	Magnesium	73.7
2.	Antimony	0.399	14.	Manganese	2.88
3.	Arsenic	0.734	15.	Mercury	0.115
4.	Barium	1.16	16.	Nickel	2.36
5.	Beryllium	0.245	17.	Potassium	86.7
6.	Cadmium	0.808	18.	Selenium	5.35
7.	Calcium	98.8	19.	Silver	0.591
8.	Chromium	2.3	20.	Sodium	128
9.	Cobalt	1.6	21.	Thallium	0.157
10.	Copper	1.99	22.	Vanadium	1.11
11.	Iron	51.1	23.	Zinc	11.1
12.	Lead	0.552	24.	Cyanide	0.004

SECTION 2 – ASP ORGANICS (VOLATILES) Method: NYSDEC-ASP-91-1					
	VOLATILE	**METHOD DETECTION LIMIT * (µg/l)**		**VOLATILE**	**METHOD DETECTION LIMIT * (µg/l)**
1.	Chloromethane	0.143	18.	1,2-Dichloropropane	0.455
2.	Bromomethane	1	19.	cis-1,3-Dichloropropene	0.455
3.	Vinyl Chloride	0.171	20.	Trichloroethene	0.314
4.	Chloroethane	0.320	21.	Dibromochloromethane	0.281
5.	Methylene Chloride	0.315	22.	1,1,2-Trichloroethane	0.433
6.	Acetone	4.98	23.	Benzene	0.428
7.	Carbon Disulfide	0.155	24.	Trans-1.3-Dichloropropene	0.485
8.	1,1-Dichloroethylene	0.117	25.	Bromoform	0.536
9.	1,1-Dichloroethane	0.264	26.	2-Hexanone	2.90
10.	1,2-Dichloroethylene (total)	0.219	27.	4-Methyl, 1,2-Pentanone	2.73
11.	Chloroform	0.326	28.	Tetrachloroethylene	0.249
12.	1,2-Dichloroethane	0.430	29.	Toluene	0.379
13.	2-Butanone	1.85	30.	Chlorobenzene	0.377
14.	1,1,1-Trichloroethane	0.238	31.	Ethylbenzene	0.298
15.	Carbon Tetrachloride	0.208	32.	Styrene	0.415
16.	Bromodichloromethane	0.343	33.	Total Xylenes	0.361
17.	1,1,2,2-Tetrachloroethane	0.367			

SECTION 3 - ASP ORGANICS (SEMI-VOLATILES) Method: NYSDEC-ASP-91-2					
	SEMI-VOLATILE	**METHOD DETECTION LIMIT * (µg/l)**		**SEMI-VOLATILE**	**METHOD DETECTION LIMIT * (µg/l)**
1.	Phenol	0.292	33.	Acenaphthene	1.08
2.	Bis(2-chloroethyl)ether	0.295	34.	2,4-Dinitrophenol	14.4
3.	2-Chlorophenol	0.377	35.	4-Nitrophenol	0.689
4.	1,3-Dichlorobenzene	0.13	36.	Dibenzofuran	1.10
5.	1,4-Dichlorobenzene	0.13	37.	Dinitrotoluene	20
6.	1,2-Dichlorobenzene	0.12	38.	Diethylphthalate	0.976
7.	2-Methylphenol	0.259	39.	4-Chlorophenyl phenyl ether	1.28
8.	2,2'oxybis(1-Chloropropane)	0.629	40.	Fluorene	0.912
9.	4-Methylphenol	0.235	41.	4-Nitroanile	.0543
10.	N-Nitroso-dipropylamine	0.430	42.	4,6-Dinitro-2-methylphenol	13.3
11.	Hexachloroethane	1.19	43.	N-nitrosodiphenyl amine	0.891
12.	Nitrobenzene	0.567	44.	4-Bromophenyl phenyl ether	0.745
13.	Isophorone	0.798	45.	Hexachlorobenzene	0.396
14.	2-Nitrophenol	0.747	46.	Pentachlorophenol	1.45
15.	2,4-Dimethylphenol	0.238	47.	Phenanthrene	0.580
16.	Bis(2-Chloroethoxy) methane	0.239	48.	Anthracene	0.634
17.	2,4-Dichlorophenol	0.421	49.	Carbazole	0.679
18.	1,2,4-Trichlorobenzene	0.11	50.	Di-n-butyl phthalate	0.840
19.	Naphthalene	1.13	51.	Fluoranthene	0.842
20.	4-Chloroaniline	1.88	52.	Pyrene	1.64
21.	Hexachlorobutadiene	0.780	53.	Butyl benzyl phthalate	0.854
22.	4-Chloro-3-methylphenol	0.575	54.	3,3'-Dichloro benzidine	1.43
23.	2-Methylnaphthalene	1.10	55.	Benzo(a)anthracene	0.592
24.	Hexachlorocyclopentadiene	1.72	56.	Chrysene	0.907
25.	2,4,6-Trichlorophenol	0.299	57.	Bis(2-ethylhexyl) phthalate	1.70
26.	2,4,5-Trichlorophenol	0.279	58.	Di-n-octyl phthalate	4.75
27.	2-Chloronapthalene	1.18	59.	Benzo(b)fluoranthene	1.14
28.	2-Nitroananiline	0.474	60.	Benzo(k)fluoranthene	0.674
29.	Dimethyl phthalate	0.976	61.	Benzo(a)pyrene	0.405
30.	Acenaphthylene	0.823	62.	Indeno(1,2,3-cd) pyrene	1.29
31.	2,6-Dinitrotoluene	0.390	63.	Dibenz(a,h) anthracene	0.720
32.	3-Nitroaniline	0.962	64.	Benzo(g,h,i)perylene	1.43

SECTION 3 - ASP ORGANICS (PESTICIDES/PCBS) Method: NYSDEC-ASP-91-3			
PESTICIDE/PCB	**METHOD DETECTION LIMIT * (µg/l)**	**PESTICIDE/PCB**	**METHOD DETECTION LIMIT * (µg/l)**
1. Alpha-BHC	0.007	15. 4,4'-DDT	0.004
2. Beta-BHC	0.004	16. Methoxychlor	0.004
3. Delta-BHC	0.005	17. Endrin ketone	0.008
4. Gamma-BHC (lindane)	0.012	18. Endrin aldehyde	0.008
5. Heptachlor	0.003	19. Alpha-Chlordane	0.055
6. Aldrin	0.003	20. Gamma-Chlordane	0.055
7. Heptachlor epoxide	0.005	21. Toxaphene	0.11
8. Endosulfan I	0.002	22. AROCHLOR-1016	0.119
9. Dieldrin	0.003	23. AROCHLOR-1221	0.119
10. 4,4'-DDE	0.002	24. AROCHLOR-1232	0.119
11. Endrin	0.004	25. AROCHLOR-1242	0.119
12. Endosulfan II	0.004	26. AROCHLOR-1248	0.119
13. 4,4'-DDD	0.006	27. AROCHLOR-1254	0.107
14. Endosulfan sulfate	0.006	28. AROCHLOR-1260	0.107

*Matrix: groundwater. For soil matrix, multiply CRDL by 100.

**Quantitation limit for medium-level soil is 1,200 µg/kg (wet weight basis).

APPENDIX C:
HEALTH AND SAFETY PLAN (HASP)

SESI
CONSULTING
ENGINEERS

SITE-SPECIFIC HEALTH AND SAFETY PLAN

1510 Broadway Dry Cleaner Site
1510 Broadway
Brooklyn, NY 11221

BCP # C224280

Prepared For:

1510 Broadway LLC c/o The Macquesten Companies
438 Fifth Ave Suite 100
Pelham, New York 10803

Prepared By:

SESI CONSULTING ENGINEERS
12A Maple Avenue
Pine Brook, NJ 07058

Project No.: 9753

December 12, 2018

Disclaimer: *This Health and Safety Plan (HASP) is based upon information provided [and, if applicable, conditions discovered during a site visit], and is limited by the project scope. The HASP should be periodically reviewed and updated based on a number of factors, including but not limited to: (1) changes in applicable governmental requirements; (2) changes in procedures at the site; and (3) site conditions which were unknown to SESI Consulting Engineers (SESI) as of the time the HASP was prepared.* This HASP has been prepared for the sole and exclusive use of 1510 Broadway LLC c/o The Macquesten Companies, and may not be relied upon by any other person without the express written consent and authorization of SESI.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

For

1510 Broadway Dry Cleaner Site
1510 Broadway
Brooklyn, NY 11221

Prepared by: _____ Date:

_____

Christopher J. Hoen
SESI- Project Manager

Approved by: _____ Date:

_____

Fuad Dahan
SESI-Principal

Table of Contents

HEALTH AND SAFETY PLAN SUMMARY 8

1.0 INTRODUCTION 9

1.1 OBJECTIVE 9
1.2 SITE AND FACILITY DESCRIPTION 9
1.3 POLICY STATEMENT 9
1.4 REFERENCES 10
1.5 DEFINITIONS 10

2.0 PROJECT SCOPE OF WORK 11

3.0 ROLES AND RESPONSIBILITIES 11

3.1 ALL PERSONNEL 11
3.2 KEY SAFETY PERSONNEL 11
3.2.1 Project Officer (PO) 11
3.2.2 Project Manager (PM) 11
3.2.3 Health and Safety Manager (HSM) 12
3.2.4 Site Safety Officer (SSO) 12
3.2.5 Field Supervisor (FS) 12
3.2.6 Field Personnel (FP) 13
3.3 SUBCONTRACTORS 13
3.4 STOP WORK AUTHORITY 13
3.5 ALL ON-SITE PERSONNEL 14
3.6 VISITORS 14

4.0 PERSONAL PROTECTIVE EQUIPMENT 15

4.1 LEVELS OF PROTECTION 15
4.1.1 Level D Protection 15
4.1.2 Modified Level D Protection 15
4.1.3 Level C Protection 15
4.2 SELECTION OF PPE 16
4.3 SITE RESPIRATORY PROTECTION PROGRAM 16
4.4 USING PPE 16
4.4.1 Donning Procedures 17
4.4.2 Doffing Procedures 17
4.5 SELECTION MATRIX 17

5.0 AIR AND NOISE MONITORING 18

5.1 AIR MONITORING 18
5.2 NOISE MONITORING 18
5.3 MONITORING EQUIPMENT MAINTENANCE AND CALIBRATION 18
5.4 ACTION LEVELS 19

6.0 WORK ZONES AND DECONTAMINATION 20

6.1 WORK ZONES 20

6.1.1 Authorization to Enter ... *20*
6.1.2 Site Orientation and Hazard Briefing ... *20*
6.1.3 Certification Documents ... *20*
6.1.4 Entry Log ... *20*
6.1.5 Entry Requirements ... *20*
6.1.6 Emergency Entry and Exit ... *20*
6.1.7 Contamination Control Zones ... *21*
6.1.8 Exclusion Zone (EZ) ... *21*
6.1.9 Contamination Reduction Zone ... *21*
6.1.10 Support Zone (SZ) ... *21*
6.1.11 Posting ... *21*
6.1.12 Site Inspections ... *21*
6.2 DECONTAMINATION ... 21
6.2.1 Personnel Decontamination ... *21*
6.2.2 Equipment Decontamination ... *22*
6.2.3 Personal Protective Equipment Decontamination ... *22*

7.0 TRAINING AND MEDICAL SURVEILLANCE ... 22

7.1 TRAINING ... 22
7.1.1 General ... *22*
7.1.2 Basic 40-Hour Course ... *22*
7.1.3 Supervisor Course ... *23*
7.1.4 Site-Specific Training ... *23*
7.1.5 Daily Safety Meetings ... *23*
7.1.6 First Aid and CPR ... *23*
7.2 MEDICAL SURVEILLANCE ... 23
7.2.1 Medical Examination ... *23*
7.2.2 Pre-placement Medical Examination ... *24*
7.2.3 Other Medical Examinations ... *24*
7.2.4 Periodic Exam ... *24*
7.2.5 Medical Restriction ... *24*

8.0 GENERAL SAFETY PRACTICES ... 25

8.1 GENERAL SAFETY RULES ... 25
8.2 BUDDY SYSTEM ... 26
8.3 HEAT STRESS ... 26
8.4 HEAT STRESS SAFETY PRECAUTIONS ... 28
Table 4 – Work/Rest Schedule ... *28*
8.5 COLD STRESS ... 29
8.6 SAFETY PRECAUTIONS FOR COLD STRESS PREVENTION ... 30
8.7 SAFE WORK PRACTICES ... 30
8.8 BIOLOGICAL HAZARDS ... 31
8.8.1 Tick Borne Diseases ... *31*
8.8.2 Poisonous Plants ... *32*
8.8.3 Snakes ... *32*
8.8.4 Spiders ... *32*
8.9 NOISE ... 33

8.10 SPILL CONTROL 33
8.11 SANITATION 33
8.11.1 Break Area 33
8.11.2 Potable Water 34
8.11.3 Sanitary Facilities 34
8.11.4 Lavatory 34
8.12 EMERGENCY EQUIPMENT 34
8.13 LOCKOUT/TAGOUT PROCEDURES 34
8.14 ELECTRICAL SAFETY 35
8.15 LIFTING SAFETY 35
8.16 LADDER SAFETY 36
8.17 TRAFFIC SAFETY 37

9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES 38

9.1 EVALUATION OF HAZARDS 38
9.1.1 Hazard Characteristics 38
9.1.2 Potential Health and Safety Hazards 38
9.2 FIELD ACTIVITIES, HAZARDS, AND CONTROL PROCEDURES 39
9.2.1 Mobilization/Construction Stakeout 39
9.2.2 Demolition/Site Clearing 39
9.2.3 Excavation and Cut/Fill Operations 41
9.2.4 Drilling/Subsurface Intrusion Activities 43
9.2.5 Subsurface Chemical Sample Collection/Analysis 47
9.2.6 UST Closure 47
9.2.7 Site Capping System Construction 48
9.2.8 Creek Relocation 48
9.2.9 Decontamination 48
9.2.10 Demobilization 48
9.3 CHEMICAL HAZARDS 49

10.0 EMERGENCY PROCEDURES 51

10.1 GENERAL 51
10.2 EMERGENCY RESPONSE 51
10.2.1 Fire 51
10.2.2 Contaminant Release 51
10.3 MEDICAL EMERGENCY 51
10.3.1 Emergency Care Steps 52
10.4 FIRST AID - GENERAL 52
10.4.1 First Aid - Inhalation 52
10.4.2 First Aid - Ingestion 52
10.4.3 First Aid - Skin Contact 52
10.4.4 First Aid - Eye Contact 53
10.5 REPORTING INJURIES, ILLNESSES, AND SAFETY INCIDENTS 53
10.6 EMERGENCY INFORMATION 53
10.6.1 Directions to Hospital 53

11.0 LOGS, REPORTS, AND RECORD KEEPING 54

11.1 HASP Field Change Request 55
11.2 Medical and Training Records 55
11.3 Exposure Records 55
11.4 Accident/Incident Report 55
11.5 OSHA Form 200 55
11.6 On-Site Health and Safety Field Logbooks 55
11.7 Material Safety Data Sheets 55

LIST OF FIGURES

Figure No.	Title
Fig-1	Directions to Saint Joseph's Medical Center

LIST OF EMBEDDED TABLES

Table	Title	Page
1.	Key Safety Personnel	8
2.	PPE Selection Matrix	11
3.	Airborne Contaminant Action Levels	12
4.	Work/Rest Schedule	22
5.	Wind Chill Temperature Chart	23
6	List of Primary Contaminants	44
7	Emergency Contacts	51

LIST OF ATTACHMENTS

Attachment 1	Air Monitoring Log
Attachment 2	OSHA Poster
Attachment 3	HASP Field Change Request Form
Attachment 4	Accident/Incident Report
Attachment 5	Signatory Page
Attachment 6	Material Safety Data Sheets

LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
COC	Constituent(s) of Concern
CRZ	Contamination Reduction Zone
EZ	Exclusion Zone
FS	Field Supervisor
GFCI	Ground Fault Circuit Interrupter
HASP	Health and Safety Plan
HSM	Health and Safety Manager
LEL	Lower Explosive Limit
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
PO	Project Officer
PPE	Personal Protective Equipment
SESI	SESI Consulting Engineers
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
SZ	Support Zone
TLV	Threshold Limit Value
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

HEALTH AND SAFETY PLAN SUMMARY

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site Chemicals of Concern (COCs). COCs at the site include PAHs and metals in soil, tetrachloroethene (PCE) in groundwater and VOCs in soil vapor. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations.

The potential for inhalation of site COCs is moderate. The potential for dermal contact with soils containing site COCs during remedial operations is moderate.

The following table summarizes airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Parameter	Reading	Action
Dust	0 to .5 mg/m3	Normal operations
	0.5 to 1 mg/m3	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 1 mg/m3	Stop work, fully implement dust control plan
Oxygen	$\leq$ 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	$\geq$ 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to $\leq$ 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the Field Supervisor and Site Safety Officer. The following table presents a selection matrix to determine appropriate Personal Protective Equipment.

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Mass Excavation, Drilling, Soil Grouting)	Modified Level D/Level C
Earthwork/Grading	Level D/Level C
Additional Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

1.0 INTRODUCTION

1.1 Objective

The objective of this Health and Safety Plan (HASP) is to provide a mechanism for establishing safe working conditions during activities at the 1510 Broadway Dry Cleaner Site (BCP# _____) ("Site"), 1510 Broadway, Brooklyn, New York14 The safety organization, procedures, and protective equipment have been established based on an analysis of potential physical, chemical and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of injury, illness, or other hazardous incident.

The HASP was written to meet the requirements of all applicable Federal, State, and local health and safety regulations, including 29 CFR 1910.120. The HASP is based on current knowledge regarding the specific chemical and physical hazards that are known or anticipated at the Site. This HASP is a dynamic document, for which changes and/or revisions may be realized as changes in scope and/or site conditions are encountered. Should revised documents be produced, said revised documents will refer to the specific changes and why they were made.

1.2 Site and Facility Description

The Site comprises approximately 0.46-acres. The Site is located at 7 Saratoga Avenue and 1510-1524 Broadway in the Bedford-Stuyvesant / Brownsville section of Brooklyn, New York. The Site is located in a residential and commercial area. There are other suspect brownfield sites on adjacent properties. **Figure 1** presents a Site Location Map.

The Site, which is owned by the City of New York is located at 7 Saratoga Avenue & 1510-1524 Broadway, Brooklyn, NY (Tax Block 1489, Lots 6, 11, 12, 13, 14, 15, 16, 17, 18). An application to merge these nine lots into one lot with the address 1510 Broadway has been submitted to the City for processing.

The Site is bounded by Broadway, Hancock Street, Saratoga Avenue, and Jefferson Avenue. The elevated subway is located above Broadway (J and Z lines), and the MTA Halsey Street Station is adjacent to site. The surrounding area is predominantly residential and commercial in use, with some institutional uses. Currently, the Site is vacant and enclosed by construction fencing. There is one small garage building on the BCP Site, which will be demolished. **Figure 2** presents a Site Plan.

1.3 Policy Statement

The policy of SESI Consulting Engineers (SESI) is to provide a safe and healthful work environment. No aspect of operations is of greater importance than injury and illness prevention. A fundamental principle of safety management is that all injuries, illnesses, and incidents are preventable. SESI will take every reasonable step to eliminate or control hazards in order to minimize the possibility of injury, illness, or incident.

This HASP prescribes the procedures that must be followed by SESI personnel during activities at the site. Operational changes that could affect the health and safety of personnel, the community, or the environment will not be made without the prior approval of the Project Manager (PM) and the Health and Safety Manager (HSM). This

document will be reviewed periodically by the HSM to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification to this HASP. Such changes will be completed in the form of an addendum or a revision to the plan.

The provisions of this plan are mandatory for all SESI personnel and are advisory for all contractors, and subcontractors assigned to the project. ***Subcontractors will be responsible for preparing their own site-specific HASPs that meet the basic requirements outlined in this HASP.*** All visitors to SESI work areas at the site must abide by the requirements of this plan.

1.4 References

This HASP complies with applicable Occupational Safety and Health Administration (OSHA) regulations, United States Environmental Protection Agency (USEPA) regulations, and SESI health and safety policies and procedures. This plan follows the guidelines established in the following:

- *Standard Operating Safety Guides*, USEPA (Publication 9285.1-03, June 1992).
- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, NIOSH, OSHA, USCG, USEPA (86116, October 1985).
- *Title 29 of the Code of Federal Regulations* (CFR), Part 1910.
- *Title 29 of the Code of Federal Regulations* (CFR), Part 1926.
- *Pocket Guide to Chemical Hazards*, DHHS, PHS, CDC, NIOSH (2004).
- *Threshold Limit Values*, ACGIH (2005).
- *Guide to Occupational Exposure Values*, ACGIH (2005).
- *Quick Selection Guide to Chemical Protective Clothing*, Forsberg, K. and S.Z. Mansdorf, 2nd Ed. (1993).

1.5 Definitions

The following definitions (listed alphabetically) are applicable to this HASP:

- *Contamination Reduction Zone (CRZ)* - Area between the exclusion zone and support zone that provides a transition between contaminated and clean areas. Decontamination stations are located in this zone.
- *Exclusion Zone (EZ)* - Any portions of the site where hazardous substances are, or are reasonably suspected to be present, and pose an exposure hazard to on-site personnel.
- *Incident* - All losses, including first aid cases, injuries, illnesses, spills/leaks, equipment and property damage, motor vehicle accidents, regulatory violations, fires, and business interruptions.
- *On-Site Personnel* - All SESI and subcontractors involved with the project.
- *Project* - All on-site work performed under the scope of work.
- *Site* - The area described in Section 1.2, Site and Facility Description, where the work is to be performed by SESI personnel and subcontractors.
- *Support Zone (SZ)* - All areas of the site except the EZ and CRZ. The SZ surrounds the CRZ and EZ. Support equipment and break areas are located in this zone.
- *Subcontractor* - Includes contractor personnel hired by SESI.
- *Visitor* - All other personnel, except the on-site personnel.

- *Work Area* - The portion of the site where work activities are actively being performed. This area may change daily as work progresses and includes the SZ, CRZ, and EZ. If the work area is located in an area on the site that is not contaminated, or suspected of being contaminated, the entire work area may be a SZ.

2.0 PROJECT SCOPE OF WORK

This HASP contains information for the following tasks that SESI is anticipated to conduct at the Site. Should additional and/or different tasks be identified, amendments to this HASP will be required to address these changed items.

- Mobilization/Sample location stakeout;
- Soil Borings, vapor points and Monitoring Well Installation;
- Excavation of contaminated soil “hot spots”;
- Earthwork and grading;
- Chemical sampling of soil, soil vapor and groundwater; and
- Decontamination and demobilization/site restoration.

3.0 ROLES AND RESPONSIBILITIES

3.1 All Personnel

All SESI project personnel must adhere to the procedures outlined in this HASP during the performance of their work. Each person is responsible for completing tasks safely and reporting any unsafe acts or conditions to their supervisor. No person may work in a manner that conflicts with these procedures. After due warnings, the PM will dismiss from the site any SESI employee or subcontractor who violates safety procedures.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all SESI personnel will attend an initial hazard briefing prior to beginning work at the site.

The roles of key safety personnel and subcontractors are outlined in the following sections. Key project personnel and contacts are summarized in Table 1.

3.2 Key Safety Personnel

3.2.1 Project Officer (PO)

The PO is responsible for providing resources to assure project activities are completed in accordance with this HASP, and for meeting all regulatory and contractual requirements.

3.2.2 Project Manager (PM)

The PM is responsible for verifying that project activities are completed in accordance with the requirements of this HASP. The PM is responsible for confirming that the Field Supervisor (FS) has the equipment, materials, and qualified personnel to fully implement the safety requirements of this HASP, and/or that subcontractors assigned to this project meet the requirements established by SESI. It is also the responsibility of the PM to:

- Consult with the HSM on site health and safety issues;
- Verify that subcontractors meet health and safety requirements prior to commencing work;
- Verify that all incidents are thoroughly investigated;
- Approve, in writing, addenda or modifications of this HASP; and
- Suspend work or modify work practices, as necessary, for personal safety, protection of property, and regulatory compliance.

3.2.3 Health and Safety Manager (HSM)

The HSM or his designee, the health and safety manager (HSM), has overall responsibility for the technical health and safety aspects of the project, including review and approval of this HASP. Inquiries regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The HSM or his designee must approve changes or addenda to this HASP.

3.2.4 Site Safety Officer (SSO)

The SSO is responsible for field health and safety issues, including the execution of this HASP. Questions in the field regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The SSO will advise the PM on health and safety issues and will establish and coordinate the project air-monitoring program if one is deemed necessary (see Section 5.1, Air Monitoring). The SSO is the primary site contact on health and safety matters. It is the responsibility of the SSO to:

- Provide on-site technical assistance, if necessary;
- Participate in all accident/incident reports and ensure that they are reported to the HSM, client, and PM within 24 hours;
- Coordinate site and personal air monitoring as required, including equipment maintenance and calibration;
- Conduct site safety orientation training and daily safety meetings;
- Verify that project personnel have received the required physical examinations, medical certifications and training;
- Review site activities with respect to compliance with this HASP;
- Maintain required health and safety documents and records; and
- Assist the FS in instructing field personnel on project hazards and protective procedures.

3.2.5 Field Supervisor (FS)

The FS is responsible for implementing this HASP, including communicating requirements to on-site personnel and subcontractors. The FS will be responsible for informing the PM of changes in the work plan, procedures, or site conditions so that those changes may be addressed in this HASP. Other responsibilities are to:

- Consult with the SSO on site health and safety issues;
- Stop work, as necessary, for personal safety, protection of property, and regulatory compliance;
- Obtain a site map and determine and post routes to medical facilities and emergency telephone numbers;

- Notify local public emergency representatives (as appropriate) of the nature of the site operations, and post their telephone numbers (i.e., local fire department personnel who would respond for a confined space rescue);
- Observe on-site project personnel for signs of ill health effects;
- Investigate and report any incidents to the SSO;
- Verify that all on-site personnel have had applicable training;
- Verify that on-site personnel are informed of the physical, chemical, and biological hazards associated with the site activities, and the procedures and protective equipment necessary to control the hazards; and
- Issue/obtain any required work permits (hot work, confined space, etc.).

3.2.6 Field Personnel (FP)

All SESI field personnel are responsible for following the Health and Safety procedures specified in this HASP and work practices specified in applicable operation procedures. Some specific responsibilities include, but are not limited to:

- Reading and understanding the HASP;
- Reporting all accidents, incidents, injuries, or illnesses to the FS;
- Complying with the requests of the SSO;
- Immediately communicating newly identified hazards or noncompliance issues to the FS or SSO; and
- Stopping work in cases of immediate danger.

3.3 Subcontractors

Subcontractors and their personnel must understand and comply with applicable regulations and site requirements established in this HASP. Subcontractors will prepare their own site-specific HASP that must be consistent with the requirements of this HASP.

All subcontractor personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. All subcontractor personnel will attend an initial hazard briefing prior to beginning work at the site. Additionally, on-site subcontractor personnel must conduct daily site safety meetings.

Subcontractors must designate individuals to function as the PM, HSM, SSO, and FS. In some firms the HSM to be carried out by the PM. This is acceptable provided the PM has the required knowledge, training, and experience to properly address all hazards associated with the work, and to prepare, approve, and oversee the execution of the site-specific HASP. A subcontractor may designate the same person to perform the duties of both the SSO and the FS. However, depending on the level of complexity of a contractor's scope of work, it may be infeasible for one person to perform both functions satisfactorily.

3.4 Stop Work Authority

Every SESI employee and subcontractor is empowered, expected, and has the responsibility to stop the work of another co-worker if the working conditions or behaviors are considered unsafe.

3.5 All On-Site Personnel

All on-site SESI personnel (including SESI subcontractors) must read and acknowledge their understanding of their respective HASPs before commencing work and abide by the requirements of the plans. All on-site SESI personnel shall sign their HASP Acknowledgement Form following their review of their HASP.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all on-site personnel will attend an initial hazard briefing provided by the SSO prior to beginning work at the site and conduct daily safety meetings thereafter.

On-site personnel will immediately report the following to the FS or SSO:

- Personal injuries and illnesses no matter how minor;
- Unexpected or uncontrolled release of chemical substances;
- Symptoms of chemical exposure;
- Unsafe or hazardous situations;
- Unsafe or malfunctioning equipment;
- Changes in site conditions that may affect the health and safety of project personnel;
- Damage to equipment or property; and
- Situations or activities for which they are not properly trained.

3.6 Visitors

All SESI personnel and subcontractors visiting the Site must check in with the FS. Visitors will be cautioned to avoid skin contact with surfaces, soils, groundwater, or other materials that may impacted or be suspected to be impacted by constituents of concern (COCs).

Visitors requesting to observe work at the site must don appropriate personal protective equipment (PPE) prior to entry to the work area and must have the appropriate training and medical clearances to do so. If respiratory protective devices are necessary, visitors who wish to enter the work area must have been respirator-trained and fit tested for a respirator within the past 12 months.

Table 1 – Key Safety Personnel

SESI Personnel		
Role	**Name**	**Address/Telephone No.**
Project Officer (PO)	TBD	
Project Manager (PM)	TBD	
Senior Project Engineer (SPE)	TBD	
Health and Safety Manager (HSM)	TBD	
Site Safety Officer (SSO)	TBD	
Field Supervisor (FS)	TBD	
Field Personnel	TBD	
Field Personnel	TBD	
Subcontractors		
Company/Role	**Name**	**Address/Telephone No.**
TBD	TBD	TBD

4.0 PERSONAL PROTECTIVE EQUIPMENT

4.1 Levels of Protection

PPE is required to safeguard site personnel from various hazards. Varying levels of protection may be required depending on the levels of COCs and the degree of physical hazard. This section presents the various levels of protection and defines the conditions of use for each level. A summary of the levels is presented in Table 2 in this section.

4.1.1 Level D Protection

The minimum level of protection that will be required of project personnel at the site will be Level D, which will be worn when site conditions or air monitoring indicates no inhalation hazard exists. The following equipment will be used:

- Work clothing as prescribed by weather;
- Steel toe work boots, meeting American National Standards Institute (ANSI) Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Leather work gloves and/or nitrile surgical gloves;
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

4.1.2 Modified Level D Protection

Modified Level D will be used when airborne contaminants are not present at levels of concern, but site activities present an increased potential for skin contact with contaminated materials. Modified Level D consists of:

- Nitrile gloves worn over nitrile surgical gloves;
- Latex/polyvinyl chloride (PVC) overboots when contact with COC-impacted media is anticipated;
- Steel toe work boots, meeting ANSI Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Face shield in addition to safety glasses or goggles when projectiles or splash hazards exist (e.g. during Power Washing activities);
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used);
- Tyvek® suit (polyethylene coated Tyvek® suits for handling liquids) when body contact with COC-impacted media is anticipated; and
- PFD if working on or near the water.

4.1.3 Level C Protection

Level C protection will be required when the airborne concentration of COC reaches one-half of the OSHA Permissible Exposure Limit or ACGIH TLV. The following equipment will be used for Level C protection:

- Full-face, air-purifying respirator with combination organic vapor/HEPA cartridges;

- Polyethylene-coated Tyvek® suit, with ankles and cuffs taped to boots and gloves;
- Nitrile gloves worn over nitrile surgical gloves;
- Steel toe work boots, meeting ANSI Z41;
- Chemical-resistant boots with steel toes or latex/PVC overboots over steel toe boots;
- Hard hat, meeting ANSI Z89;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

4.2 Selection of PPE

Equipment for personal protection will be selected based on the potential for contact, site conditions, ambient air quality, and the judgment of supervising site personnel and health and safety professionals. The PPE used will be chosen to be effective against the COCs present on the site.

4.3 Site Respiratory Protection Program

Respiratory protection is an integral part of employee health and safety at the site due to potentially hazardous concentrations of airborne COCs. The site respiratory protection program will consist of the following (as a minimum):

- All on-site personnel who may use respiratory protection will have an assigned respirator.
- All on-site personnel who may use respiratory protection will have been fit tested and trained in the use of a full-face air-purifying respirator within the past 12 months. Documentation of the fit test must be provided to the SSO prior to commencement of work.
- All on-site personnel who may use respiratory protection must within the past year have been medically certified as being capable of wearing a respirator. Documentation of the medical certification must be provided to the SSO, prior to commencement of site work.
- Only cleaned, maintained, NIOSH-approved respirators will be used.
- If respirators are used, the respirator cartridge is to be properly disposed of at the end of each work shift, or when load-up or breakthrough occurs.
- Contact lenses are not to be worn when a respirator is worn.
- All on-site personnel who may use respiratory protection must be clean-shaven. Mustaches and sideburns are permitted, but they must not touch the sealing surface of the respirator.
- Respirators will be inspected, and a negative pressure test performed prior to each use.
- After each use, the respirator will be wiped with a disinfectant, cleansing wipe. When used, the respirator will be thoroughly cleaned at the end of the work shift. The respirator will be stored in a clean plastic bag, away from direct sunlight in a clean, dry location, in a manner that will not distort the face piece.

4.4 Using PPE

Depending upon the level of protection selected, specific donning and doffing procedures may be required. The procedures presented in this section are mandatory if

Modified Level D or Level C PPE is used. All personnel entering the EZ must put on the required PPE in accordance with the requirements of this HASP. When leaving the EZ, PPE will be removed in accordance with the procedures listed, to minimize the spread of COCs.

4.4.1 Donning Procedures

These procedures are mandatory only if Modified Level D or Level C PPE is used on the site:

- Remove bulky outerwear. Remove street clothes and store in clean location;
- Put on work clothes or coveralls;
- Put on the required chemical protective coveralls;
- Put on the required chemical protective boots or boot covers;
- Tape the legs of the coveralls to the boots with duct tape;
- Put on the required chemical protective gloves;
- Tape the wrists of the protective coveralls to the gloves;
- Don the required respirator and perform appropriate fit check (Level C);
- Put hood or head covering over head and respirator straps and tape hood to facepiece (Level C); and
- Don remaining PPE, such as safety glasses or goggles and hard hat.

When these procedures are instituted, one person must remain outside the work area to ensure that each person entering has the proper protective equipment.

4.4.2 Doffing Procedures

The following procedures are only mandatory if Modified Level D or Level C PPE is required for the site. Whenever a person leaves the work area, the following decontamination sequence will be followed:

- Upon entering the CRZ, rinse contaminated materials from the boots or remove contaminated boot covers;
- Clean reusable protective equipment;
- Remove protective garments, equipment, and respirator (Level C). All disposable clothing should be placed in plastic bags, which are labeled with contaminated waste labels;
- Wash hands, face, and neck (or shower if necessary);
- Proceed to clean area and dress in clean clothing; and
- Clean and disinfect respirator for next use.

All disposable equipment, garments, and PPE must be bagged in plastic bags, labeled for disposal. See Section 7, Decontamination, for detailed information on decontamination stations.

4.5 Selection Matrix

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the FS and SSO of the potential for skin contact with COCs. The PPE selection matrix is presented in Table 2. This matrix is based on information available at the time this plan was written. The Airborne Contaminant Action

Levels in Table 3, Airborne Contaminant Action Levels, should be used to verify that the PPE prescribed in these matrices is appropriate.

Table 2 – PPE Selection Matrix

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Excavation, Drilling)	Modified Level D/Level C
Earthwork/Grading	Level D/Level C
Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

5.0 AIR AND NOISE MONITORING

5.1 Air Monitoring

Air monitoring, sampling, and testing will be conducted to determine employee exposure to airborne constituents. The monitoring results will dictate work procedures and the selection of PPE. The SESI SSO will be responsible for defining appropriate air monitoring procedures and for utilizing the air monitoring results to determine appropriate procedures and PPE for project personnel. Air monitoring results should be recorded in field notebooks or on an air monitoring log (see Attachment 1 for a copy of the Air Monitoring Log). Any deviations from the procedures listed here should be documented and explained in the Air Monitoring Log.

The monitoring devices to be used are a PDR1000 particulate monitor (or equivalent) and a Rae Systems MultiRAE detector (PID with a 11.7 eV lamp/oxygen/LEL/hydrogen sulfide sensors). Colorimetric detector tubes may be utilized to estimate airborne concentrations of benzene and should be onsite during any activities that may result in elevated PID readings including drilling, excavating, and groundwater sampling.

Air monitoring will be conducted continuously with the LEL/Oxygen meter during drilling in areas where flammable vapors or gases are suspect. All work activity must stop where tests indicate the concentration of flammable vapors exceeds 10% of the LEL at a location with a potential ignition source. Such an area must be ventilated to reduce the concentration to an acceptable level.

5.2 Noise Monitoring

Noise monitoring may be conducted as required. Hearing protection is mandatory for all employees in noise hazardous areas, such as around heavy equipment. As a general rule, sound levels that cause speech interference at normal conversation distance should require the use of hearing protection.

5.3 Monitoring Equipment Maintenance and Calibration

All direct-reading instrumentation calibrations should be conducted under the approximate environmental conditions the instrument will be used. Instruments must be calibrated before and after use, noting the reading(s) and any adjustments that are necessary. All air monitoring equipment calibrations, including the standard used for calibration, must be documented on a calibration log or in the field notebook. All completed health and safety documentation/forms must be reviewed by the SSO and

maintained by the FS.

All air monitoring equipment will be maintained and calibrated in accordance with the specific manufacturer's procedures. Preventive maintenance and repairs will be conducted in accordance with the respective manufacturer's procedures. When applicable, only manufacturer-trained and/or authorized personnel will be allowed to perform instrument repairs or preventive maintenance.

If an instrument is found to be inoperative or suspected of giving erroneous readings, the SSO must be responsible for immediately removing the instrument from service and obtaining a replacement unit. If the instrument is essential for safe operation during a specific activity, that activity must cease until an appropriate replacement unit is obtained. The SSO will be responsible for ensuring a replacement unit is obtained and/or repairs are initiated on the defective equipment.

5.4 Action Levels

Table 3 presents airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Table 3 – Airborne Contaminant Action Levels

Parameter	Reading	Action
Total Hydrocarbons	0 ppm to ≤ 1 ppm	Normal operations; continue hourly breathing zone monitoring
	> 1 ppm to 5 ppm	Increase monitoring frequency to every 15 minutes and use benzene detector tube to screen for the presence of benzene
	≥ 5 ppm to ≤ 50 ppm	Upgrade to Level C PPE; continue screening for benzene
	> 50 ppm	Stop work; investigate cause of reading
Benzene	≥ 1 ppm to 5 ppm	Upgrade to Level C PPE
	> 5 ppm	Stop work; investigate cause of reading
Dust	0 to .5 mg/m3	Normal operations
	0.5 to 1 mg/m3	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 1 mg/m3	Stop work, fully implement dust control plan
Oxygen	≤ 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	≥ 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to ≤ 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Hydrogen Sulfide	0 ppm to ≤ 5 ppm	Normal operations
	> 5 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Flammable Vapors (LEL)	< 10% LEL	Normal operations
	≥ 10% LEL	Stop work, ventilate area, investigate source of vapors

6.0 WORK ZONES AND DECONTAMINATION

6.1 Work Zones

6.1.1 Authorization to Enter

Only personnel with the appropriate training and medical certifications (if respirators are required) will be allowed to work at the project site. The FS will maintain a list of authorized persons; only personnel on the authorized persons list will be allowed to enter the site work areas.

6.1.2 Site Orientation and Hazard Briefing

No person will be allowed in the work area during site operations without first being given a site orientation and hazard briefing. This orientation will be presented by the FS or SSO and will consist of a review of this HASP. This review must cover the chemical, physical, and biological hazards, protective equipment, safe work procedures, and emergency procedures for the project. Following this initial meeting, daily safety meetings will be held each day before work begins.

All people entering the site work areas, including visitors, must document their attendance at this briefing, as well as the daily safety meetings on the forms included with this plan.

6.1.3 Certification Documents

A training and medical file may be established for the project and kept on site during all site operations. Specialty training, such as first aid/cardiopulmonary resuscitation (CPR) certificates, as well as current medical clearances for all project field personnel required to wear respirators, will be maintained within that file. All project personnel must provide their training and medical documentation to the SSO prior to starting work.

6.1.4 Entry Log

A log-in/log-out sheet will be maintained at the site by the FS. Personnel must sign in and out on a log sheet as they enter and leave the work area, and the FS may document entry and exit in the field notebook.

6.1.5 Entry Requirements

In addition to the authorization, hazard briefing, and certification requirements listed above, no person will be allowed in any SESI work area unless they are wearing the minimum PPE as described in Section 4.0.

6.1.6 Emergency Entry and Exit

People who must enter the work area on an emergency basis will be briefed of the hazards by the FS or SSO. All activities will cease in the event of an emergency. People exiting the work area because of an emergency will gather in a designated safe area for a head count. The FS is responsible for ensuring that all people who entered the work area have exited in the event of an emergency.

6.1.7 Contamination Control Zones

Contamination control zones are maintained to prevent the spread of contamination and to prevent unauthorized people from entering hazardous areas.

6.1.8 Exclusion Zone (EZ)

An EZ may consist of a specific work area or may be the entire area of potential contamination. All employees entering an EZ must use the required PPE and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or a posted site diagram will identify the location of each EZ.

6.1.9 Contamination Reduction Zone

The CRZ or transition area will be established, if necessary, to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross-contamination. Tools, equipment, and machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on site adjacent to the EZ. Personal protective outer garments and respiratory protection will be removed in the CRZ and prepared for cleaning or disposal. This zone is the only appropriate corridor between the EZ and the support zone (SZ) discussed below.

6.1.10 Support Zone (SZ)

The SZ is a clean area outside the CRZ located to prevent employee exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking may be permitted in the SZ, subject to site requirements.

6.1.11 Posting

Work areas will be prominently marked and delineated using cones, caution tape, or a posted site diagram.

6.1.12 Site Inspections

The FS will conduct a daily inspection of site activities, equipment, and procedures to verify that the required elements are in place.

6.2 Decontamination

6.2.1 Personnel Decontamination

All personnel wearing Modified Level D or Level C protective equipment in the EZ must undergo personal decontamination prior to entering the SZ. The personnel decontamination area will consist of the following stations at a minimum:

- *Station 1*: Personnel leaving the contaminated zone will remove the gross contamination from their outer clothing and boots.
- *Station 2*: Personnel will remove their outer garment and gloves and dispose of it in properly labeled containers. Personnel will then decontaminate their hard hats, and boots with an aqueous solution of detergent or other appropriate cleaning solution. These items are then hand carried to the next station.

- *Station 3*: Personnel will thoroughly wash their hands and face before leaving the CRZ. Respirators will be sanitized and then placed in a clean plastic bag.

6.2.2 Equipment Decontamination

All vehicles that have entered the EZ will be decontaminated at the decontamination pad prior to leaving the zone. If the level of vehicle contamination is low, decontamination may be limited to rinsing of tires and wheel wells with water. If the vehicle is significantly contaminated, steam cleaning or pressure washing of vehicles and equipment may be required.

6.2.3 Personal Protective Equipment Decontamination

Where and whenever possible, single-use, external protective clothing must be used for work within the EZ or CRZ. This protective clothing must be disposed of in properly labeled containers. Reusable protective clothing will be rinsed at the site with detergent and water. The rinsate will be collected for disposal.

When removed from the CRZ, the respirator will be thoroughly cleaned with soap and water. The respirator face piece, straps, valves, and covers must be thoroughly cleaned at the end of each work shift, and ready for use prior to the next shift. Respirator parts may be disinfected with a solution of bleach and water (mixed at 2% bleach by volume), or by using a spray disinfectant.

7.0 TRAINING AND MEDICAL SURVEILLANCE

7.1 Training

7.1.1 General

All on-site project personnel who work in areas where they may be exposed to site contaminants must be trained as required by OSHA Regulation 29 CFR 1910.120 (HAZWOPER). Field employees also must receive a minimum of three days of actual field experience under the direct supervision of a trained, experienced supervisor. Personnel who completed their initial training more than 12 months prior to the start of the project must have completed an eight-hour refresher course within the past 12 months. The FS must have completed an additional eight hours of supervisory training and must have a current first-aid/CPR certificate (See Attachment 2).

7.1.2 Basic 40-Hour Course

The following is a list of the topics typically covered in a 40-hour HAZWOPER training course:

- General safety procedures;
- Physical hazards (fall protection, noise, heat stress, cold stress);
- Names and job descriptions of key personnel responsible for site health and safety;
- Safety, health, and other hazards typically present at hazardous waste sites;
- Use, application, and limitations of PPE;
- Work practices by which employees can minimize risks from hazards;
- Safe use of engineering controls and equipment on site;

- Medical surveillance requirements;
- Recognition of symptoms and signs which might indicate overexposure to hazards;
- Worker right-to-know (Hazard Communication OSHA 1910.1200);
- Routes of exposure to contaminants;
- Engineering controls and safe work practices;
- Components of a health and safety program and a site-specific HASP;
- Decontamination practices for personnel and equipment;
- Confined-space entry procedures; and
- General emergency response procedures.

7.1.3 Supervisor Course

Management and supervisors must receive an additional eight hours of training, which typically includes:

- General site safety and health procedures;
- PPE programs; and
- Air monitoring techniques.

7.1.4 Site-Specific Training

Site-specific training will be accomplished by on-site personnel reading this HASP, and through a thorough site briefing by the PM, FS, or SSO on the contents of this HASP before work begins. The review must include a discussion of the chemical, physical, and biological hazards; the protective equipment and safety procedures; and emergency procedures.

7.1.5 Daily Safety Meetings

Daily safety meetings will be held to cover the work to be accomplished, the hazards anticipated, the PPE and procedures required to minimize site hazards, and emergency procedures. The FS or SSO should present these meetings prior to beginning the day's fieldwork. No work will be performed in an EZ before a daily safety meeting has been held. An additional safety meeting must also be held prior to new tasks, or if new hazards are encountered. The daily safety meetings will be logged in the field notebook.

7.1.6 First Aid and CPR

At least one employee current in first aid/CPR will be assigned to the work crew and will be on the site during operations. Site records will document the presence of this individual. Refresher training in first aid (triennially) and CPR (annually) is required to keep the certificate current. These individuals must also receive training regarding the precautions and protective equipment necessary to protect against exposure to blood-borne pathogens.

7.2 Medical Surveillance

7.2.1 Medical Examination

All personnel who are potentially exposed to site contaminants must participate in a medical surveillance program as defined by OSHA at 29 CFR 1910.120 (f).

7.2.2 Pre-placement Medical Examination

All potentially exposed personnel must have completed a comprehensive medical examination prior to assignment, and periodically thereafter as defined by applicable regulations. The pre-placement and periodic medical examinations typically include the following elements:

- Medical and occupational history questionnaire;
- Physical examination;
- Complete blood count, with differential;
- Liver enzyme profile;
- Chest X-ray, at a frequency determined by the physician;
- Pulmonary function test;
- Audiogram;
- Electrocardiogram for persons older than 45 years of age, or if indicated during the physical examination;
- Drug and alcohol screening, as required by job assignment;
- Visual acuity; and
- Follow-up examinations, at the discretion of the examining physician or the corporate medical director.

The examining physician provides the employee with a letter summarizing his findings and recommendations, confirming the worker's fitness for work and ability to wear a respirator. Documentation of medical clearance will be available for each employee during all project site work.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations must meet the requirements of 29 CFR 1910.120 and 29 CFR 1910.134. Subcontractors will supply copies of the medical examination certificate for each on-site employee.

7.2.3 Other Medical Examinations

In addition to pre-employment, annual, and exit physicals, personnel may be examined:

- At employee request after known or suspected exposure to toxic or hazardous materials; and
- At the discretion of the SSO, HSM, or occupational physician in anticipation of, or after known or suspected exposure to toxic or hazardous materials.

7.2.4 Periodic Exam

Following the placement examination, all employees must undergo a periodic examination, similar in scope to the placement examination. For employees potentially exposed over 30 days per year, the frequency of periodic examinations will be annual. For employees potentially exposed less than 30 days per year, the frequency for periodic examinations will be 24 months.

7.2.5 Medical Restriction

When the examining physician identifies a need to restrict work activity, the employee's supervisor must communicate the restriction to the employee and the SSO. The terms of the restriction will be discussed with the employee and the supervisor.

8.0 GENERAL SAFETY PRACTICES

8.1 General Safety Rules

General safety rules for site activities include, but are not limited to, the following:

- At least one copy of this HASP must be in a location at the site that is readily available to personnel, and all project personnel shall review the plan prior to starting work.
- Consume or use food, beverages, chewing gum, and tobacco products only in the SZ or other designated area outside the EZ and CRZ. Cosmetics shall not be applied in the EZ or CRZ.
- Wash hands before eating, drinking, smoking, or using toilet facilities.
- Wear all PPE as required and stop work and replace damaged PPE immediately.
- Secure disposable coveralls, boots, and gloves at the wrists and legs and ensure closure of the suit around the neck.
- Upon skin contact with materials that may be impacted by COCs, remove contaminated clothing and wash the affected area immediately. Contaminated clothing must be changed. Any skin contact with materials potentially impacted by COCs must be reported to the FS or SSO immediately. If needed, medical attention should be sought.
- Practice contamination avoidance. Avoid contact with surfaces either suspected or known to be impacted by COCs, such as standing water, mud, or discolored soil. Equipment must be stored on elevated or protected surfaces to reduce the potential for incidental contamination.
- Remove PPE as required in the CRZ to limit the spread of COC-containing materials.
- At the end of each shift or as required, dispose of all single-use coveralls, soiled gloves, and respirator cartridges in designated receptacles designated for this purpose.
- Removing soil containing site COCs from protective clothing or equipment with compressed air, shaking, or any other means that disperses contaminants into the air is prohibited.
- Inspect all non-disposable PPE for contamination in the CRZ. Any PPE found to be contaminated must be decontaminated or disposed of appropriately.
- Recognize emergency signals used for evacuation, injury, fire, etc.
- Report all injuries, illnesses, and unsafe conditions or work practices to the FS or SSO.
- Use the “buddy system” during all operations requiring Level C PPE, and when appropriate, during Modified Level D operations.
- Obey all warning signs, tags, and barriers. Do not remove any warnings unless authorized to do so.
- Use, adjust, alter, and repair equipment only if trained and authorized to do so, and in accordance with the manufacturer’s directions.
- Personnel are to perform only tasks for which they have been properly trained and will advise their supervisor if they have been assigned a task for which they are not trained.

- The presence or consumption of alcoholic beverages or illicit drugs during the workday, including breaks, is strictly prohibited. Notify your supervisor if you must take prescription or over-the-counter drugs that indicate they may cause drowsiness or, that you should not operate heavy equipment.
- Remain upwind during site activities whenever possible.

8.2 Buddy System

On-site personnel must use the buddy system as required by operations. Use of the "buddy system" is required during all operations requiring Level C to Level A PPE, and when appropriate, during Level D operations. Crewmembers must observe each other for signs of chemical exposure, and heat or cold stress. Indications of adverse effects include, but are not limited to:

- Changes in complexion and skin coloration;
- Changes in coordination;
- Changes in demeanor;
- Excessive salivation and pupillary response; and
- Changes in speech pattern.

Crewmembers must also be aware of the potential exposure to possible safety hazards, unsafe acts, or non-compliance with safety procedures.

Field personnel must inform their partners or fellow crewmembers of non-visible effects of exposure to toxic materials that they may be experiencing. The symptoms of such exposure may include, but are not limited to:

- Headaches;
- Dizziness;
- Nausea;
- Blurred vision;
- Cramps; and
- Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

8.3 Heat Stress

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, etc., as well as the physical and conditioning characteristics of the individual. Since heat stress is one of the most common illnesses associated with heavy outdoor work conducted with direct solar load and, in particular, because wearing PPE can increase the risk of developing heat stress, workers must be capable of recognizing the signs and symptoms of heat-related illnesses. Personnel must be aware of the types and causes of heat-related illnesses and be able to recognize the signs and symptoms of these illnesses in both themselves and their co-workers.

Heat rashes are one of the most common problems in hot work environments. Commonly known as prickly heat, a heat rash is manifested as red papules and usually

appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

Heat cramps are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused both by too much or too little salt.

Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution (plus or minus 0.3% NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Drinking commercially available carbohydrate electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

Heat exhaustion occurs from increased stress on various body organs due to inadequate blood circulation, cardiovascular insufficiency, or dehydration. Signs and symptoms include pale, cool, moist skin; heavy sweating; dizziness; nausea; headache, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment.

Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, which is a medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment, be given fluid replacement, and be encouraged to get adequate rest.

Heat stroke is the most serious form of heat stress. Heat stroke occurs when the body's system of temperature regulation fails and the body's temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional

methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

Regardless of the worker's protestations, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat stroke or exhaustion, that person may be predisposed to additional heat injuries.

8.4 Heat Stress Safety Precautions

Heat stress monitoring and work rest cycle implementation should commence when the ambient adjusted temperature exceeds 72°F. A minimum work rest regimen and procedures for calculating ambient adjusted temperature are described in Table 4.

Table 4 – Work/Rest Schedule

Adjusted Temperature[b]	Work/Rest Regimen Normal Work Ensemble[c]	Work/Rest Regimen Impermeable Ensemble
90ºF (32.2ºC) or above	After each 45 minutes of work	After each 15 minutes of work
87.5º - 90ºF (30.8º-32.2ºC)	After each 60 minutes of work	After each 30 minutes of work
82.5º - 87.5ºF (28.1º - 30.8ºC)	After each 90 minutes of work	After each 60 minutes of work
77.5º - 82.5ºF (25.3º - 28.1ºC)	After each 120 minutes of work	After each 90 minutes of work
72.5º - 77.5ºF (30.8º - 32.2ºC)	After each 150 minutes of work	After each 120 minutes of work

a. For work levels of 250 kilocalories/hour (Light-Moderate Type of Work)
b. Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
c. A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.
d. The information presented above was generated using the information provided in the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) Handbook.

In order to determine if the work rest cycles are adequate for the personnel and specific site conditions, additional monitoring of individual heart rates will be conducted during the rest cycle. To check the heart rate, count the radial pulse for 30 seconds at the beginning of the rest period. If the heart rate exceeds 110 beats per minute, shorten the next work period by one third and maintain the same rest period.

Additionally, one or more of the following control measures can be used to help control heat stress and are mandatory if any site worker has a heart rate (measure immediately prior to rest period) exceeding 115 beats per minute:

- Site workers will be encouraged to drink plenty of water and electrolyte replacement fluids throughout the day.
- On-site drinking water will be kept cool (50 to 60°F).
- A work regimen that will provide adequate rest periods for cooling down will be established, as required.
- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Cooling devices, such as vortex tubes or cooling vests, should be used when personnel must wear impermeable clothing in conditions of extreme heat.
- Employees should be instructed to monitor themselves and co-workers for signs of heat stress and to take additional breaks as necessary.
- A shaded rest area must be provided. All breaks should take place in the shaded rest area.
- Employees must not be assigned to other tasks during breaks.
- Employees must remove impermeable garments during rest periods. This includes white Tyvek-type garments.

All employees must be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress disorders.

8.5 Cold Stress

Cold stress normally occurs in temperatures at or below freezing, or under certain circumstances, in temperatures of 40°F. Extreme cold for a short time may cause severe injury to exposed body surfaces or result in profound generalized cooling, causing death. Areas of the body that have high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. Two factors influence the development of a cold weather injury: ambient temperature and the velocity of the wind. For instance, 10°F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at 18°F. An equivalent chill temperature chart relating the actual dry bulb temperature and wind velocity is presented in Table 5.

Table 5 – Wind Chill Temperature Chart

Estimated Wind Speed (in mph)	**Actual Temperature Reading (ºF)**											
	50	**40**	**30**	**20**	**10**	**0**	**-10**	**-20**	**-30**	**-40**	**-50**	**-60**
	Equivalent Chill Temperature (ºF)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind speeds greater than 40 mph have little additional effect.)	**LITTLE DANGER Maximum danger of false sense of security.**				**INCREASING DANGER Danger from freezing of exposed flesh within one minute.**			**GREAT DANGER Flesh may freeze within 30 seconds.**				
	Trench foot and immersion foot may occur at any point on this chart.											

[This chart was developed by the U.S. Army Research Institute of Environmental Medicine, Natick, MA (Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents)].

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

- *Frost Nip or Incipient Frostbite* - characterized by sudden blanching or whitening of skin.
- *Superficial Frostbite* - skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.
- *Deep Frostbite* - tissues are cold, pale, and solid; extremely serious injury.

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperature. It can be fatal. Its symptoms are usually exhibited in five stages: 1) shivering; 2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body to less than 95°F; 3) unconsciousness, glassy stare, slow pulse, and slow respiratory rate; 4) freezing of the extremities; and 5) death. Trauma sustained in freezing or sub-zero conditions requires special attention because an injured worker is predisposed to secondary cold injury. Special provisions must be made to prevent hypothermia and secondary freezing of damaged tissues in addition to providing for first aid treatment. To avoid cold stress, site personnel must wear protective clothing appropriate for the level of cold and physical activity. In addition to protective clothing, preventive safe work practices, additional training, and warming regimens may be utilized to prevent cold stress.

8.6 Safety Precautions for Cold Stress Prevention

For air temperature of 0°F or less, mittens should be used to protect the hands. For exposed skin, continuous exposure should not be permitted when air speed and temperature results in a wind chill temperature of -25°F.

At air temperatures of 36°F or less, field personnel who become immersed in water or whose clothing becomes wet must be immediately provided with a change of clothing and be treated for hypothermia.

If work is done at normal temperature or in a hot environment before entering the cold, the field personnel must ensure that their clothing is not wet as a consequence of sweating. Wet field personnel must change into dry clothes prior to entering the cold area.

If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work must be modified or suspended until adequate clothing is made available or until weather conditions improve.

Field personnel handling evaporative liquid (e.g., gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F must take special precaution to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling.

8.7 Safe Work Practices

Direct contact between bare skin and cold surfaces (< 20°F) should be avoided. Metal tool handles and/or equipment controls should be covered by thermal insulating material.

For work performed in a wind chill temperature at or below 10°F, workers should be under constant protective observation (buddy system). The work rate should be established to prevent heavy sweating that will result in wet clothing. For heavy work, rest periods must be taken in heated shelters and workers should be provided with an opportunity to change into dry clothing if needed.

Field personnel should be provided the opportunity to become accustomed to cold-weather working conditions and required protective clothing. Work should be arranged in such a way that sitting or standing still for long periods is minimized.

During the warming regimen (rest period), field personnel should be encouraged to remove outer clothing to permit sweat evaporation or to change into dry work clothing. Dehydration, or loss of body fluids, occurs insidiously in the cold environment and may increase susceptibility to cold injury due to a significant change in blood flow to the extremities. Fluid replacement with warm, sweet drinks and soups is recommended. The intake of coffee should be limited because of diuretic and circulatory effects.

8.8 Biological Hazards

Biological hazards may include poison ivy, snakes, thorny bushes and trees, ticks, mosquitoes, spiders, and other pests.

8.8.1 Tick Borne Diseases

Lyme Disease - The disease commonly occurs in summer and is transmitted by the bite of infected ticks. “Hot spots” in the United States include New York, New Jersey, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

Erlichiosis - The disease also commonly occurs in summer and is transmitted by the bite of infected ticks. “Hot spots” in the United States include New York, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

These diseases are transmitted primarily by the deer tick, which is smaller and redder than the common wood tick. The disease may be transmitted by immature ticks, which are small and hard to see. The tick may be as small as a period on this page.

Symptoms of Lyme disease include a rash or a peculiar red spot, like a bull’s eye, which expands outward in a circular manner. The victim may have headache, weakness, fever, a stiff neck, and swelling and pain in the joints, and eventually, arthritis. Symptoms of erlichiosis include muscle and joint aches, flu-like symptoms, but there is typically no skin rash.

Rocky Mountain Spotted Fever (RMSF) - This disease is transmitted via the bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (Rickettsia rickettsii) becomes reactivated and can infect humans. The primary symptom of RMSF is the sudden appearance of a moderate-to-high fever. The fever may persist for two to three weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated, but if identified and treated promptly, death is uncommon.

Control - Tick repellant containing diethyltoluamide (DEET) should be used when working in tick-infested areas, and pant legs should be tucked into boots. In addition, workers should search the entire body every three or four hours for attached ticks. Ticks should be removed promptly and carefully without crushing, since crushing can squeeze the disease-causing organism into the skin. A gentle and steady pulling action should be used to avoid leaving the head or mouth parts in the skin. Hands should be protected with surgical gloves when removing ticks.

8.8.2 Poisonous Plants

Poisonous plants may be present in the work area. Personnel should be alerted to its presence and instructed on methods to prevent exposure.

Control - The main control is to avoid contact with the plant, cover arms and hands, and frequently wash potentially exposed skin. Particular attention must be given to avoiding skin contact with objects or protective clothing that have touched the plants. Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance. If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

8.8.3 Snakes

The possibility of encountering snakes exists, specifically for personnel working in wooded/vegetated areas. Snake venoms are complex and include proteins, some of which have enzymatic activity. The effects produced by venoms include neurotoxic effects with sensory, motor, cardiac, and respiratory difficulties; cytotoxic effects on red blood cells, blood vessels, heart muscle, kidneys, and lungs; defects in coagulation; and effects from local release of substances by enzymatic actions. Other noticeable effects of venomous snakebites include swelling, edema, and pain around the bite, and the development of ecchymosis (the escape of blood into tissues from ruptured blood vessels).

Control - To minimize the threat of snakebites, all personnel walking through vegetated areas must be aware of the potential for encountering snakes, and the need to avoid actions potentiating encounters, such as turning over logs, etc. If a snakebite occurs, an attempt should be made to safely identify the snake via size and markings. The victim must be transported to the nearest hospital within 30 minutes; first aid consists of applying a constriction band and washing the area around the wound to remove any unabsorbed venom.

8.8.4 Spiders

Personnel may encounter spiders during work activities.

Two spiders are of concern, the black widow and the brown recluse. Both prefer dark sheltered areas such as basements, equipment sheds and enclosures, and around woodpiles or other scattered debris. The black widow is shiny black, approximately one inch long, and found throughout the United States. There is a distinctive red hourglass marking on the underside of the black widows body. The bite of a black widow is seldom fatal to healthy adults, but effects include respiratory distress, nausea, vomiting, and muscle spasms. The brown recluse is smaller than the black widow and gets its name from its brown coloring and behavior. The brown recluse is more prevalent in the

southern United States. The brown recluse has a distinctive violin shape on the top of its body. The bite of the brown recluse is painful and the bite site ulcerates and takes many weeks to heal completely.

Control - To minimize the threat of spider bites, all personnel walking through vegetated areas must be aware of the potential for encountering these arachnids. Personnel need to avoid actions that may result in encounters, such as turning over logs, and placing hands in dark places such as behind equipment or in corners of equipment sheds or enclosures. If a spider bite occurs, the victim must be transported to the nearest hospital as soon as possible; first aid consists of applying ice packs and washing the area around the wound to remove any unabsorbed venom.

8.9 Noise

Exposure to noise over the OSHA action level can cause temporary impairment of hearing; prolonged and repeated exposure can cause permanent damage to hearing. The risk and severity of hearing loss increases with the intensity and duration of exposure to noise. In addition to damaging hearing, noise can impair voice communication, thereby increasing the risk of accidents on site.

Control - All personnel must wear hearing protection, with a Noise Reduction Rating (NRR) of at least 20, when noise levels exceed 85 dBA. When it is difficult to hear a co-worker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to noise must also receive baseline and annual audiograms and training as to the causes and prevention of hearing loss. Noise monitoring is discussed in Section 5.2, Noise Monitoring.

Whenever possible, equipment that does not generate excessive noise levels will be selected for this project. If the use of noisy equipment is unavoidable, barriers or increased distance will be used to minimize worker exposure to noise, if feasible.

8.10 Spill Control

All personnel must take every precaution to minimize the potential for spills during site operations. All on-site personnel shall immediately report any discharge, no matter how small, to the FS.

Spill control equipment and materials will be located on the site at locations that present the potential for discharge. All sorbent materials used for the cleanup of spills will be containerized and labeled appropriately. In the event of a spill, the FS will follow the provisions in Section 10.0, Emergency Procedures, to contain and control released materials and to prevent their spread to off-site areas.

8.11 Sanitation

Site sanitation will be maintained according to OSHA requirements.

8.11.1 Break Area

Breaks must be taken in the SZ, away from the active work area after site personnel go through decontamination procedures. There will be no smoking, eating, drinking, or chewing gum or tobacco in any area other than the SZ.

8.11.2 Potable Water

The following rules apply to all field operations:

- An adequate supply of potable water will be provided at each project site. Potable water must be kept away from hazardous materials or media, and contaminated clothing or equipment.
- Portable containers used to dispense drinking water must be capable of being tightly closed and must be equipped with a tap dispenser. Water must not be consumed directly from the container (drinking from the tap is prohibited) nor may it be removed from the container by dipping.
- Containers used for drinking water must be clearly marked and shall not be used for any other purpose.
- Disposable drinking cups must be provided. A sanitary container for dispensing cups and a receptacle for disposing of used cups is required.

8.11.3 Sanitary Facilities

Access to facilities for washing before eating, drinking, or smoking, or alternate methods such as waterless hand-cleaner and paper towels will be provided.

8.11.4 Lavatory

If permanent toilet facilities are not available, an appropriate number of portable chemical toilets will be provided. This requirement does not apply to mobile crews or to normally unattended site locations so long as employees at these locations have transportation immediately available to nearby toilet facilities.

8.12 Emergency Equipment

Adequate emergency equipment for the activities being conducted on site and as required by applicable sections of 29 CFR 1910 and 29 CFR 1926 will be on site prior to the commencement of project activities. Personnel will be provided with access to emergency equipment, including, but not limited to, the following:

- Fire extinguishers of adequate size, class, number, and location as required by applicable sections of 29 CFR 1910 and 1926;
- Industrial first aid kits of adequate size for the number of personnel on site; and
- Emergency eyewash and/or shower if required by operations being conducted on site.

8.13 Lockout/Tagout Procedures

Only fully qualified and trained personnel will perform maintenance procedures. Before maintenance begins, lockout/tagout procedures per OSHA 29 CFR 1910.147 will be followed.

Lockout is the placement of a device that uses a positive means, such as lock, to hold an energy or material-isolating device such that the equipment cannot be operated until the lockout device is removed. If a device cannot be locked out, a tagout system shall be used. Tagout is the placement of a warning tag on an energy or material isolating device indicating that the equipment controls may not be operated until the personnel who attached the tag remove the tag.

8.14 Electrical Safety

Electricity may pose a particular hazard to site workers due to the use of portable electrical equipment. If wiring or other electrical work is needed, a qualified electrician must perform it.

General electrical safety requirements include:

- All electrical wiring and equipment must be a type listed by Underwriters Laboratories (UL), Factory Mutual Engineering Corporation (FM), or other recognized testing or listing agency.
- All installations must comply with the National Electrical Safety Code (NESC), the National Electrical Code (NEC), or USCG regulations.
- Portable and semi-portable tools and equipment must be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
- Tools protected by an approved system of double insulation, or its equivalent, need not be grounded. Double insulated tools must be distinctly marked and listed by UL or FM.
- Live parts of wiring or equipment must be guarded to prevent persons or objects from touching them.
- Electric wire or flexible cord passing through work areas must be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, projections, or pinching.
- All circuits must be protected from overload.
- Temporary power lines, switchboxes, receptacle boxes, metal cabinets, and enclosures around equipment must be marked to indicate the maximum operating voltage.
- Plugs and receptacles must be kept out of water unless of an approved submersible construction.
- All extension cord outlets must be equipped with ground fault circuit interrupters (GFCI).
- Attachment plugs or other connectors must be equipped with a cord grip and be constructed to endure rough treatment.
- Extension cords or cables must be inspected prior to each use and replaced if worn or damaged. Cords and cables must not be fastened with staples, hung from nails, or suspended by bare wire.
- Flexible cords must be used only in continuous lengths without splice, with the exception of molded or vulcanized splices made by a qualified electrician.

8.15 Lifting Safety

Using proper lifting techniques may prevent back strain or injury. The fundamentals of proper lifting include:

- Consider the size, shape, and weight of the object to be lifted. A mechanical lifting device or additional persons must be used to lift an object if it cannot be lifted safely alone.
- The hands and the object should be free of dirt or grease that could prevent a firm grip.

- Gloves must be used, and the object inspected for metal slivers, jagged edges, burrs, or rough or slippery surfaces.
- Fingers must be kept away from points that could crush or pinch them, especially when putting an object down.
- Feet must be placed far enough apart for balance. The footing should be solid and the intended pathway should be clear.
- The load should be kept as low as possible, close to the body with the knees bent.
- To lift the load, grip firmly and lift with the legs, keeping the back as straight as possible.
- A worker should not carry a load that he or she cannot see around or over.
- When putting an object down, the stance and position are identical to that for lifting; the legs are bent at the knees, and the back is straight as the object is lowered.

8.16 Ladder Safety

When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (9 m) above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

- Ladders shall be maintained free of oil, grease, and other slipping hazards.
- Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond their manufacturer's rated capacity.
- Ladders shall be used only for the purpose for which they were designed.
- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.
- Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement. Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces, including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.
- The area around the top and bottom of ladders shall be kept clear.

- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment.
- The top, top step, or the step labeled that it or any step above it should not be used as a step.
- Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders shall be inspected by the HSM for visible defects on a daily basis and after any occurrence that could affect their safe use.
- Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; corroded components; or other faulty or defective components shall either be immediately marked in a manner that readily identifies them as defective or be tagged with “Do Not Use” or similar language and shall be withdrawn from service.
- Fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; or corroded components; shall be withdrawn from service.
- Ladder repairs shall restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
- Single-rail ladders shall not be used.
- When ascending or descending a ladder, the user shall face the ladder.
- Each employee shall use at least one hand to grasp the ladder when progressing up and/or down the ladder.
- An employee shall not carry any object or load that could cause the employee to lose balance and fall.

8.17 Traffic Safety

The project site may be located adjacent to a public roadway where exposure to vehicular traffic is likely. Traffic may also be encountered as vehicles enter and exit the area. To minimize the likelihood of project personnel and activities being affected by traffic, the following procedures will be implemented.

Cones must be placed along the shoulder of the roadway starting 100 feet from the work area to alert passing motorists to the presence of personnel and equipment. A “Slow” or “Men Working” sign must be placed at the first cone. Barricades with flashing lights should be placed between the roadway and the work area.

During activities along a roadway, equipment will be aligned parallel to the roadway to the extent feasible, facing into the oncoming traffic so as to place a barrier between the work crew and the oncoming traffic. All crewmembers must remain behind the equipment and the traffic barrier.

All site personnel who are potentially exposed to vehicular traffic must wear an outer layer of orange warning garments, such as vests, jackets, or shirts. If work is performed in hours of dusk or darkness, workers will be outfitted with reflective garments either orange, white (including silver-coated reflective coatings or elements that reflect white light), yellow, fluorescent red-orange, or fluorescent yellow-orange.

The flow of traffic into and out of the adjacent business must be assessed, and precautions taken to warn motorists of the presence of workers and equipment. Where possible, vehicles should be aligned to provide physical protection of people and equipment.

9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES

9.1 Evaluation of Hazards

The evaluation of hazards is provided as a quick reference as to the known conditions for the Site, wherein the level of detail for each of the subsections is identified.

9.1.1 Hazard Characteristics

Existing information for Site:
__X__ Detailed _____ Preliminary _____ None

Hazardous/Contaminated Material Form(s):
__X__ Solid __X__ Liquid _____ Sludge ___ Gas X Vapor

Containment Type(s):
_____ Drum _____ Tank _____ Pit __X__ Debris
_____ Pond _____ Lagoon Other: Historic Fill

Hazardous Material Characteristics:
__X__ Volatile _____ Corrosive _____ Reactive _____ Radioactive
_____ Ignitable __X__ Toxic __X__ Unknown

Routes of Exposure:
__X__ Oral __X__ Dermal __X__ Eye __X__ Respiratory

9.1.2 Potential Health and Safety Hazards

__X__ Heat
__X__ Cold
_____ Confined space entry
_____ Oxygen depletion
_____ Asphyxiation
__X__ Excavation
__X__ Cave-ins
__X__ Falls, slippage
__X__ Heavy equipment
_____ Congested areas
__X__ General Construction
__X__ Physical injury
_____ Electrical hazards
_____ Handling and product transfer
__X__ Fire
__X__ Explosion
__X__ Biological Hazards
- __X__ Plants – Poison Ivy, Poison Oak
- __X__ Insects – Ticks
- __X__ Insects – Mosquitoes
- __X__ Insects – Bees and Wasps
- __X__ Rats and Mice

_____ Non-ionizing Radiation (i.e. UV, IR, etc.)
_____ Other: Potential Ignition Hazard.

9.2 Field Activities, Hazards, and Control Procedures

The following task-specific safety analyses identify potential health, safety, and environmental hazards associated with each type of field activity. Because of the complex and changing nature of field projects, supervisors must continually inspect the site to identify hazards that may affect on-site personnel, the community, or the environment. The FS must be aware of these changing conditions and discuss them with the PM whenever these changes impact employee health, safety, the environment, or performance of the project. The FS will keep on-site personnel informed of the changing conditions, and the PM will write and/or approve addenda or revisions to this HASP as necessary.

9.2.1 Mobilization/Construction Stakeout

Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this initial phase, project personnel will walk the site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

Hazard Identification

The hazards of this phase of activity are associated with heavy equipment operation, manual materials handling, installation of temporary on-site facilities, and manual site preparation.

Manual materials handling and manual site preparation may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Installation of temporary field office and support facilities may expose personnel to electrical hazards, underground and overhead utilities, and physical injury due to the manual lifting and moving of materials. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat- or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Controls

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.2.2 Demolition/Site Clearing

Description of Tasks

Site clearance will involve manual or mechanical removal of objects impeding access to the construction footprint. These obstructions are both natural and man-made items and will include, but not be limited to, fabricated metal and concrete structures, trees, vegetation, rubble, and miscellaneous trash/debris.

Hazard Identification

Hazards associated with demolition and site clearance include personnel working in and around potentially unstable structures, or locations of potential contact with hazardous chemicals, utilities, and/or falling objects. This task will involve manual, as well as mechanical demolition/clearance efforts so exertion and equipment hazards exist.

Controls

PPE – Personnel shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.

Preparatory Operations – Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a licensed Professional Engineer, of the structure to determine the stability of the structure. Any adjacent structure shall where personnel may be exposed shall also be similarly checked. The PO shall have in writing evidence that such a survey has been performed. All structural instabilities shall be shored or braced, under the supervision of a licensed Professional Engineer, prior to access by an FP.

Utilities – All electric, gas, water, steam, sewer, and other service lines shall be shut off, caped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company that is involved shall be notified in advance. If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary.

Hazardous Substances – It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

Falling Debris/Objects – No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effective protected. Access to the area where falling objects/debris may be encountered must be gated and controlled.

Structural Collapse – Structural or load supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load. Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are not of sufficient strength to support the imposed load.

Rollover Guards – All equipment used in site clearing operations shall be equipped with rollover guards meeting the applicable requirements. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the applicable requirements.

Inspections – During demolition, continuing inspections by a licensed Professional Engineer shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, walls, or loosened material. No FP shall be permitted

to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

9.2.3 Excavation and Cut/Fill Operations

9.2.3.1 Excavation/Trenching

Description of Tasks

This task includes the excavation of contaminated soils and superficial debris. Excavation depths vary across the site.

Hazard Identification

The hazards of this activity are associated with heavy equipment operation, subsurface intrusion, manual materials handling, stockpiling, and disposal. Subsurface intrusion presents hazards associated with negotiating buried utilities, cave-ins of the excavated areas, and regress methods for personnel working inside the excavated areas. Disruption of contaminated soil also presents a health hazard.

Controls

Underground Utilities – The estimated locations of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during the excavation work, shall be determined prior to opening an excavation. Utility companies or owners shall be contacted ("Call Before You Dig") within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by save and acceptable means. While the excavation is open, underground installations shall be protected, supported, or removed, as necessary, to safeguard site personnel.

Cave-Ins – Project personnel in an excavation shall be protected from cave-ins by an adequate protective system, except when:

- Excavations are made entirely in stable rock or excavations are less than five feet in depth and examination of the ground by the SSO provides no indication of a potential cave-in.
- Protective systems shall have the capacity to resist, without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Project personnel shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by the SSO for evidence of a situation that could result in possible cave-ins,

indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the SSO prior to the start of work and as needed throughout operations. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when project personnel exposure can be reasonably anticipated.

Where the SSO finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed personnel shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

Excavation Egress – A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet or lateral travel for project personnel.

9.2.3.2 Heavy Equipment Operation

Description of Tasks

Heavy equipment to be used for this task include, but are not limited to, excavators, dozers, dump trucks, and water sprayers (if required).

Hazard Identification

The most common type of accident that occurs in material handling operations is the "caught between" situation when a load is being handled and an object gets caught between two moving parts of the equipment. Operation of the heavy construction equipment may produce harmful noise.

Controls

Equipment Inspection – All vehicles in use shall be checked prior to operation to ensure that all parts, equipment, and accessories that affect safe operations are in proper operating condition and free from defects. All defects shall be corrected before the vehicle is placed in service.

Ground Guides – No personnel shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear, unless:

- The vehicle has a reverse signal alarm distinguishable from the surrounding noise level; or
- The vehicle is backed up only when an observer signals that it is safe to do so.

Blocking – Heavy machinery, equipment, or parts thereof that are suspended or held aloft shall be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

Noise – Control measures for noise are addressed in Section 4.9.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.3.3 Disturbance/Handling of Contaminated Material

Description of Tasks

After the contaminated soil is excavated from below the Site's surface, the material will be stockpiled, dried, and either transported offsite or relocated and backfilled on site.

Hazard Identification
The hazards associated with materials handling include contact of the contaminated material with project personnel, or cross contamination with other site soil.

Controls
Cross Contamination – Following excavation, contaminated soil stockpiles will be placed on a structure constructed to separate the material from the site soil and collect any groundwater leachate. The material shall be covered to prevent storm water erosion or migration of contaminants through storm water.

Air Monitoring – Air and particulate monitoring will be conducted during soil excavation activities to assess the potential for exposure to airborne COCs. If the results of air monitoring indicate the presence of organic vapors or particulates in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

Traffic – Control measures for traffic are addressed in Section 8.17.

9.2.4 Drilling/Subsurface Intrusion Activities

Description of Tasks
This component of work includes the project tasks of delineation and sampling the PCB–impacted soil, installation of the groundwater cutoff wall, and in-situ soil grouting. Geotechnical testing of the grout and existing site soils will also be conducted.

Hazard Identification
The primary physical hazards for this activity are associated with the use of soil boring and grouting equipment. The equipment is hydraulically powered and uses static force and dynamic percussion force to advance sampling and penetrating tubes.

Accidents can occur as a result of improperly placing the equipment on uneven or unstable terrain or failing to adequately secure the equipment prior to the start of operations. Overhead utility lines can create hazardous conditions if contacted by the equipment. Underground installations such as electrical lines, conduit, and product lines pose a significant hazard if contacted.

Controls
Geoprobe and Drill Rig Safety Procedures - The operator of the equipment must possess required state or local licenses to perform such work. All members of the crew shall receive site-specific training prior to beginning work.

The operator is responsible for the safe operation of the rig, as well as the crew's adherence to the requirements of this HASP. The operator must ensure that all safety equipment is in proper condition and is properly used. The members of the crew must follow all instructions of the operator, wear all personal protective equipment, and be

aware of all hazards and control procedures. The operator and crew must participate in the Daily Safety Meetings and be aware of all emergency procedures.

Equipment Inspection - Each day, prior to the start of work, the rig and associated equipment must be inspected by the operator. The following items must be inspected:

- Vehicle condition;
- Proper storage of equipment;
- Condition of all hydraulic lines;
- Fire extinguisher; and
- First aid kit.

Equipment Set Up - The drill rig must be properly blocked and leveled prior to raising the derrick. The wheels which remain on the ground must be chocked. The leveling jacks shall not be raised until the derrick is lowered. The rig shall be moved only after the derrick has been lowered.

All well sites will be inspected by the driller prior to the location of the rig to verify a stable surface exists. This is especially important in areas where soft, unstable terrain is common.

The drill rig must be properly blocked and leveled prior to raising the derrick. Blocking provides a more stable drilling structure by evenly distributing the weight of the rig. Proper blocking ensures that differential settling of the rig does not occur.

When the ground surface is soft or otherwise unstable, wooden blocks, at least 24" by 24" and 4" to 8" thick shall be placed between the jack swivels and the ground. The emergency brake shall be engaged, and the wheels that are on the ground shall be chocked.

Rules for Intrusive Activity - Before beginning any intrusive activity, the existence and location of underground pipe, conduit, electrical equipment, and other installations will be determined. This will be done, if possible, by contacting the appropriate client representative to mark the location of the lines. “Call Before You Dig” will verify the potential for encountering subsurface utilities. If the client’s knowledge of the area is incomplete, an appropriate device, such as a magnetometer, will be used to locate the line.

Combustible gas readings of the general work area will be made regularly in areas where and/or during operations when the presence of flammable vapors or gases is suspected, such as during intrusive activities (see Section 5.1). Operations must be suspended and corrective action taken if the airborne flammable concentration reaches 10% of the LEL in the immediate area (a one-foot radius) of the point of drilling, or near any other ignition sources.

Overhead Electrical Clearances - If equipment is operated in the vicinity of overhead power lines, the power to the lines must be shut off or the equipment must be positioned and blocked such that no part, including cables, can come within the minimum clearances as follows:

Nominal System Voltage	Minimum Required Clearance
0-50kV	10 feet
51-100kV	12 feet
101-200kV	15 feet
201-300kV	20 feet
301-500kV	25 feet
501-750kV	35 feet
751-1,000kV	45 feet

When the drill rig is in transit, with the boom lowered and no load, the equipment clearance must be at least 4 feet for voltages less than 50kV, 10 feet for voltages of 50 kV to 345 kV, and 16 feet for voltages above 345 kV.

Hoisting Operations - Drillers should never engage the rotary clutch without watching the rotary table, and ensuring it is clear of personnel and equipment.

Unless the drawworks is equipped with an automatic feed control, the brake should not be left unattended without first being tied down.

Drill pipe, auger strings or casing should be picked up slowly. Drill pipe should not be hoisted until the driller is sure that the pipe is latched in the elevator, or the derrickman has signaled that he may safely hoist the pipe.

During instances of unusual loading of the derrick or mast, such as when making an unusually hard pull, only the driller should be on the rig floor; no one else should be on the rig or derrick.

The brakes on the drawworks of the drill rig should be tested by the driller each day. The brakes should be thoroughly inspected by a competent individual each week.

A hoisting line with a load imposed should not be permitted to be in direct contact with any derrick member or stationary equipment, unless it has been specifically designed for line contact.

Workers should never stand near the borehole whenever any wire line device is being run.

Hoisting control stations should be kept clean and controls labeled as to their functions.

Catline Operations - Only experienced workers will be allowed to operate the cathead controls. The kill switch must be clearly labeled and operational prior to operation of the catline. The cathead area must be kept free of obstructions and entanglements.

The operator should not use more wraps than necessary to pick up the load. More than one layer of wrapping is not permitted.

Personnel should not stand near, step over, or go under a cable or catline which is under tension.

Employees rigging loads on catlines shall:

- Keep out from under the load;
- Keep fingers and feet where they will not be crushed;
- Be sure to signal clearly when the load is being picked;
- Use standard visual signals only and not depend on shouting to coworkers; and
- Make sure the load is properly rigged, since a sudden jerk in the catline will shift or drop the load.

Wire Rope - When two wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or re-socketed. Special attention shall be given to the inspection of end fittings on boom support, pendants, and guy ropes.

Wire rope removed from service due to defects shall be cut up or plainly marked as being unfit for further use as rigging.

Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope; the clip nuts shall be re-tightened immediately after initial load carrying use and at frequent intervals thereafter.

When a wedge socket fastening is used, the dead or short end of the wire rope shall have a clip attached to it or looped back and secured to itself by a clip; the clip shall not be attached directly to the live end.

Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads, shall consist of one continuous piece without knot or splice.

An eye splice made in any wire rope shall have not less that five full tucks.

Wire rope shall not be secured by knots. Wire rope clips shall not be used to splice rope.

Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire clips or knots.

Pipe/Auger Handling - Pipe and auger sections shall be transported by cart or carried by two persons. Individuals should not carry auger or pipe sections without assistance.

Workers should not be permitted on top of the load during loading, unloading, or transferring of pipe or rolling stock.

Employees should be instructed never to try to stop rolling pipe or casing; they should be instructed to stand clear of rolling pipe.

Slip handles should be used to lift and move slips. Employees are not permitted to kick slips into position.

When pipe is being hoisted, personnel should not stand where the bottom end of the pipe could whip and strike them.

Pipe and augers stored in racks, catwalks or on flatbed trucks should be secured to prevent rolling.

9.2.5 Subsurface Chemical Sample Collection/Analysis

Description of Tasks
This sub-task consists of the collection of soil samples for subsequent field and laboratory analysis. The physical hazards of soil sampling are primarily associated with the sample collection methods, procedures utilized, and the environment itself.

Hazard Identification
Incidental contact with COCs is the primary hazard associated with sampling the stabilized material. This contact may occur through the manipulation of sample media and equipment, manual transfer of media into sample containers, and proximity of operations to the breathing zone. The primary hazards associated with these sampling procedures are not potentially serious; however, other operations in the area, or the conditions under which samples must be collected, may present chemical and physical hazards. The hazards directly associated with sampling procedures are generally limited to strains/sprains and potential eye hazards. Potential chemical hazards may include contact with media containing site COCs and potential contact with chemicals used for equipment decontamination.

Controls
PPE – To control dermal exposure during sampling activities, a minimum of Level D protection will be worn. If necessary, based on field observations and site conditions, air monitoring may be conducted during sediment sampling activities. If the results of air monitoring indicate the presence of airborne contaminants in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

9.2.6 UST Closure

9.2.6.1 Working in Confined Spaces

Description of Tasks
The project will involve the closure of several USTs.

Hazard Identification
Closure activities may require the entrance into confined spaces to facilitate cleaning and removal of the USTs.

Controls
All personnel required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The PO shall comply with all specific regulations that apply to work in dangerous or potentially dangerous areas.

9.2.6.2 Working with Compressed Air

Description of Tasks

The proposed method of purging the USTs includes the injection of compressed gas into the tank and attached piping network.

Hazard Identification

Uncontrolled release of the highly pressured air can cause injury to FP during this task. Cylinders must also be properly managed to ensure they are not compromised during storage and/or use.

Controls

Pressure Regulation – Compressed air used for cleaning purposes shall be reduced to less than 30 pounds per square inch and then only with effective chip guarding and personal protective equipment.

Cylinder Storage – Valve protection caps shall be in place and secured when compressed gas cylinders are transported, moved, or stored. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved. Compressed gas cylinders shall be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried. Cylinders shall be placed in a location where they cannot become part of an electrical circuit.

9.2.7 Site Capping System Construction

Refer to Section 8.0 for general safety procedures.

9.2.8 Creek Relocation

Refer to Section 8.0 for general safety procedures.

9.2.9 Decontamination

All equipment will be decontaminated before leaving the site. Personnel involved in decontamination activities may be inadvertently exposed to skin contact with contaminated materials and chemicals brought from the EZ. Personnel involved in decontamination activities must wear PPE that is, at a minimum, one level below the level worn by personnel working in the EZ.

9.2.10 Demobilization

Demobilization involves the removal of all tools, equipment, supplies, and vehicles brought to the site. The hazards of this phase of activity are associated with heavy equipment operation and manual materials handling.

Manual materials handling may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Heavy equipment operation presents noise and vibration hazards, and hot surfaces, to operators. Personnel in the vicinity of heavy equipment operation may be exposed to physical hazards resulting in fractures, contusions, and lacerations and may be exposed to high noise levels. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat-or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

9.3 Chemical Hazards

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site COCs. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations. Air monitoring requirements for site tasks are outlined in Section 5.1.

COCs at the site include heavy metals, some VOC compounds, some SVOC compounds and potentially other industrial chemicals including PCBs and pesticides.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing site COCs during remedial operations is moderate. Table 6 lists the primary contaminants that have been identified at the Site and the media in which they are present.

Table 6 – List of Primary Contaminants

Media: Soil		
Metals	**Concentration (mg/kg)**	**Applicable Monitoring Instrument**
Lead	1,600	Not Applicable
Barium	48.2	Not Applicable
Cadmium	8.38	Not Applicable
Mercury	1.83	Not Applicable
SVOCs	**Concentration (mg/kg)**	**Applicable Monitoring Instrument**
Benzo(a)Pyrene	39.6	Not Applicable
Benzo(a)Anthracene	41.8	Not Applicable
Benzo(b)Fluoranthene	54.5	Not Applicable
Benzo(k)Fluoranthene	16	Not Applicable
Chrysene	39.8	Not Applicable
Dibenzo(a,h)Anthracene	6.1	Not Applicable
Indeno(1,2,3-c,d)Pyrene	18.5	Not Applicable
Pesticides	Concentration (mg/kg)	Applicable Monitoring Instrument
4,4'-DDD	0.011	Not Applicable
4,4'-DDE	0.02	Not Applicable
4,4'-DDT	0.037	Not Applicable

Media: Groundwater		
Volatile Organic Compounds	**Concentration (ppb)**	**Applicable Monitoring Instrument**
Tetrachloroethene	25.5	PID

10.0 EMERGENCY PROCEDURES

10.1 General

Prior to the start of operations, the work area will be evaluated for the potential for fire, contaminant release, or other catastrophic event. Unusual conditions or events, activities, chemicals, and conditions will be reported to the FS/SSO immediately.

The FS/SSO will establish evacuation routes and assembly areas for the site. All personnel entering the site will be informed of this route and the assembly area.

10.2 Emergency Response

If an incident occurs, the following steps will be taken:

- The FS/SSO will evaluate the incident and assess the need for assistance and/or evacuation;
- The FS/SSO will call for outside assistance as needed;
- The FS/SSO will ensure the PM is notified promptly of the incident; and
- The FS/SSO will take appropriate measures to stabilize the incident scene.

10.2.1 Fire

In the case of a fire at the site, the FS/SSO will assess the situation and direct fire-fighting activities. The FS/SSO will ensure that the PM is immediately notified of any fires. Site personnel will attempt to extinguish the fire with available extinguishers, if safe to do so. In the event of a fire that site personnel are unable to safely extinguish with one fire extinguisher, the local fire department will be summoned.

10.2.2 Contaminant Release

In the event of a contaminant release, the following steps will be taken:

- Notify FS/SSO immediately;
- Evacuate immediate area of release;
- Conduct air monitoring to determine needed level of PPE; and
- Don required level of PPE and prepare to implement control procedures.

The FS/SSO has the authority to commit resources as needed to contain and control released material and to prevent its spread to off-site areas.

10.3 Medical Emergency

All employee injuries must be promptly reported to the SSO/FS, who will:

- Ensure that the injured employee receives prompt first aid and medical attention;
- In emergency situations, the worker is to be transported by appropriate means to the nearest urgent care facility (normally a hospital emergency room); and
- If the injured person is a SESI employee, notify SESI at 973-808-9050.

10.3.1 Emergency Care Steps

Survey the scene. Determine if it is safe to proceed. Try to determine if the conditions that caused the incident are still a threat. Protect yourself from exposure before attempting to rescue the victim.

- Do a primary survey of the victim. Check for airway obstruction, breathing, and pulse. Assess likely routes of chemical exposure by examining the eyes, mouth, nose, and skin of the victim for symptoms.
- Phone Emergency Medical Services (EMS). Give the location, telephone number used, caller's name, what happened, number of victims, victim's condition, and help being given.
- Maintain airway and perform rescue breathing as necessary.
- Perform CPR as necessary.
- Do a secondary survey of the victim. Check vital signs and do a head-to-toe exam.

Treat other conditions as necessary. If the victim can be moved, take him/her to a location away from the work area where EMS can gain access.

10.4 First Aid - General

All persons must report any injury or illness to their immediate supervisor or the FS. Trained personnel will provide first aid. Injuries and illnesses requiring medical treatment must be documented. The FS and SSO must fill out an accident/incident report as soon as emergency conditions no longer exist and first aid and/or medical treatment has been ensured. The report must be completed and submitted to the PM within 24 hours after the incident.

If first-aid treatment is required, first aid kits are kept at the CRZ. If treatment beyond first aid is required, the injured person(s) should be transported to the medical facility. If the injured person is not ambulatory or shows any sign of not being in a comfortable and stable condition for transport, then an ambulance/paramedics should be summoned. If there is any doubt as to the injured worker's condition, it is best to let the local paramedic or ambulance service examine and transport the worker.

10.4.1 First Aid - Inhalation

Any employee complaining of symptoms of chemical overexposure as described in Section 4, General Site Safety Procedures, will be removed from the work area and transported to the designated medical facility for examination and treatment.

10.4.2 First Aid - Ingestion

Call EMS and consult a poison control center for advice. If available, refer to the MSDS for treatment information. If the victim is unconscious, keep them on their side and clear the airway if vomiting occurs.

10.4.3 First Aid - Skin Contact

Project personnel who have had skin contact with contaminants will, unless the contact is severe, proceed through the CRZ, to the wash area. Personnel will remove any contaminated clothing, and then flush the affected area with water for at least 15

minutes. The worker should be transported to the medical facility if he/she shows any sign of skin reddening, irritation, or if he/she requests a medical examination.

10.4.4 First Aid - Eye Contact

Project personnel who have had contaminants splashed in their eyes or who have experienced eye irritation while in the EZ, must immediately proceed to the eyewash station in the CRZ. Do not decontaminate prior to using the eyewash. Remove whatever protective clothing is necessary to use the eyewash. Flush the eye with clean running water for at least 15 minutes. Arrange prompt transport to the designated medical facility.

10.5 Reporting Injuries, Illnesses, and Safety Incidents

Injuries and illnesses, however minor, will be reported to the FS immediately. The FS will complete an injury report and submit it to the HSM, and the PM by end of shift.

10.6 Emergency Information

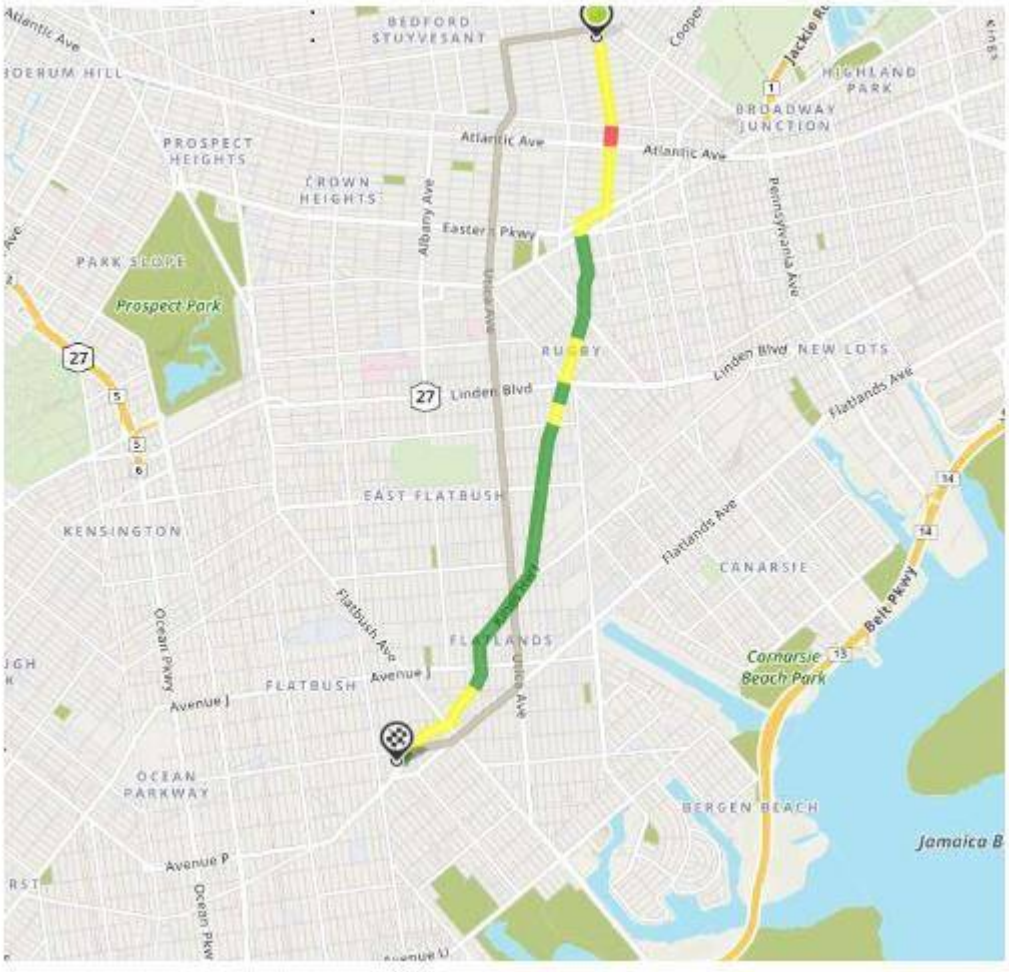
The means to summon local public response agencies such as police, fire, and ambulance will be reviewed in the daily safety meeting. These agencies are identified in Table 7.

Table 7 – Emergency Contacts

Local Emergency Contacts	**Telephone No.**
EMERGENCY	911
Mount Sinai Brooklyn Hospital	(718) 252-3000
Police Emergency	911
Fire Emergency	911
Rescue Squad	911
Ambulance	911
Miscellaneous Contacts	**Telephone No.**
N.Y. Poison Control Center	(800) 222-1222
National Response Center and Terrorist Hotline	(800) 424-8802
Center for Disease Control	(800) 311-3435
Utility Mark-Out	(800) 962-7962

10.6.1 Directions to Hospital

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



Directions to Hospital:
Head southeast on Broadway to Hancock St
Turn Right onto Hancock Street
Turn Left at the first cross street onto Saratoga Ave
Turn Right onto Eastern Parkway
Turn Left onto Howard Ave
Continue onto Tapscott St
Continue Straight onto Kings Hwy
Turn Right stay on Kings Hwy
Keep Left to stay on Kings Hwy
At the Traffic Circle, take 2nd exit and stay on Kings Hwy
The Hospital is on the Right

11.0 LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping for the operations at the subject site.

11.1 HASP Field Change Request

To be completed for initiating a change to the HASP. PM approval is required. The original will be kept in the project file (See Attachment 3).

11.2 Medical and Training Records

The HSM must obtain and keep a log of personnel meeting appropriate training and medical qualifications for the site work. The log will be kept in the project file. Each company's Human Resources Department will maintain medical records, in accordance with 29 CFR 1910.1020.

11.3 Exposure Records

Any personnel monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with 29 CFR 1910.1020. For SESI employees, the originals will be sent to the Human Resources Manager. For subcontractor employees, the original file will be sent to the subcontractor employer with a copy maintained in the SESI project file.

11.4 Accident/Incident Report

Any accident/incident reports must be completed following procedures given in Section 10.5 of this HASP. The originals will be sent to the HSM for maintenance. A copy of the forms will be kept in the project file. (See Attachment 4)

11.5 OSHA Form 200

An OSHA Form 200 (Log of Occupational Injuries and Illnesses) will be kept at the project site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the Human Resources Manager for maintenance. Subcontractor employees must also meet the requirements of maintaining an OSHA 200 Form. The accident/incident report meets the requirements of the OSHA Form 101 (Supplemental Record), which must be maintained with the OSHA Form 200 for all recordable injuries or illnesses.

11.6 On-Site Health and Safety Field Logbooks

The HSM or designee will maintain an on-site health and safety log book in which daily Site conditions, activities, personnel, and significant events will be recorded. Calibration records and personnel monitoring results, if available, will also be recorded in the field logbook. The original logbook will be kept in the project file.

Whenever any personnel monitoring is conducted onsite, the monitoring results will be noted in the filed logbook. These will become part of the exposure records file and will be maintained by the HSM.

A signatory page is included (See Attachment 5) and is to be signed by those working on and/or visiting the site.

11.7 Material Safety Data Sheets

Material Safety Data Sheets (MSDS) will be obtained and kept on file at the project site for each hazardous chemical brought to, use, or stored at the Site (See Attachment 6).

ATTACHMENT 1

OSHA FORMS 300, 3001, AND 301

OSHA's Form 301
Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by _____

Title _____

Phone (_____) _____ -- _____ Date ___/___/___

Information about the employee

1) Full name _____

2) Street _____

City _____ State _____ ZIP _____

3) Date of birth ___/___/___

4) Date hired ___/___/___

5) ☐ Male
☐ Female

Information about the physician or other health care professional

6) Name of physician or other health care professional _____

_____

7) If treatment was given away from the worksite, where was it given?

Facility _____

Street _____

City _____ State _____ ZIP _____

8) Was employee treated in an emergency room?
☐ Yes
☐ No

9) Was employee hospitalized overnight as an in-patient?
☐ Yes
☐ No

Information about the case

10) Case number from the *Log* _____ *(Transfer the case number from the Log after you record the case.)*

11) Date of injury or illness ___/___/___

12) Time employee began work _____ AM / PM

13) Time of event _____ AM / PM ☐ Check if time cannot be determined

14) ***What was the employee doing just before the incident occurred?*** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. *Examples:* "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."

15) ***What happened?*** Tell us how the injury occurred. *Examples:* "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

16) ***What was the injury or illness?*** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore." *Examples:* "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

17) ***What object or substance directly harmed the employee?*** *Examples:* "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.*

18) ***If the employee died, when did death occur?*** Date of death ___/___/___

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name ______________

City ______________ State ______________

Identify the person			Describe the case			Classify the case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
								Remained at Work				(M)					
(A) Case no.	(B) Employee's name	(C) Job title (*e.g., Welder*)	(D) Date of injury or onset of illness	(E) Where the event occurred (*e.g., Loading dock north end*)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (*e.g., Second degree burns on right forearm from acetylene torch*)	(G) Death	(H) Days away from work	(I) Job transfer or restriction	(J) Other record-able cases	(K) Away from work	(L) On job transfer or restriction	(1) Injury	(2) Skin disorder	(3) Respiratory condition	(4) Poisoning	(5) Hearing loss	(6) All other illnesses
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___	___	___	___/___ month/day	___	___	☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
___	___	___	___/___ month/day	___	___	☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
___	___	___	___/___ month/day	___	___	☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
					Page totals ➤	___	___	___	___	___	___	___ Injury (1)	___ Skin disorder (2)	___ Respiratory condition (3)	___ Poisoning (4)	___ Hearing loss (5)	___ All other illnesses (6)

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
_____	_____	_____	_____
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
_____	_____
(K)	(L)

Injury and Illness Types

Total number of . . .

	(M)		
(1) Injuries	_____	(4) Poisonings	_____
		(5) Hearing loss	_____
(2) Skin disorders	_____	(6) All other illnesses	_____
(3) Respiratory conditions	_____		

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Establishment Information

Your establishment name _____

Street _____

City _____ State _____ ZIP _____

Industry description (*e.g., Manufacture of motor truck trailers*)

_____

Standard Industrial Classification (SIC), if known (*e.g., 3715*)

__ __ __ __

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)

__ __ __ __ __ __

Employment Information *(If you don't have these figures, see the Worksheet on the back of this page to estimate.)*

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

_____ _____
Company executive Title

( ) - / /
Phone Date

ATTACHMENT 2

OSHA POSTER

Job Safety and Health

It's the law!

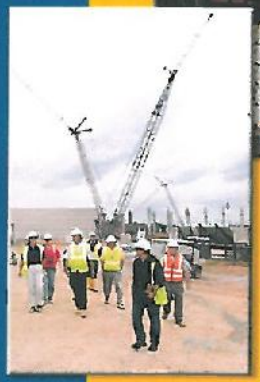
OSHA®
Occupational Safety and Health Administration
U.S. Department of Labor

EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.



This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA (6742)
www.osha.gov

OSHA 3165-02 2012R

ATTACHMENT 3

AIR MONITORING LOG

Air Monitoring: Sample Collection and Analysis

Date & Time of Monitoring	Task / Operation Being	Substance(s)/ Hazard(s) Being	Monitoring Location	Type/Method of Monitoring (separate lines for	Monitoring Results	Exposure Limits	Required Action

ATTACHMENT 4

HEALTH AND SAFETY ORIENTATION SIGNATORY PAGE

Attachment 4 – Site-Specific Health and Safety Orientation Signatory Page
HEALTH AND SAFETY PLAN
173-269 Doremus Avenue - Newark, NJ

Title	Name	Signature
Project Manager:	TBD	
Health and Safety Manager:	TBD	

I have read the attached Health and Safety Plan (HASP) and have received site-specific information and orientation regarding the identified physical, chemical, and biological hazards anticipated at this site. My signature certifies that I understand the procedures, equipment, and restrictions applicable to this project site and agree to abide by them.

Signature	Printed Name	Company	Date

Attachment 4 – Health and Safety Orientation Signatory Page (continued)

Signature	Printed Name	Company	Date

ATTACHMENT 5

SAFETY DATA SHEETS (SDSs)

POCH Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH). Creation date / last update: *2002-10-15 / 2005-04-22*

1. Identification of the substance/preparation and of the company/undertaking

BENZENE

Catalogue Numbers: *99,9% standard for GC-162500320; pure-162500426; pure p. a.-162500110; for HPLC-162503155; Pochsolv-162505156;*

Use of the substance / preparation: analitical and chemical reagent for synthesis solvent

POCH SA
44-101 Gliwice, Sowinskiego Str. 11
tel.: +48 32 23-92-381; fax: +48 32 23-92-370; e-mail: export@poch.com.pl
Emergency telephone no: +48 606-659-006

2. Hazard identification

Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

3. Composition/information on ingredients

CAS-No.: *71-43-2*

Molecular mass: *78.11*

Molecular formula: C_6H_6

WE Number: *200-753-7*

EC-Index No.: *601-020-00-8*

4. First aid measures

After eye contact: *rinse out with plenty of water with the eyelid held wide open. Call in ophtalmologist.*

After skin contact: *wash off with plenty of water. Remove contaminated clothing.*

After swallowing: *make victim drink plenty of water. Avoid vomiting (risk of aspiration). Laxative: paraffin oil (3 mg/kg), sodium sulfate (1 tablespoon 1/4 l water). Lavage of stomach only if necessary. Call in physician.*

After inhalation: *fresh air. If necessary, apply mouth- to- mouth resuscitation or mechanical ventilation.*

5. Fire-fighting measures

Suitable extinguishing media: *foam, powder*

Special risk: *combustible. Vapours heavier than air. Formation of explosive mixtures possible with air. Keep away from sources of fire. Take measures to prevent electrostatic charging. Development of hazardous gases or vapours possible in the event of fire.*

Special protective equipment for fire fighting:

Other information: *contain escaping vapoures with spray water. Do not stay in dangerous zone without self- contained breathing apparatus. Prevent fire- fighting water from entering surface water or groundwater*

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance. Contain escaping vapours with water.

6. Accidental release measures

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Take up with liquid- absorbent material. Forward for disposal. Clean up affected area. Do not allow to enter sewerage system (risk of explosion).

7. Handling and storage

Handling: *Use with adequate ventilation. Use of the basic principles of Industrial Hygiene. Use according to good industry practice. Work under hood. Do not inhale substance. Do not empty into sewerage system. Use protective equipment according to p.8. Avoid skin contact. Protect against electrostatic charges. Keep away from source od ignition.*

Storage: *tightly closed. Dry well-ventilated place. Protect from light. Keep away from sources of ignition and heat. At +15 to + 25 deg C.*

8. Exposure controls/personal protection

Specific control parameter:

Provide exhaust ventilation. Ensure the eye wash station and safety showers. Protective equipment should be selected for the working place, depending on concentration and quantity of the hazardous product handled. The resistance of the protective clothing to chemicals should be ascertained with respective supplier.

Personal protective equipment:

respiratory protection: *required when vapours/aerosols are generated - gas mask with specific absorber.*

eye protection: *required - safety goggles.*

hand protection: *required - protective clothing.*

body protection: *required - protective clothing.*

industrial hygiene: *immediately change contaminated clothing. Apply skin - protective barrier cream. Wash hands and face after working with substance.*

9. Physical and chemical properties

Form: *liquid*

Colour: *colourless*

Odour: *characteristic*

pH value: *not available*

Melting point: *5°C*

Boiling point: *80°C*

Autoignition temperature: *555°C*

Flash point: *-11°C*

Explosion limit:

lower: *1,4 Vol%*

upper: *8 Vol%*

dynamic viscosity: *(20°C): 0,66 mPa*s*

kinematical viscosity: *0,75 mm2/s*

Vapour pressure: *100 mbar (20°C)*

Density: *0,88 g/cm³ (20°C)*

Bulk density: *not applicable*

Solublity:

in water: *1,8 g/l (20°C)*

in organic solvents: *soluble*

log P(w/o): *2,65. Bioconcentration factor: 1,10.*

10. Stability and reactivity

Conditions to be avioded: *high temperature*

Substances to be avoided: *nonorganic acids, sulfur, halogen-halogen compounds, oxidizing agents, peroxide compounds, oxyhalogenic compounds, halogenic hydrocarbons, rubber.*

Hazardous decomposition products: *no information available*

Other information: *volatile in steam. Unsuitable workings materials: various plastics*

11. Toxicological information

Toxicological information: *LD50 (oral rat) 930 mg/kg, LC50 (inhalation rat) 10 000 ppm (vol.) /7h. Experience has shown this substance to be carcinogenic to man.*

Other information: *After skin contact: irritations, danger of absorption, Degreasing effect on the skin possibly followed by secondary inflammation; After swallowing: nausea and vomiting; After absorption: pain and dizziness, cardiac arrhythmia, drop in blood pressure, dyspnoea, spasms, narcosis, respiratory paralysis, death; After eye contact: irritations of mucous membranes. Carcinogenic class 1. This substance should be handled with particular care.*

12. Ecological information

Log P(w/o): 2,65. No appreciable bioaccumulation potential is to be expected. Toxicity: Fish: Onchorhynchus mykiss LC50: 5,3 mg/l/96h. C. auratus LC50: 34 mg/l/96h. Daphnia: Daphnia magma EC50: 200 mg/l/48h. Algea: Chlorella vulgaris: LC50: 530 mg/l/24h. Bacteria: Ps. putida EC10: 168 mg/l. Toxic effect on aquatic organisms. Biologic degradation: ThOD 3,1 g/g, B.O.D 10% ThOD, C.O.D. 19% ThOD. Hazard for drinking water supplies. Do not allow to enter waters, waste water or soil!

13. Disposal considerations

POCH product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Handle contaminated packing in the same way as the substrate itself. Always contact a permitted waste disposal to assure compliance with all current local, state and federal regulations.

14. Transport information

ADR Class and package group: *3,II*

UN Number: *1114*

Name (acc. to UN): *benzene*

15. Regulatory information

Labelling according to EC Directives.

Symbol: *F, T; Flammable. Toxic.*

R-phrases: *45-11-48/23/24/25; Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.*

S-phrases: *53-45; In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure - obtain special instructions before use. Restricted to professional users.*

EC label.

16. Other information

Reason for alteration: general update.

Informations contained in this SDS while accurate to the best knowledge

SAFETY DATA SHEET

Version 5.4
Revision Date 09/11/2015
Print Date 05/12/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzo(A)pyrene sol, 1x1ml,100UG/ml,CH2Cl2

Product Number : 49473-U
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Methylene chloride			
CAS-No. EC-No. Index-No.	75-09-2 200-838-9 602-004-00-3	Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; STOT RE 2; H315, H319, H335, H336, H351, H373, H373	>= 90 - <= 100 %
Benzo[a]pyrene			
CAS-No. EC-No. Index-No.	50-32-8 200-028-5 601-032-00-3	Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H317, H340, H350, H360, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Potential Occupational Carcinogen See Appendix A		
Methylene chloride	75-09-2	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Substance listed; for more information see OSHA document 1910.1052		

		Substance listed; for more information see OSHA document 1910.1052		
		See Table Z-2		
		PEL	25.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		
		STEL	125.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methylene chloride	75-09-2	Dichloromethane	0.3000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-97 °C (-143 °F)
f)	Initial boiling point and boiling range	40 °C (104 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	353.1 hPa (264.8 mmHg) at 20 °C (68 °F)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)
NTP:	Reasonably anticipated to be a human carcinogen (Methylene chloride)
OSHA:	OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Blood - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1593 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: DICHLOROMETHANE, SOLUTION

IATA
UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benzo[a]pyrene	50-32-8	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	75-09-2	2007-09-28
Methylene chloride		
Benzo[a]pyrene	50-32-8	1990-01-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs (/$/*_ORG_REP_ORAL/$/) through prolonged or repeated exposure if swallowed.
H410	Very toxic to aquatic life with long lasting effects.
Muta.	Germ cell mutagenicity
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT RE	Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 09/11/2015 Print Date: 05/12/2016

SDS preview

LEAD

DANGER

7439-92-1

by Fisher Scientific

Synonyms

C.I. 77575, C.I. Pigment Metal 4, EINECS 231-100-4, Glover, HSDB 231, Lead flake, Olow, Plumbum, CI 77575, Plumbum metallicum, Blei, CI pigment metal 4, EC 231-100-4, KS-4, Lead, Lead element, Lead S2, Olow [Polish], Omaha & grant, Pb-S 100, Rough lead bullion, CCRIS 1581, Lead metal, Lead S 2, SSO 1, UNII-2P299V784P

Hazard statements

Harmful if inhaled
Harmful if swallowed
May cause cancer
May cause damage to organs through prolonged or repeated exposure
May cause drowsiness or dizziness

Precautions

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Rinse mouth
Store locked up

Hazard category

Acute toxicity, inhalation, Acute toxicity, oral, Carcinogenicity, Specific target organ toxicity, repeated exposure, Specific target organ toxicity, single exposure; Narcotic effects

:200View GHS Label8&param1=ZmRwLjFfNzE0NjEwMDNORQ==&unique=1525284976)

The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

SDS preview

ALCONOX® DETERGENT

DANGER

by SIGMA ALDRICH

Hazard statements

Causes serious eye damage
Causes skin irritation
Harmful if swallowed
May cause respiratory irritation
Toxic to aquatic life

Precautions

Avoid breathing dust/fume/gas/mist/vapours/spray
Wash ... thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid release to the environment
Wear protective gloves/protective clothing/eye protection/face protection
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Store in a well-ventilated place., Keep container tightly closed
Store locked up
Dispose of contents/container to ...

Hazard category

Acute toxicity, oral, Hazardous to the aquatic environment, (Acute), Serious eye damage/eye irritation, Skin corrosion/irritation, Specific target organ toxicity, single exposure; Respiratory tract irritation

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The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

SDS preview

ALCONOX® DETERGENT

DANGER

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Hazard statements

Causes serious eye damage
Causes skin irritation
Harmful if swallowed
May cause respiratory irritation
Toxic to aquatic life

Precautions

Avoid breathing dust/fume/gas/mist/vapours/spray
Wash ... thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid release to the environment
Wear protective gloves/protective clothing/eye protection/face protection
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Store in a well-ventilated place., Keep container tightly closed
Store locked up
Dispose of contents/container to ...

Hazard category

Acute toxicity, oral, Hazardous to the aquatic environment, (Acute), Serious eye damage/eye irritation, Skin corrosion/irritation, Specific target organ toxicity, single exposure; Respiratory tract irritation

200View GHS Label&param1=ZmRwLjFfNjYxMTgwMDNORQ==&unique=1525286306)

The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 22-Sep-2009 **Revision Date** 17-Jun-2015 **Revision Number** 2

1. Identification

Product Name **Antimony**

Cat No. : **A845-500**

Synonyms Antimony Regulus; Stibium

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if inhaled
Harmful if swallowed
Causes skin irritation
Causes eye irritation
May cause respiratory irritation

Precautionary Statements
Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Avoid breathing dust/fume/gas/mist/vapors/spray
Inhalation
Call a POISON CENTER or doctor/physician if you feel unwell
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
Rinse mouth
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

Component	CAS-No	Weight %
Antimony	7440-36-0	>= 99.5

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature 330 °C
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Fumes
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Antimony	TWA: 0.5 mg/m³	(Vacated) TWA: 0.5 mg/m³ TWA: 0.5 mg/m³	IDLH: 50 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Antimony	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	630 °C
Boiling Point/Range	1635 °C
Flash Point	No information available
Evaporation Rate	negligible
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	negligible
Vapor Density	No information available
Relative Density	6.684
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	330 °C
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Sb
Molecular Weight	121.71

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Fumes
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information	No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Antimony	7 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Antimony	7440-36-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Antimony	Not listed	Cyprinodon variegatus: LC50 = 6.2-8.3 mg/L/96h	Not listed	Not listed

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

TDG
UN-No UN2871

Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

IATA

UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN2871
Proper Shipping Name ANTIMONY POWDER
Hazard Class 6.1
Packing Group III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Antimony	X	X	-	231-146-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Antimony	7440-36-0	>= 99.5	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Antimony	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Antimony	X		-

OSHA Occupational Safety and Health Administration

Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Antimony	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Antimony	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1B Toxic materials
D2B Toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 22-Sep-2009
Revision Date 17-Jun-2015
Print Date 17-Jun-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 4.7
Revision Date 05/23/2016
Print Date 06/23/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Arsenic

Product Number : 202657
Brand : Aldrich
Index-No. : 033-001-00-X

CAS-No. : 7440-38-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H331 Toxic if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	As
Molecular weight	:	74.92 g/mol
CAS-No.	:	7440-38-2
EC-No.	:	231-148-6
Index-No.	:	033-001-00-X

Hazardous components

Component	Classification	Concentration
Arsenic		
	Acute Tox. 4; Acute Tox. 3; Aquatic Acute 1; Aquatic Chronic 1; H302, H331, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Arsenic	7440-38-2	TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lung cancer Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed human carcinogen		
		C	0.0020 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A 15 minute ceiling value		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Arsenic	7440-38-2	inorganic arsenic plus methylated metabolites	35µg As/l	In urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of the workweek (After four or five consecutive working days			

		with exposure)			
		inorganic arsenic plus methylated metabolites	35µg As/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of the workweek (After four or five consecutive working days with exposure)			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Pieces Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available

d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 817 °C (1,503 °F) - lit.
f)	Initial boiling point and boiling range	613 °C (1,135 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	5.727 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat Exposure to air may affect product quality.

10.5 Incompatible materials
Oxidizing agents, Halogens, Palladium undergoes a violent reaction with arsenic, Zinc, Platinum oxide, Nitrogen trichloride, Bromine azide

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Arsenic oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 763 mg/kg
Remarks: Behavioral:Ataxia. Diarrhoea

LD50 Oral - Mouse - 145 mg/kg
Remarks: Behavioral:Ataxia. Diarrhoea

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

IARC:	1 - Group 1: Carcinogenic to humans (Arsenic)
NTP:	Known to be human carcinogen (Arsenic)
	Known to be human carcinogen (Arsenic)
OSHA:	OSHA specifically regulated carcinogen (Arsenic)

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CG0525000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 9.9 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 3.8 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1558 Class: 6.1 Packing group: II
Proper shipping name: Arsenic
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1558 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: ARSENIC
Marine pollutant:yes

IATA
UN number: 1558 Class: 6.1 Packing group: II
Proper shipping name: Arsenic

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Arsenic	7440-38-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Arsenic	7440-38-2	2008-10-10

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H302	Harmful if swallowed.
H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 05/23/2016 Print Date: 06/23/2016

SAFETY DATA SHEET

Version 4.5
Revision Date 03/02/2015
Print Date 05/24/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Barium

Product Number : 237094
Brand : Aldrich

CAS-No. : 7440-39-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 2), H261
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H261 In contact with water releases flammable gases.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Ba
Molecular weight	:	137.33 g/mol
CAS-No.	:	7440-39-3
EC-No.	:	231-149-1

Hazardous components

Component	Classification	Concentration
Barium		
	Water-react. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H261, H315, H319, H335	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Barium oxide

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Store under inert gas.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Barium	7440-39-3	TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin, & Gastrointestinal irritation Muscular stimulation Not classifiable as a human carcinogen		

		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen		
		TWA	0.500000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: Rods

		Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 725 °C (1,337 °F) - lit.
f)	Initial boiling point and boiling range	1,640 °C (2,984 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	3.6 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Water, acids, Oxygen, Chlorinated solvents, Carbon dioxide (CO2), Halogens, Halogenated hydrocarbon, Alcohols, Sulphur compounds, Hydrogen sulfide gas

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CQ8370000

Stomach/intestinal disorders, Nausea, Vomiting, Drowsiness, Dizziness, Gastrointestinal disturbance, Weakness, Tremors, Seizures.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 500 mg/l - 96 h
	LC50 - Cyprinodon variegatus (sheepshead minnow) - > 500 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1400 Class: 4.3 Packing group: II EMS-No: F-G, S-O
Proper shipping name: BARIUM

IATA
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date

Barium	7440-39-3	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
H261	In contact with water releases flammable gases.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	1
Special hazard.I:	W

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.5 Revision Date: 03/02/2015 Print Date: 05/24/2016

POCH Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH). Creation date / last update: *2002-10-15 / 2005-04-22*

1. Identification of the substance/preparation and of the company/undertaking

BENZENE

Catalogue Numbers: *99,9% standard for GC-162500320; pure-162500426; pure p. a.-162500110; for HPLC-162503155; Pochsolv-162505156;*

Use of the substance / preparation: analitical and chemical reagent for synthesis solvent

POCH SA
44-101 Gliwice, Sowinskiego Str. 11
tel.: +48 32 23-92-381; fax: +48 32 23-92-370; e-mail: export@poch.com.pl
Emergency telephone no: +48 606-659-006

2. Hazard identification

Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

3. Composition/information on ingredients

CAS-No.: *71-43-2*

Molecular mass: *78.11*

Molecular formula: C_6H_6

WE Number: *200-753-7*

EC-Index No.: *601-020-00-8*

4. First aid measures

After eye contact: *rinse out with plenty of water with the eyelid held wide open. Call in ophtalmologist.*

After skin contact: *wash off with plenty of water. Remove contaminated clothing.*

After swallowing: *make victim drink plenty of water. Avoid vomiting (risk of aspiration). Laxative: paraffin oil (3 mg/kg), sodium sulfate (1 tablespoon 1/4 l water). Lavage of stomach only if necessary. Call in physician.*

After inhalation: *fresh air. If necessary, apply mouth- to- mouth resuscitation or mechanical ventilation.*

5. Fire-fighting measures

Suitable extinguishing media: *foam, powder*

Special risk: *combustible. Vapours heavier than air. Formation of explosive mixtures possible with air. Keep away from sources of fire. Take measures to prevent electrostatic charging. Development of hazardous gases or vapours possible in the event of fire.*

Special protective equipment for fire fighting:

Other information: *contain escaping vapoures with spray water. Do not stay in dangerous zone without self- contained breathing apparatus. Prevent fire- fighting water from entering surface water or groundwater*

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance. Contain escaping vapours with water.

6. Accidental release measures

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Take up with liquid- absorbent material. Forward for disposal. Clean up affected area. Do not allow to enter sewerage system (risk of explosion).

7. Handling and storage

Handling: *Use with adequate ventilation. Use of the basic principles of Industrial Hygiene. Use according to good industry practice. Work under hood. Do not inhale substance. Do not empty into sewerage system. Use protective equipment according to p.8. Avoid skin contact. Protect against electrostatic charges. Keep away from source od ignition.*

Storage: *tightly closed. Dry well-ventilated place. Protect from light. Keep away from sources of ignition and heat. At +15 to + 25 deg C.*

8. Exposure controls/personal protection

Specific control parameter:

Provide exhaust ventilation. Ensure the eye wash station and safety showers. Protective equipment should be selected for the working place, depending on concentration and quantity of the hazardous product handled. The resistance of the protective clothing to chemicals should be ascertained with respective supplier.

Personal protective equipment:

respiratory protection: *required when vapours/aerosols are generated - gas mask with specific absorber.*

eye protection: *required - safety goggles.*

hand protection: *required - protective clothing.*

body protection: *required - protective clothing.*

industrial hygiene: *immediately change contaminated clothing. Apply skin - protective barrier cream. Wash hands and face after working with substance.*

9. Physical and chemical properties

Form: *liquid*

Colour: *colourless*

Odour: *characteristic*

pH value: *not available*

Melting point: *5°C*

Boiling point: *80°C*

Autoignition temperature: *555°C*

Flash point: *-11°C*

Explosion limit:

lower: *1,4 Vol%*

upper: *8 Vol%*

dynamic viscosity: *(20°C): 0,66 mPa*s*

kinematical viscosity: *0,75 mm2/s*

Vapour pressure: *100 mbar (20°C)*

Density: *0,88 g/cm³ (20°C)*

Bulk density: *not applicable*

Solublity:

in water: *1,8 g/l (20°C)*

in organic solvents: *soluble*

log P(w/o): *2,65. Bioconcentration factor: 1,10.*

10. Stability and reactivity

Conditions to be avioded: *high temperature*

Substances to be avoided: *nonorganic acids, sulfur, halogen-halogen compounds, oxidizing agents, peroxide compounds, oxyhalogenic compounds, halogenic hydrocarbons, rubber.*

Hazardous decomposition products: *no information available*

Other information: *volatile in steam. Unsuitable workings materials: various plastics*

11. Toxicological information

Toxicological information: *LD50 (oral rat) 930 mg/kg, LC50 (inhalation rat) 10 000 ppm (vol.) /7h. Experience has shown this substance to be carcinogenic to man.*

Other information: *After skin contact: irritations, danger of absorption, Degreasing effect on the skin possibly followed by secondary inflammation; After swallowing: nausea and vomiting; After absorption: pain and dizziness, cardiac arrhythmia, drop in blood pressure, dyspnoea, spasms, narcosis, respiratory paralysis, death; After eye contact: irritations of mucous membranes. Carcinogenic class 1. This substance should be handled with particular care.*

12. Ecological information

Log P(w/o): 2,65. No appreciable bioaccumulation potential is to be expected. Toxicity: Fish: Onchorhynchus mykiss LC50: 5,3 mg/l/96h. C. auratus LC50: 34 mg/l/96h. Daphnia: Daphnia magma EC50: 200 mg/l/48h. Algea: Chlorella vulgaris: LC50: 530 mg/l/24h. Bacteria: Ps. putida EC10: 168 mg/l. Toxic effect on aquatic organisms. Biologic degradation: ThOD 3,1 g/g, B.O.D 10% ThOD, C.O.D. 19% ThOD. Hazard for drinking water supplies. Do not allow to enter waters, waste water or soil!

13. Disposal considerations

POCH product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Handle contaminated packing in the same way as the substrate itself. Always contact a permitted waste disposal to assure compliance with all current local, state and federal regulations.

14. Transport information

ADR Class and package group: *3,II*

UN Number: *1114*

Name (acc. to UN): *benzene*

15. Regulatory information

Labelling according to EC Directives.

Symbol: *F, T; Flammable. Toxic.*

R-phrases: *45-11-48/23/24/25; Highly flammable. May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.*

S-phrases: *53-45; In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure - obtain special instructions before use. Restricted to professional users.*

EC label.

16. Other information

Reason for alteration: general update.

Informations contained in this SDS while accurate to the best knowledge

SAFETY DATA SHEET

Version 5.4
Revision Date 04/24/2015
Print Date 05/12/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzo(a)anthracene solution

Product Number : 49477-U
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood, H373
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs (Liver, Blood) through prolonged or repeated exposure if swallowed.
H373	May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Molecular weight : 84.93 g/mol

Hazardous components

Component		Classification	Concentration
Methylene chloride			
CAS-No. EC-No. Index-No.	75-09-2 200-838-9 602-004-00-3	Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; STOT RE 2; H315, H319, H335, H336, H351, H373, H373	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Potential Occupational Carcinogen See Appendix A		
Methylene chloride	75-09-2	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Carboxyhemoglobinemia		

		Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		Substance listed; for more information see OSHA document 1910.1052		
		Substance listed; for more information see OSHA document 1910.1052		
		See Table Z-2		
		PEL	25.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		
		STEL	125.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1052 This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methylene chloride	75-09-2	Dichloromethane	0.3000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators

and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-97.0 °C (-142.6 °F)
f)	Initial boiling point and boiling range	40.0 °C (104.0 °F)
g)	Flash point	No data available
h)	Evaporation rate	0.71
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 19 %(V) Lower explosion limit: 12 %(V)
k)	Vapour pressure	470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	2.93 - (Air = 1.0)
m)	Relative density	1.32 g/cm3
n)	Water solubility	slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 1.25
p)	Auto-ignition temperature	556.1 °C (1,033.0 °F) 662.0 °C (1,223.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	2.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks. Exposure to sunlight.

10.5 Incompatible materials
Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium, Strong acids and strong bases, Vinyl compounds

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 2,000 mg/kg

LC50 Inhalation - Rat - 52,000 mg/m3

LD50 Dermal - Rat - > 2,000 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h
(Draize Test)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irritating to eyes. - 24 h
(Draize Test)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Rat
DNA damage

Carcinogenicity

Carcinogenicity - Rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors.

Limited evidence of carcinogenicity in animal studies

Suspected human carcinogens

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)
NTP:	Reasonably anticipated to be a human carcinogen (Methylene chloride)
OSHA:	OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system
Oral - May cause damage to organs through prolonged or repeated exposure. - Liver, Blood

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood., Acts as a simple asphyxiant by displacing air., anesthetic effects, Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Effects due to ingestion may include:, Gastrointestinal discomfort, Central nervous system depression, Paresthesia., Drowsiness, Convulsions, Conjunctivitis., Pulmonary edema. Effects may be delayed., Irregular breathing., Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes., Weakness, Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material., Abdominal pain

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h
	NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability: Result: < 26 % - Not readily biodegradable. (OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1593 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: DICHLOROMETHANE, SOLUTION

IATA

UN number: 1593 Class: 6.1 Packing group: III
Proper shipping name: Dichloromethane, solution

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
Methylene chloride	75-09-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benz[a]anthracene	56-55-3	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01
Benz[a]anthracene	56-55-3	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methylene chloride	75-09-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	56-55-3	2007-09-28
Benz[a]anthracene		
Methylene chloride	75-09-2	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 04/24/2015 Print Date: 05/12/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 12/29/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Beryllium

Product Number : 378135
Brand : Aldrich

CAS-No. : 7440-41-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H301 Toxic if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H350 May cause cancer.

H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Be
Molecular weight	:	9.01 g/mol
CAS-No.	:	7440-41-7
EC-No.	:	231-150-7

Hazardous components

Component	Classification	Concentration
Berylium foil		
	Acute Tox. 3; Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 1B; STOT SE 3; STOT RE 1; H301, H315, H317, H319, H330, H335, H350, H372	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Beryllium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Berylium foil	7440-41-7	TWA	2.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		CEIL	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Peak	25.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	2.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
	Remarks	Z27.29-1970		
		CEIL	5.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization Chronic beryllium disease (berylliosis) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	2.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization		

		Chronic beryllium disease (berylliosis) Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		C	0.0005 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,278 °C (2,332 °F) - lit.
f)	Initial boiling point and boiling range	2,970 °C (5,378 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.85 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Alkali metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intravenous - Rat - 0.496 mg/kg
Remarks: Liver:Hepatitis (hepatocellular necrosis), zonal.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Hamster
Lungs
Result: negative

Carcinogenicity

Carcinogenicity - Rat - Intratracheal
Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Lungs, Thorax, or Respiration:Bronchiogenic carcinoma.

Carcinogenicity - Rabbit - Intravenous
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Musculoskeletal:Tumors.

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Berylium foil)
NTP:	Known to be human carcinogen (Berylium foil)
	Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Berylium foil)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: DS1750000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium, powder
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1567 Class: 6.1 (4.1) Packing group: II EMS-No: F-G, S-G
Proper shipping name: BERYLLIUM POWDER

IATA
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium powder

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Berylium foil	7440-41-7	2008-10-10

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	3
Reactivity Hazard:	3

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 13-Sep-2013 **Revision Date** 21-Jul-2015 **Revision Number** 2

1. Identification

Product Name **Chromium**

Cat No. : **C318-500**

Synonyms Chrome

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3

Label Elements

Signal Word
Warning

Hazard Statements
May cause respiratory irritation

Precautionary Statements
Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Chromium	7440-47-3	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media Carbon dioxide (CO2)

Flash Point Not applicable
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Chromium oxide
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Avoid dust formation. Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium	TWA: 0.5 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 250 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1857.2 °C / 3375 °F

Boiling Point/Range	2640 °C / 4784 °F
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Relative Density	7.2
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cr
Molecular Weight	51.996

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Sensitive to air.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents, Strong acids

Hazardous Decomposition Products Chromium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause irritation of respiratory tract

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium	7440-47-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium	Not listed	LC50: 14.3 mg/l/96 H (Pimephales promelas)	Not listed	EC50: 0.07 mg/l/48 H

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Proper technical name** Chromium
- **Hazard Class** 9
- **Packing Group** III

TDG Not regulated

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Hazard Class** 9
- **Packing Group** III

IATA

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium	X	X	-	231-157-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium	7440-47-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chromium	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2B Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 13-Sep-2013
Revision Date 21-Jul-2015
Print Date 21-Jul-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 13-Sep-2013 **Revision Date** 21-Jul-2015 **Revision Number** 2

1. Identification

Product Name **Chromium**

Cat No. : **C318-500**

Synonyms Chrome

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3

Label Elements

Signal Word
Warning

Hazard Statements
May cause respiratory irritation

Precautionary Statements
Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Chromium	7440-47-3	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media Carbon dioxide (CO2)

Flash Point Not applicable
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Chromium oxide
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Avoid dust formation. Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium	TWA: 0.5 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 250 mg/m³ TWA: 0.5 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Chromium	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1857.2 °C / 3375 °F

Boiling Point/Range	2640 °C / 4784 °F
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Relative Density	7.2
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cr
Molecular Weight	51.996

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Sensitive to air.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents, Strong acids

Hazardous Decomposition Products Chromium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause irritation of respiratory tract

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Chromium	7440-47-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Chromium	Not listed	LC50: 14.3 mg/l/96 H (Pimephales promelas)	Not listed	EC50: 0.07 mg/l/48 H

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Proper technical name** Chromium
- **Hazard Class** 9
- **Packing Group** III

TDG Not regulated

- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
- **Hazard Class** 9
- **Packing Group** III

IATA

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO

- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Chromium	X	X	-	231-157-5	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Chromium	7440-47-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Chromium	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Chromium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Chromium	5000 lb 10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Chromium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2B Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 13-Sep-2013
Revision Date 21-Jul-2015
Print Date 21-Jul-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 5.10
Revision Date 06/02/2016
Print Date 07/04/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : PCBs - WS

Product Number : QC1579
Brand : Sigma-Aldrich

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Repeated exposure may cause skin dryness or cracking.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Acetone			
CAS-No. EC-No. Index-No. Registration number	67-64-1 200-662-2 606-001-00-8 01-2119471330-49-XXXX	Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336	>= 90 - <= 100 %
Aroclor 1254			
CAS-No. Index-No.	11097-69-1 602-039-00-4	Acute Tox. 4; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H373, H410	< 0.1 %
Aroclor 1016			
CAS-No. Index-No.	12674-11-2 602-039-00-4	STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H373, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store at Room Temperature.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Acetone	67-64-1	TWA	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation 2015 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	750.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation 2015 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	1,000.000000 ppm 2,400.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

		TWA	250.000000 ppm 590.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		STEL	750 ppm 1,780 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	3,000 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	500 ppm 1,200 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Aroclor 1254	11097-69-1	TWA	0.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Liver damage Chloracne Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		PEL	0.5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
Aroclor 1016	12674-11-2	TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Acetone	67-64-1	Acetone	50.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Acetone	25 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)

		End of shift (As soon as possible after exposure ceases)

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	56 °C (133 °F) at 1,013 hPa (760 mmHg)
g)	Flash point	-17 °C (1 °F) - closed cup - Solvent
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 13 %(V) Lower explosion limit: 2 %(V)
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available

p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence
Skin - Dermatitis - Based on Human Evidence
Kidney - Irregularities - Based on Human Evidence
Skin - Dermatitis - Based on Human Evidence
Nerves. - (Aroclor 1260)
Stomach - Irregularities - Based on Human Evidence (Aroclor 1254)
Stomach - Irregularities - Based on Human Evidence (PCB - Aroclor 1221)
Stomach - Irregularities - Based on Human Evidence (Aroclor 1248)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1090 Class: 3 Packing group: II
Proper shipping name: Acetone, solution
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1090 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ACETONE, SOLUTION

IATA
UN number: 1090 Class: 3 Packing group: II
Proper shipping name: Acetone, solution

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01
Aroclor 1254	11097-69-1	1993-04-24
Aroclor 1242	53469-21-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Acetone	67-64-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Aroclor 1260	11096-82-5	2008-08-01
Aroclor 1254	11097-69-1	1990-06-30
PCB - Aroclor 1221	11104-28-2	2008-08-01
Aroclor 1232	11141-16-5	2008-08-01
Aroclor 1248	12672-29-6	2008-08-01
Aroclor 1016	12674-11-2	2008-08-01
Aroclor 1242	53469-21-9	2008-08-01

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No.	Revision Date
Aroclor 1260	11096-82-5	2008-08-01
Aroclor 1254	11097-69-1	1990-06-30
PCB - Aroclor 1221	11104-28-2	2008-08-01
Aroclor 1232	11141-16-5	2008-08-01
Aroclor 1248	12672-29-6	2008-08-01
Aroclor 1016	12674-11-2	2008-08-01
Aroclor 1242	53469-21-9	2008-08-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.10 Revision Date: 06/02/2016 Print Date: 07/04/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 05/24/2016
Print Date 06/21/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Thallium

Product Number : 277932
Brand : Aldrich
Index-No. : 081-001-00-3

CAS-No. : 7440-28-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H300 + H330 Fatal if swallowed or if inhaled
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P284 Wear respiratory protection.

P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Tl
Molecular weight	:	204.38 g/mol
CAS-No.	:	7440-28-0
EC-No.	:	231-138-1
Index-No.	:	081-001-00-3

Hazardous components

Component	Classification	Concentration
Thallium		
	Acute Tox. 2; Aquatic Acute 3; Aquatic Chronic 3; H300 + H330, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Thallium	7440-28-0	TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Alopecia Adopted values or notations enclosed are those for which changes are proposed in the NIC 2010 Revision or addition to the notice of intended changes See Notice of Intended Changes (NIC) Danger of cutaneous absorption		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage 2015 Adoption Danger of cutaneous absorption		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage Danger of cutaneous absorption varies		

		TWA	0.1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral neuropathy Gastrointestinal damage Danger of cutaneous absorption varies		
		TWA	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		PEL	0.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: granular Colour: light grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 303 °C (577 °F) - lit.
f)	Initial boiling point and boiling range	1,457 °C (2,655 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Air sensitive.

10.5 Incompatible materials

Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - thallium oxides

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Possible risk of congenital malformation in the fetus.

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: XG3425000

The most characteristic symptom of thallium exposure is alopecia (loss of hair). Cutaneous effects may include dry, scaly skin and impairment of nail growth often resulting in the appearance of crescent-shaped strips across fingernails and toenails (Mees' line). Other symptoms in acute poisoning relate chiefly to the gastrointestinal tract, nervous system, skin, eyes, and cardiovascular system. Acute poisoning results in swelling of the feet and legs, arthralgia, vomiting, insomnia, hyperesthesia and paresthesia of the hands and feet, mental confusion, polyneuritis with severe pain in the legs and loins, partial paralysis of the legs, angina-like pains, nephritis, wasting and weakness, and lymphocytosis and eosinophilia. In chronic poisoning, central and peripheral nervous system abnormalities may persist including ataxia, tremor, incoordination, paralysis of extremities, endocrine disorders, memory loss, and psychoses

may develop., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinodon variegatus (sheepshead minnow) - 21.0 mg/l - 96.0 h
	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 14.0 mg/l - 96.0 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3288 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, inorganic, n.o.s. (Thallium)
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3288 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Thallium)

IATA
UN number: 3288 Class: 6.1 Packing group: II
Proper shipping name: Toxic solid, inorganic, n.o.s. (Thallium)

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date

Thallium	7440-28-0	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Thallium	7440-28-0	2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H300	Fatal if swallowed.
H300 + H330	Fatal if swallowed or if inhaled

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 05/24/2016 Print Date: 06/21/2016

SAFETY DATA SHEET

Version 5.8
Revision Date 10/12/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Zinc
Product Number	:	96454
Brand	:	Sigma-Aldrich
CAS-No.	:	7440-66-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Combustible dust,
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

	May form combustible dust concentrations in air
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : Zn
Molecular weight : 65.39 g/mol

Hazardous components

Component		Classification	Concentration
Zinc powder (stabilized)			
CAS-No. EC-No. Index-No.	7440-66-6 231-175-3 030-001-01-9	Aquatic Acute 1; Aquatic Chronic 1; H410	<= 100 %
Zinc oxide			
CAS-No. EC-No. Index-No.	1314-13-2 215-222-5 030-013-00-7	Aquatic Acute 1; Aquatic Chronic 1; H410	>= 5 - < 10 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Special powder against metal fire Dry sandUse water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
Water

5.2 Special hazards arising from the substance or mixture

Zinc/zinc oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Zinc oxide	1314-13-2	TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	metal fume fever		
		STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		metal fume fever		

		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		C	15.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	Not applicable
e)	Melting point/freezing point	Melting point/range: 420 °C (788 °F) - lit.
f)	Initial boiling point and boiling range	907 °C (1,665 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	May form combustible dust concentrations in air
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	Not applicable
l)	Vapour density	No data available
m)	Relative density	7.133 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	Not applicable
p)	Auto-ignition temperature	does not ignite
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	During processing, dust may form explosive mixture in air.
t)	Oxidizing properties	No data available

9.2 Other safety information

Bulk density	1.8 - 3.2 kg/m3

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Dust may form explosive mixture in air.

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Acids and bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available (Zinc powder (stabilized))

Inhalation: No data available (Zinc powder (stabilized))

Dermal: No data available (Zinc powder (stabilized))

No data available (Zinc powder (stabilized))

Skin corrosion/irritation
No data available (Zinc powder (stabilized))

Serious eye damage/eye irritation
No data available (Zinc powder (stabilized))

Respiratory or skin sensitisation
Did not cause sensitisation on laboratory animals. (Zinc powder (stabilized))

Germ cell mutagenicity
No data available (Zinc powder (stabilized))

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available (Zinc powder (stabilized))

No data available (Zinc powder (stabilized))

Specific target organ toxicity - single exposure
No data available (Zinc powder (stabilized))

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (Zinc powder (stabilized))

Additional Information
RTECS: ZG8600000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Effects due to ingestion may include:, chills, dry throat, sweet taste, Fever, Cough, Nausea, Vomiting, Weakness, Contact with eyes or skin may cause:, Irritation (Zinc powder (stabilized))

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 450 µg/l - 96 h (Zinc powder (stabilized))
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 0.068 mg/l - 48 h (Zinc powder (stabilized))
	mortality NOEC - Daphnia (water flea) - 0.101 - 0.14 mg/l - 7 d (Zinc powder (stabilized))

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation	Algae - 7 d at 16 °C - 5 µg/l (Zinc powder (stabilized))
	Bioconcentration factor (BCF): 466

12.4 Mobility in soil

No data available (Zinc powder (stabilized))

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Zinc powder (stabilized))
Reportable Quantity (RQ): 1020 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder (stabilized))
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Zinc powder (stabilized))

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Zinc oxide	1314-13-2	2007-03-01
Zinc powder (stabilized)	7440-66-6	1993-04-24

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Zinc powder (stabilized)	7440-66-6	1993-04-24
Zinc oxide	1314-13-2	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

	May form combustible dust concentrations in air
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 10/12/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 3.20
Revision Date 02/26/2015
Print Date 05/13/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Chloroform

Product Number : 02487
Brand : Sigma-Aldrich
Index-No. : 602-006-00-4

CAS-No. : 67-66-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Specific target organ toxicity - repeated exposure (Category 1), Liver, Kidney, H372
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.

H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure.
H402	Harmful to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Trichloromethane Methylidyne trichloride
Formula	:	$CHCl_3$
Molecular weight	:	119.38 g/mol
CAS-No.	:	67-66-3
EC-No.	:	200-663-8
Index-No.	:	602-006-00-4
Registration number	:	01-2119486657-20-XXXX

Hazardous components

Component	Classification	Concentration
Chloroform		
	Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H315, H319, H331, H336, H351, H361, H372, H402	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Move out of dangerous area.Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Chloroform	67-66-3	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Liver damage Embryo/fetal damage Confirmed animal carcinogen with unknown relevance to humans		
		ST	2.000000 ppm 9.780000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		C	50.000000 ppm 240.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -63 °C (-81 °F)
f)	Initial boiling point and boiling range	60.5 - 61.5 °C (140.9 - 142.7 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	213.3 hPa (160.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.492 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 1.97
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	27.1 mN/m at 20.0 °C (68.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
2-Methyl-2-butene (0.003 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Strong bases, Magnesium, Sodium/sodium oxides, Lithium

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LD50 Oral - Rat - 908 mg/kg
Remarks: Behavioral:Change in motor activity (specific assay). Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory stimulation.

Inhalation: No data available

LOEC Inhalation - Rat - male - 6 h - 500 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irritating to eyes. - 24 h

Respiratory or skin sensitisation
Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Carcinogenicity

Carcinogenicity - Rat - Oral
Tumorigenic:Carcinogenic by RTECS criteria. Leukaemia

The National Cancer Institute (NCI) has found clear evidence for carcinogenicity. Limited evidence of a carcinogenic effect.

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Chloroform)
NTP:	Reasonably anticipated to be a human carcinogen (Chloroform)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Suspected of damaging the unborn child. Suspected human reproductive toxicant

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1. - Liver, Kidney

Aspiration hazard
No data available

Additional Information
RTECS: FS9100000

Vomiting, Gastrointestinal disturbance, Exposure to and/or consumption of alcohol may increase toxic effects.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - 162 mg/l - 48 h
	LC100 - Leuciscus idus (Golden orfe) - 220 mg/l - 48 h
	LC50 - other fish - 97 mg/l - 96 h
	LC50 - Danio rerio (zebra fish) - 121 mg/l - 96 h
	NOEC - Oryzias latipes - 122 mg/l - 10 d
	NOEC - Oncorhynchus mykiss (rainbow trout) - 24 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 79.00 mg/l - 24 h
	Immobilization EC50 - Daphnia magna (Water flea) - 51.6 mg/l - 48 h
	NOEC - Daphnia magna (Water flea) - 120 mg/l - 11 d
Toxicity to algae	EC50 - No information available. - 500.00 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Bioaccumulation	Lepomis macrochirus (Bluegill) - 14 d - 0.11 mg/l
	Bioconcentration factor (BCF): 6

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: Chloroform
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1888 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: CHLOROFORM

IATA
UN number: 1888 Class: 6.1 Packing group: III
Proper shipping name: Chloroform

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

New Jersey Right To Know Components

	CAS-No.	Revision Date
Chloroform	67-66-3	2008-11-03

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Chloroform	CAS-No. 67-66-3	Revision Date 2011-09-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 67-66-3	Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.20 Revision Date: 02/26/2015 Print Date: 05/13/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 03/02/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Cobalt
Product Number	:	266639
Brand	:	Aldrich
Index-No.	:	027-001-00-9
CAS-No.	:	7440-48-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves.
P285	In case of inadequate ventilation wear respiratory protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/

physician.

P363	Wash contaminated clothing before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Co
Molecular weight	:	58.93 g/mol
CAS-No.	:	7440-48-4
EC-No.	:	231-158-0
Index-No.	:	027-001-00-9

Hazardous components

Component	Classification	Concentration
Cobalt		
	Resp. Sens. 1; Skin Sens. 1; Aquatic Chronic 4; H317, H334, H413	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Cobalt/cobalt oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Air sensitive. Handle and store under inert gas. Keep in a dry place.
Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cobalt	7440-48-4	TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		

		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans varies		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Cobalt	7440-48-4	Cobalt	15.0000 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			
		Cobalt	1.0000 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Cobalt	15 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Cobalt	1 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: light grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,493 - 1,495 °C (2,719 - 2,723 °F)
f)	Initial boiling point and boiling range	2,900 °C (5,252 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	8.9 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	log Pow: 5.0
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Air

10.5 Incompatible materials
Oxidizing agents, Mineral acidsAcetylene, Hydrazinium nitrate, Strong oxidizing agents, Material readily reacts with acids generating flammable and/or explosive hydrogen gas.

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 7,510 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 15 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Ames test
S. typhimurium
Result: negative

OECD Test Guideline 474
Mouse - male and female
Result: negative

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

2A - Group 2A: Probably carcinogenic to humans (Cobalt)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity - Rat - male and female - inhalation (dust/mist/fume)
RTECS: GF8750000

Kidney injury may occur., Damage to the eyes., Lung irritation, Throat., Rash, Vomiting, Diarrhoea

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96.0 h
Toxicity to algae	Remarks: No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3089 Class: 4.1 Packing group: II
Proper shipping name: Metal powders, flammable, n.o.s.
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 3089 Class: 4.1 Packing group: II EMS-No: F-G, S-G
Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

IATA
UN number: 3089 Class: 4.1 Packing group: II
Proper shipping name: Metal powder, flammable, n.o.s.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Cobalt	7440-48-4	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Chronic	Chronic aquatic toxicity
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H413	May cause long lasting harmful effects to aquatic life.
Resp. Sens.	Respiratory sensitisation
Skin Sens.	Skin sensitisation

HMIS Rating
Health hazard: 0
Chronic Health Hazard: *

Flammability:	3
Physical Hazard	3

NFPA Rating

Health hazard:	0
Fire Hazard:	3
Reactivity Hazard:	3

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 03/02/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 04/24/2015
Print Date 06/20/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vanadium

Product Number : 262935
Brand : Aldrich

CAS-No. : 7440-62-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : V
Molecular weight : 50.94 g/mol
CAS-No. : 7440-62-2
EC-No. : 231-171-1

Hazardous components

Component	Classification	Concentration
Vanadium		
		<= 100 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Vanadium/vanadium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vanadium	7440-62-2	TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing	Melting point/range: 1,890 °C (3,434 °F) - lit.

	point	
f)	Initial boiling point and boiling range	3,380 °C (6,116 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	10.67 hPa (8.00 mmHg) at 20 °C (68 °F)
l)	Vapour density	No data available
m)	Relative density	6.11 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Rat - Intramuscular
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: YW1355000

metallic taste, greenish-black discoloration of the tongue, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vanadium	7440-62-2	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 04/24/2015 Print Date: 06/20/2016

SAFETY DATA SHEET

Version 5.7
Revision Date 03/02/2016
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Naphthalene

Product Number : 184500
Brand : Aldrich
Index-No. : 601-052-00-2

CAS-No. : 91-20-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H228 Flammable solid.
H302 Harmful if swallowed.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{10}H_8C_{10}H_8$
Molecular weight	:	128.17 g/mol
CAS-No.	:	91-20-3
EC-No.	:	202-049-5
Index-No.	:	601-052-00-2

Hazardous components

Component	Classification	Concentration
Naphthalene		
	Flam. Sol. 2; Acute Tox. 4; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H228, H302, H351, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Naphthalene	91-20-3	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Hemolytic anemia Upper Respiratory Tract irritation Cataract Confirmed animal carcinogen with unknown relevance to humans		

		Danger of cutaneous absorption		
		TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Hematologic effects Upper Respiratory Tract irritation Eye irritation Eye damage Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		STEL	15.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Hematologic effects Upper Respiratory Tract irritation Eye irritation Eye damage Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	10.000000 ppm 50.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	10.000000 ppm 50.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	15.000000 ppm 75.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 ppm 50 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	15 ppm 75 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 ppm 50 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	10 ppm 50 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	15 ppm 75 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Naphthalene	91-20-3	1-Naphthol + 2-Naphthol			ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: flakes, granules Colour: white
b)	Odour	aromatic
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 80 - 82 °C (176 - 180 °F) - lit.
f)	Initial boiling point and boiling range	218 °C (424 °F) - lit.
g)	Flash point	80.0 °C (176.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available

j)	Upper/lower flammability or explosive limits	Upper explosion limit: 5.9 %(V) Lower explosion limit: 0.9 %(V)
k)	Vapour pressure	1.3 hPa (1.0 mmHg) at 53.0 °C (127.4 °F) 0.04 hPa (0.03 mmHg) at 25.0 °C (77.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.085 g/cm3 at 24.7 °C (76.5 °F)
n)	Water solubility	0.0308 g/l at 25 °C (77 °F) - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 3.4 at 25 °C (77 °F)
p)	Auto-ignition temperature	526.0 °C (978.8 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	1.05 mm2/s at 81.5 °C (178.7 °F) -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	31.8 mN/m at 100.0 °C (212.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 490.0 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - > 0.4 mg/l
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation

Respiratory or skin sensitisation
Maximisation Test - Guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Rat - male
Result: negative

Carcinogenicity

Carcinogenicity - Rat - male and female - inhalation (vapour)
Tumorigenic:Tumors at site or application.

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Naphthalene)
NTP:	Reasonably anticipated to be a human carcinogen (Naphthalene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity	Rat - male and female - Oral - NOAEL : 100 mg/kg - LOAEL : 400 mg/kg - OECD Test Guideline 408

RTECS: QJ0525000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Naphthalene is retinotoxic and systemic absorption of its vapors above 15ppm, may result in:, cataracts, optic neuritis, corneal injury, Eye irritation, Ingestion may provoke the following symptoms:, hemolytic anemia, hemoglobinuria, Nausea, Headache, Vomiting, Gastrointestinal disturbance, Convulsions, anemia, Kidney injury may occur., Seizures., Coma.

Heart -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 7.9 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 2.16 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d

Result: 2 % - Not readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation Fish

Bioconcentration factor (BCF): 427 - 1,158

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1334 Class: 4.1 Packing group: III
Proper shipping name: Naphthalene, crude
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 1334 Class: 4.1 Packing group: III EMS-No: F-A, S-G
Proper shipping name: NAPHTHALENE, CRUDE
Marine pollutant:yes

IATA

UN number: 1334 Class: 4.1 Packing group: III
Proper shipping name: Naphthalene, crude

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Naphthalene	91-20-3	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Naphthalene	91-20-3	1990-01-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Flam. Sol.	Flammable solids
H228	Flammable solid.
H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	2
Physical Hazard	2

NFPA Rating

Health hazard:	2
Fire Hazard:	2
Reactivity Hazard:	2

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.7 Revision Date: 03/02/2016 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 3.12
Revision Date 12/02/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Mercury

Product Number : 215457
Brand : Sigma-Aldrich
Index-No. : 080-001-00-0

CAS-No. : 7439-97-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Inhalation (Category 2), H330
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H330 Fatal if inhaled.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Hg
Molecular weight	:	200.59 g/mol
CAS-No.	:	7439-97-6
EC-No.	:	231-106-7
Index-No.	:	080-001-00-0

Hazardous components

Component	Classification	Concentration
Mercury		
	Acute Tox. 2; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H330, H360, H372, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Mercury/mercury oxides.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. In some instances, a mercury spill kit may be used. Please consult with your site EHS representative to determine the most appropriate clean up method.Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Mercury	7439-97-6	C	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	Potential for dermal absorption		

		CEIL	1.0mg/10m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	0.05 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		Skin notation		
		TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Mercury	7439-97-6	Mercury	0.0400 mg/g	In urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Mercury	15.0000 µg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: silver, white
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -38.87 °C (-37.97 °F) - lit.
f)	Initial boiling point and boiling range	356.6 °C (673.9 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F) 1 hPa (1 mmHg) at 126 °C (259 °F)
l)	Vapour density	6.93 - (Air = 1.0)
m)	Relative density	13.55 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.00006 g/l at 25 °C (77 °F)
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	6.93 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Ammonia, Azides, Nitrates, Chlorates, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LC50 Inhalation - Rat - male - 2 h - < 27 mg/m3

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Mercury)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Presumed human reproductive toxicant

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: OV4550000

Mercury accumulates in almost all tissues, especially in the:, Kidney, Effects due to ingestion may include:, Nausea, Vomiting, Diarrhoea, intestinal bleeding

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LC50 - Cyprinus carpio (Carp) - 0.160 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

Bioaccumulation	Carassius auratus (goldfish) - 1,789 d - 0.25 µg/l
	Bioconcentration factor (BCF): 155,986

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: A,W Mercury
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2809 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B
Proper shipping name: MERCURY
Marine pollutant:yes

IATA
UN number: 2809 Class: 8 (6.1) Packing group: III
Proper shipping name: Mercury

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Mercury	7439-97-6	2013-12-20

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H330	Fatal if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.12 Revision Date: 12/02/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 02/27/2015
Print Date 05/24/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Copper

Product Number : 12816
Brand : Aldrich

CAS-No. : 7440-50-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Cu
Molecular weight : 63.55 g/mol
CAS-No. : 7440-50-8
EC-No. : 231-159-6

Hazardous components

Component	Classification	Concentration
Copper		
		<= 100 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Copper oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Air sensitive.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Copper	7440-50-8	TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Irritation Gastrointestinal metal fume fever		
		TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Irritation Gastrointestinal metal fume fever		
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Foil Colour: light red
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,083.4 °C (1,982.1 °F)
f)	Initial boiling point and boiling range	2,567 °C (4,653 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	8.940 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids, Strong oxidizing agents, Acid chlorides, Halogens

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Mouse - 3.5 mg/kg

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: GL5325000

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Copper	7440-50-8	1989-08-11

New Jersey Right To Know Components

	CAS-No.	Revision Date
Copper	7440-50-8	1989-08-11

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 02/27/2015 Print Date: 05/24/2016

SAFETY DATA SHEET

Version 4.7
Revision Date 12/28/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Nickel

Product Number : 268259
Brand : Aldrich
Index-No. : 028-002-00-7

CAS-No. : 7440-02-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), H372
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and

	understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Ni
Molecular weight	:	58.69 g/mol
CAS-No.	:	7440-02-0
EC-No.	:	231-111-4
Index-No.	:	028-002-00-7

Hazardous components

Component	Classification	Concentration
Nickel		
	Skin Sens. 1; Carc. 2; STOT RE 1; Aquatic Acute 3; Aquatic Chronic 3; H317, H351, H372, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nickel/nickel oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Nickel	7440-02-0	TWA	1.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Dermatitis Pneumoconiosis Not suspected as a human carcinogen		
		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

		TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermatitis Pneumoconiosis Not suspected as a human carcinogen		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.015 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Foil Colour: white, silver, metallic
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,453 °C (2,647 °F) - lit.
f)	Initial boiling point and boiling range	2,732 °C (4,950 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	1 hPa (1 mmHg) at 1,810 °C (3,290 °F)
l)	Vapour density	No data available
m)	Relative density	8.9 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
acids, Oxidizing agents, Sulphur compounds, Hydrogen gas, Oxygen, Methanol, organic solvents, Aluminium, Fluorine, Ammonia

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
May cause sensitisation by skin contact.

Germ cell mutagenicity
No data available

Carcinogenicity

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
	1 - Group 1: Carcinogenic to humans (Nickel)
	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
IARC:	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
	1 - Group 1: Carcinogenic to humans (Nickel)
	2B - Group 2B: Possibly carcinogenic to humans (Nickel)
NTP:	Reasonably anticipated to be a human carcinogen (Nickel)
	Reasonably anticipated to be a human carcinogen (Nickel)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: QR5950000

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 1.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1 mg/l - 48 h

12.2 Persistence and degradability
Not applicable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Nickel	7440-02-0	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Nickel	7440-02-0	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7 Revision Date: 12/28/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 03/05/2015
Print Date 05/13/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : DDT-Endrin Mix

Product Number : 48282
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Specific target organ toxicity - single exposure (Category 1), H370
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H370	Causes damage to organs.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P307 + P311	IF exposed: Call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Methanol			
CAS-No. EC-No. Index-No. Registration number	67-56-1 200-659-6 603-001-00-X 01-2119433307-44-XXXX	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	>= 90 - <= 100 %
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane			
CAS-No. EC-No. Index-No.	50-29-3 200-024-3 602-045-00-7	Acute Tox. 3; Carc. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311, H351, H372, H410	< 0.1 %
Endrin			
CAS-No. EC-No. Index-No.	72-20-8 200-775-7 602-051-00-X	Acute Tox. 1; Acute Tox. 2; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310, H410	< 0.1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Headache Nausea Dizziness Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		STEL	250.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Headache Nausea Dizziness Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		TWA	200.000000 ppm 260.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		ST	250.000000 ppm 325.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		TWA	200.000000 ppm 260.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methanol	67-56-1	Methanol	15.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	9.7 °C (49.5 °F) - closed cup - Solvent
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available

p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Acids, Oxidizing agents, Alkali metals, Acid chlorides, Acid anhydrides, Reducing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Methyl alcohol may be fatal or cause blindness if swallowed., Cannot be made non-poisonous., Effects due to ingestion may include:, Nausea, Dizziness, Gastrointestinal disturbance, Weakness, Confusion., Drowsiness, Unconsciousness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence
Pancreas. - (1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane)
Central nervous system - (Endrin)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol
Reportable Quantity (RQ): 2000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1230 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D
Proper shipping name: METHANOL

IATA

UN number: 1230 Class: 3 (6.1) Packing group: II
Proper shipping name: Methanol

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	1993-04-24
Endrin	72-20-8	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	1993-04-24
Endrin	72-20-8	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. 1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	CAS-No. 50-29-3	Revision Date 2008-06-17
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Methanol	CAS-No. 67-56-1	Revision Date 2012-03-16
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane	50-29-3	2008-06-17
Endrin	72-20-8	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H300 + H310	Fatal if swallowed or in contact with skin
H301	Toxic if swallowed.

H301 + H311	Toxic if swallowed or in contact with skin
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H401	Toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/05/2015 Print Date: 05/13/2016

SAFETY DATA SHEET

Version 4.8
Revision Date 05/24/2016
Print Date 07/04/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichloroethylene

Product Number : 46267
Brand : Sigma-Aldrich
Index-No. : 602-027-00-9

CAS-No. : 79-01-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	TCE Trichloroethene
Formula	:	C_2HCl_3
Molecular weight	:	131.39 g/mol
CAS-No.	:	79-01-6
EC-No.	:	201-167-4
Index-No.	:	602-027-00-9

Hazardous components

Component	Classification	Concentration
Trichloroethylene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Skin Irrit. 2; Eye Irrit. 2A; Muta. 2; Carc. 1B; STOT SE 3; Aquatic Acute 3; Aquatic Chronic 3; H315, H319, H336, H341, H350, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Handle and store under inert gas.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichloroethylene	79-01-6	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		STEL	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		Potential Occupational Carcinogen See Appendix C See Appendix A		
		See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		Peak	300.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		TWA	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		CEIL	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		Peak	300 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		STEL	100 ppm 537 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		C	300 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	25 ppm 135 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Trichloroethylene	79-01-6	Trichloroacetic acid	15.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)

	Remarks	End of shift at end of workweek			
		Trichloroethanol	0.5000 mg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In end-exhaled air	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -84.8 °C (-120.6 °F) - lit.
f)	Initial boiling point and boiling range	86.7 °C (188.1 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 10.5 %(V) Lower explosion limit: 8 %(V)
k)	Vapour pressure	81.3 hPa (61.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.463 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 2.29log Pow: 5
p)	Auto-ignition temperature	410.0 °C (770.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Oxidizing agents, Strong bases, Magnesium

10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 4,920 mg/kg

LC50 Inhalation - Mouse - 4 h - 8450 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Trichloroethylene)
NTP:	Reasonably anticipated to be a human carcinogen (Trichloroethylene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KX4550000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h

	LOEC - other fish - 11 mg/l - 10.0 d
	NOEC - Oryzias latipes - 40 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1710 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TRICHLOROETHYLENE

IATA
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Trichloroethylene	CAS-No. 79-01-6	Revision Date 2011-09-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Trichloroethylene	CAS-No. 79-01-6	Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H402	Harmful to aquatic life.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.8 Revision Date: 05/24/2016 Print Date: 07/04/2016

APPENDIX D

COMMUNITY AIR MONITORING PLAN

Community Air Monitoring Plan

1510 Broadway Dry Cleaner Site
1510 Broadway
Brooklyn, NY 11221
BCP # C224280

1.0 INTRODUCTION

This document presents a Community Air Monitoring Plan (CAMP) for the remedial investigation (RI) for the proposed development at 1510 Broadway, Brooklyn, New York.

The Site, which is the subject of this RIWP, is approximately 0.46-acres. The Site properties are identified as Block 1489 Lots 6 & 11-18. An application to merge these nine lots into one lot with the address 1510 Broadway has been submitted to the City for processing. The Site is depicted on a United States Geological Survey (USGS) Topographic Map (Figure 2.1) and Survey Map (Figure 2.2).

The Site is bounded by Broadway, Hancock Street, Saratoga Avenue, and Jefferson Avenue. The elevated subway is located above Broadway (J and Z lines), and the MTA Halsey Street Station is adjacent to site. The surrounding area is predominantly residential and commercial in use, with some institutional uses. Currently, the Site is vacant and enclosed by construction fencing. There is one small garage building on the BCP Site, which will be demolished.

1.1 OBJECTIVES

The objective of this CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise as a result of the planned remedial excavation and construction, which may include temporary soil stockpiling.

1.2 METHODS

The CAMP will include monitoring for particulate matter (e.g., airborne “dust”) during the planned remedial excavation and construction activities. Readings will be recorded and will be available for State (DEC and DOH) personnel to review, as requested.

1.3 PARTICULATE MONITORING

When deemed by SESI to be applicable, particulate (e.g. “dust”) emissions will be measured continuously at the upwind and downwind work zone boundaries. Real time monitoring equipment (e.g. Trak TSI Dust monitors or equivalent), with audible alarms and capable of measuring particulate matter less than 10 micrometers in size (PM-10), will be used. If the wind is calm, the monitors should be placed between each work area and the nearest sensitive receptors. If the wind is variable, the monitors must be placed accordingly to ensure there is a monitor downwind of each work area at all times. Air monitoring locations will be selected daily based on prevailing wind conditions and specific locations where field-work is to be conducted on a daily basis.

- If the downwind particulate level is 100 micrograms per cubic meter (ug/m3) greater than background (upwind) for a 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression provided that downwind particulate levels do not exceed 150 ug/m3 above upwind levels and provided that no visible dust is migrating from the work area.
- If, after dust suppression techniques, downwind particulate levels are greater than 150 ug/m3 above upwind levels, work will be stopped, and a re-evaluation of activities will be initiated. Work will resume, provided that dust suppression measures and other controls are successful in reducing downwind particulate concentrations to within 150 ug/m3 of the upwind level and in preventing visible dust migration.
- All readings must be recorded and be available for State (NYSDEC and NYSDOH) and County Health personnel to review.

1.4 VOC MONITORING

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate

surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

APPENDIX E

CITIZENS PARTICIPATION PLAN

NEW YORK
STATE OF
OPPORTUNITY.

Department of
Environmental
Conservation

Brownfield Cleanup Program

Citizen Participation Plan
for
1510 Broadway Dry Cleaner Site

November 2018

C224280
1510 Broadway
Brooklyn, NY 11221

Contents

Section **Page Number**

1. What is New York's Brownfield Cleanup Program? 3

2. Citizen Participation Activities..... 3

3. Major Issues of Public Concern..... 9

4. Site Information..... 9

5. Investigation and Cleanup Process 9

Appendix A - Project Contacts and Locations of Reports and Information 13

Appendix B - Site Contact List..... 14

Appendix C - Site Location Map..... 20

Appendix D - Brownfield Cleanup Program Process..... 21

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **1510 Broadway LLC c/o The Macquesten Companies ("Applicant")**
Site Name: **1510 Broadway Dry Cleaner Site ("Site")**
Site Address: **1510 Broadway**
Site County: **Kings County**
Site Number: **C224280**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
http://www.dec.ny.gov/chemical/8450.html .

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision-makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- Residents, owners, and occupants of the site and properties adjacent to the site;
- The public water supplier which services the area in which the site is located;
- Any person who has requested to be placed on the site contact list;
- The administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See http://www.dec.ny.gov/chemical/61092.html .

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The

flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at
http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

There will be areas on the Site where soil excavation is necessary. Therefore, once the remediation commences, there may be concerns regarding odors, noise or truck traffic coming from the Site. However, these impacts will be mitigated through implementation of a Health and Safety Plan and Soil Management Plan approved by the Department, which will be designed to minimize these impacts. A Community Air Monitoring Plan will also be implemented to monitor dust and vapors to ensure the community is not impacted.

The Site is located in an Environmental Justice Area. Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities.

The Site is located in an area with a sizable African-American population. There is no need to translate future fact sheets into another language.

For additional information, visit:
https://statisticalatlas.com/tract/New-York/Kings-County/037500/Race-and-Ethnicity

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

- **location – 1510 Broadway, Brooklyn, NY (Tax Block 1489, Lots 6, 11, 12, 13, 14, 15, 16, 17, and 18)**
- **setting – urban, suburban**
- **site size – 0.4605 acres**
- **adjacent properties – residential, commercial**

History of Site Use, Investigation, and Cleanup

Historical Sanborn maps indicated the property was developed with four three-story buildings used as offices and storefronts by 1888. Nine additional four-story commercial buildings were developed by 1908 and by 1932, two additional buildings occupied the site. The property had the following former industrial and commercial uses that are likely to have contributed to contamination: dry cleaners, dress manufacturer/dying facility, printer, and watch and jewelry repair. The address may have changed over time and the following uses were either on the property or immediately adjacent to it: a paint and oils store at 1522 Broadway on a 1932 map, a dry cleaner at 7 Saratoga Avenue from approximately 1949 to 1965,a cleaning and dying facility at 1520 Broadway in 1928, a dress house/dress manufacturer at 1520 Broadway in 1934, a printer at 1516 Broadway in 1934, and watch and jewelry repair at 1510 Broadway in 1949. Industrial, automotive, and dry-cleaning uses were also noted in the surrounding area including garages with gasoline tanks to the south/west, substations to the south- and northwest, a chemical and bleach bottling facility to the northwest, a paint manufacturer, and a dry cleaner approximately 250 feet south-southwest of the Site.

These historic uses have contributed to the on-Site contamination. Perchloroethylene (more commonly known as PCE or PERC) is a cleaning product used by dry cleaners, which is present in groundwater and soil vapor, and which likely resulted from on-Site dry-cleaning operation. Petroleum related compounds are also present, which likely result from the former on-Site garages. The Site soils also consist of contaminated historic fill brought to the Site from other locations to level the ground surface, which was a common historic practice.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for residential purposes. It is not yet known if unrestricted or restricted residential use standards will be achieved subsequent to the remediation.

To achieve either of these residential cleanup goals, the Applicant will conduct investigation and cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation workplan, which is subject to public comment.

The site investigation has several goals:

1) Define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) Identify the source(s) of the contamination;
3) Assess the impact of the contamination on public health and the environment; and
4) Provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant submits a draft "Remedial Investigation Work Plan" to NYSDEC for review and approval. NYSDEC makes the draft plan available to the public review during a 30-day public comment period.

When the investigation is complete, the Applicant will prepare and submit a report that summarizes the results. This report also will recommend whether cleanup action is needed to address site-related contamination. The investigation report is subject to review and approval by NYSDEC.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a "significant threat," it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to

represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a "Certificate of Completion" (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a "Remedial Work Plan". The Remedial Work Plan describes the Applicant's proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a Final Engineering Report (FER) that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the FER. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A -
Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Sarah Quandt
Project Manager
NYSDEC
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233
Tel: 518-402-9767
Email: Sarah.quandt@dec.ny.gov

Thomas V. Panzone
Public Participation Specialist
NYSDEC Region 2
Division of Environmental Remediation
1 Hunter's Point Plaza – 1st Floor
47-40 21st Street
Long Island City, NY 11101
Tel: 718-482-4953
Email: Thomas.panzone@dec.ny.gov

New York State Department of Health (NYSDOH):

Justin Deming
NYSDOH
Bureau of Environmental Exposure
Investigation
Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
Tel: 518-402-7860
Email: BEEI@health.ny.gov

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Brooklyn Public Library The Saratoga Branch 8 Thomas S. Boyland Street Attn: Linda Johnson Phone: 718-230-2100	Brooklyn Community Board No. 16 Attn: Genese T. Morgan, Chairman Viola Greene-Walker, District Manager Ms. Balinda Harris – Environmental Committee

Hours: Mon-Thurs 9am-9pm Fri-Sat 9am-6pm Sunday 1pm-5pm	444 Thomas Boyland Street, Rm. 103 Brooklyn, NY 11212 Phone: 718-385-0323 Hours: Call for hours

Appendix B - Site Contact List

Federal Government Officials	
Hon Charles Schumer U.S. Senate 780 Third Avenue, Suite 2301 New York, NY 10017	Hon. Kristen Gillibrand U.S. Senate 780 Third Avenue, Suite 2601 New York, NY 10017
Local Government Officials	
Hon. Hakeem Jeffries U.S. House of Representatives 55 Hanson Place, Suite 603 Brooklyn, NY 11217	Hon. Martin Malave Dilan New York State Senate 3215 Fulton Street Brooklyn, NY 11208
Nancy T. Sunshine Kings County Clerk 360 Adams Street, Room 189 Brooklyn, NY 11201	Hon. Eric Adams Kings County Executive (Borough President) Borough Hall 209 Joralemon Street Brooklyn, NY 11201
Marisa Lago Commissioner, NYC Dept. of City Planning 120 Broadway, 31st Floor New York, NY 10271	Hon. Bill de Blasio Mayor of New York City City Hall New York, NY 10007
Andrea Hagelgans Strategic Planning Advisor, New York City City Hall New York, NY 10007 Hon. Latrice Monique Walker	Hon. Scott Stringer NYC Comptroller 1 Centre Street New York, NY 10007

NYS Assemblywoman 400 Rockaway Avenue, 2nd Floor Brooklyn, NY 11212	
Hon. Letitia James Public Advocate 1 Centre Street New York, NY 10007	Mark McIntyre, Director NYC Office of Environmental Remediation 100 Gold Street - 2nd Floor New York, NY 10038
Julie Stein Office of Environmental Assessment & Planning NYC Dept. of Environmental Protection 96-05 Horace Harding Expressway Flushing, NY 11373	Hon. Alicka Ampry-Samuel NYC Councilwoman 400 Rockaway Avenue Brooklyn, NY 11212
Public Water Supply	
Vincent Sapienza New York City Public Water Supply System Department Commissioner 59-17 Junction Blvd. Flushing, NY 11373	Alfonso Carney Chair of New York City Water Board 59-17 Junction Blvd., 8th Floor Flushing, NY 11373
Local News Media	
David Kirschner Brooklyn Media Outlet - News 12 1 Media Crossways Woodbury, NY 11791	Park Slope Courier Media Outlet 1 Metrotech Center North Brooklyn, NY 11201
Spectrum NY 1 News 75 Ninth Avenue New York, NY 10011	Brooklyn Daily Eagle 16 Court Street, Suite 1208 Brooklyn, NY 11241
New York Post 1211 Avenue of the Americas New York, NY 10036	New York Daily News 4 New York Plaza New York, NY 10004
Courier-Life Publications 1 Metro-Tech Center North - 10th Floor Brooklyn, NY 11201	The Brooklyn Papers 1 Metrotech Center, Suite 1001 Brooklyn, NY 11201
Schools and Day Care Facilities	
April Davis Director, Brightside Academy Early Education and Child Care	Traditional Educational Center 1469 BROADWAY Brooklyn, NY11221

1491 Broadway Brooklyn, NY 11221	
HCHC INC. 1441 Broadway Brooklyn, NY11221	Little Angels Day Care 1068 Putnam Ave Brooklyn, NY 11221
Hancock Group Family Daycare Inc 868 Hancock St Brooklyn, NY 11233	Brooklyn High School for Law & Technology 1396 Broadway Brooklyn, NY 11221
Adjacent Property Owners	
NYC Housing Preservation & Dev. Adj. Property Owner of 1531 Broadway 100 Gold Street New York, NY 10038	Intra-Brokerage Association Against Points, Inc. Adj. Property Owner of 1517 Broadway 2314 Pitkin Avenue Brooklyn, NY 11202
1533 Realty, L.L.C. Adj. Property Owner of 1533 Broadway C/O Rita Woldenberg, et al Sacks Press & Lacher PC 600 3rd Avenue, 18th Floor New York, NY 10016	Key Food Adj. Operator of 1533 Broadway 1533 Broadway Brooklyn, NY 11221
Rebuilt Realty Corp. Adj. Property Owner of 1534 Broadway 57-52 49th Place Maspeth, NY 11378	Broadway Medical Center Adj. Operator of 1534 Broadway 1534 Broadway Brooklyn, NY 11221
Kings Realty & Properties LLC Adj. Property Owner of 956 Hancock Street 543 Bedford Avenue # 194 Brooklyn, NY 11211	Kraus Farm Vintage Adj. Operator of 956 Hancock Street 956 Hancock Street Brooklyn, NY 11233
NYC Housing Authority Adj. Property Owner of 946 Hancock Street 250 Broadway, 9th floor New York, NY 10038	Saratoga Village Community Center Adj. Operator of 940 Hancock Street 940 Hancock Street Brooklyn, NY 11233
Beauty Plus Beauty Supply Store Broadway Adj. Operator of 901-925 Halsey Street 901-925 Halsey Street Brooklyn, NY 11233	NYC Housing Authority Adj. Property Owner of 33 Saratoga Avenue 250 Broadway, 9th floor New York, NY 10038
Anthony Brown Adj. Property Owner of 932 Hancock Street	Maria and Allyson Serrano Adj. Property Owner of 937 Hancock Street

932 Hancock Street Brooklyn, NY 11233	937 Hancock Street Brooklyn, NY 11233
Top Cats Barbershop Adj. Operator of 14 Saratoga Avenue 14 Saratoga Avenue Brooklyn, NY 11233	Tong Quan Wong Adj. Property Owner of 992 Jefferson Avenue 992 Jefferson Avenue Brooklyn, NY 11221
Bravo Gourmet Deli Adj. Operator of 10 Saratoga Avenue 10 Saratoga Avenue Brooklyn, NY 11233	NYC Housing Authority Adj. Property Owner of 1019-947 Jefferson Avenue 250 Broadway, 9th floor New York, NY 10038
NYC Transit Authority Adj. Operator of 1019-947 Jefferson Avenue 2 Broadway New York, NY 10004	Broadway Bushwick Builders, L.P. Adj. Property Owner of 1485 Broadway 515 Madison Avenue Floor 22 New York, NY 10022
1487 Broadway LLC Adj. Property Owner of 1487 Broadway 1274 49th Street, Suite 443 Brooklyn, NY 11219	City Bear Coffee & Wine Adj. Operator of 1487 Broadway 1487 Broadway Brooklyn, NY 11211
JSB Realty Associates LLC Adj. Property Owner of 1491 Broadway 15 Ocean Avenue Brooklyn, NY 11225	Brightside Academy Adj Operator of 1491 Broadway 1491 Broadway Brooklyn, NY 11221
Little Caesar's Pizza Adj. Operator of 1491 Broadway 1491 Broadway Brooklyn, NY 11221	Kim Corrado Adj. Property Owner of 1499 Broadway 1499 Broadway Brooklyn, NY 11221
Naziemul Safi Adjacent Property Owner of 17 Saratoga Avenue 17 Saratoga Avenue Brooklyn, NY 11233	
Community, Civic, Religious and Other Environmental Organizations	
Saratoga Square NC 930 Halsey Street Brooklyn, NY11233	Saratoga Avenue Community Center 940 Hancock St Brooklyn, NY 11233
Antonia Yuille - Director Consolidated Edison Corporate Affairs 30 Flatbush Avenue Brooklyn, NY 11217	Anthony Newerls - President 73rd Police Precinct Council 1470 East New York Brooklyn, NY 11212
Ladder 116 FDNY	New York City Housing Authority's Saratoga Square

37-20 29 STREET Long Island City, NY 11101	55 Saratoga Ave Brooklyn, NY 11233
New York City Housing Authority 930 Halsey St Brooklyn, NY 11233	Church of God of Prophecy 1243 Bushwick Ave Brooklyn, NY 11221
First Calvary Baptist Church 953 Putnam Ave Brooklyn, NY 11221	The Salvation Army Brooklyn Bushwick Corps Community Center 1151 Bushwick Ave Brooklyn, NY 11221

Appendix C- Site Location Map

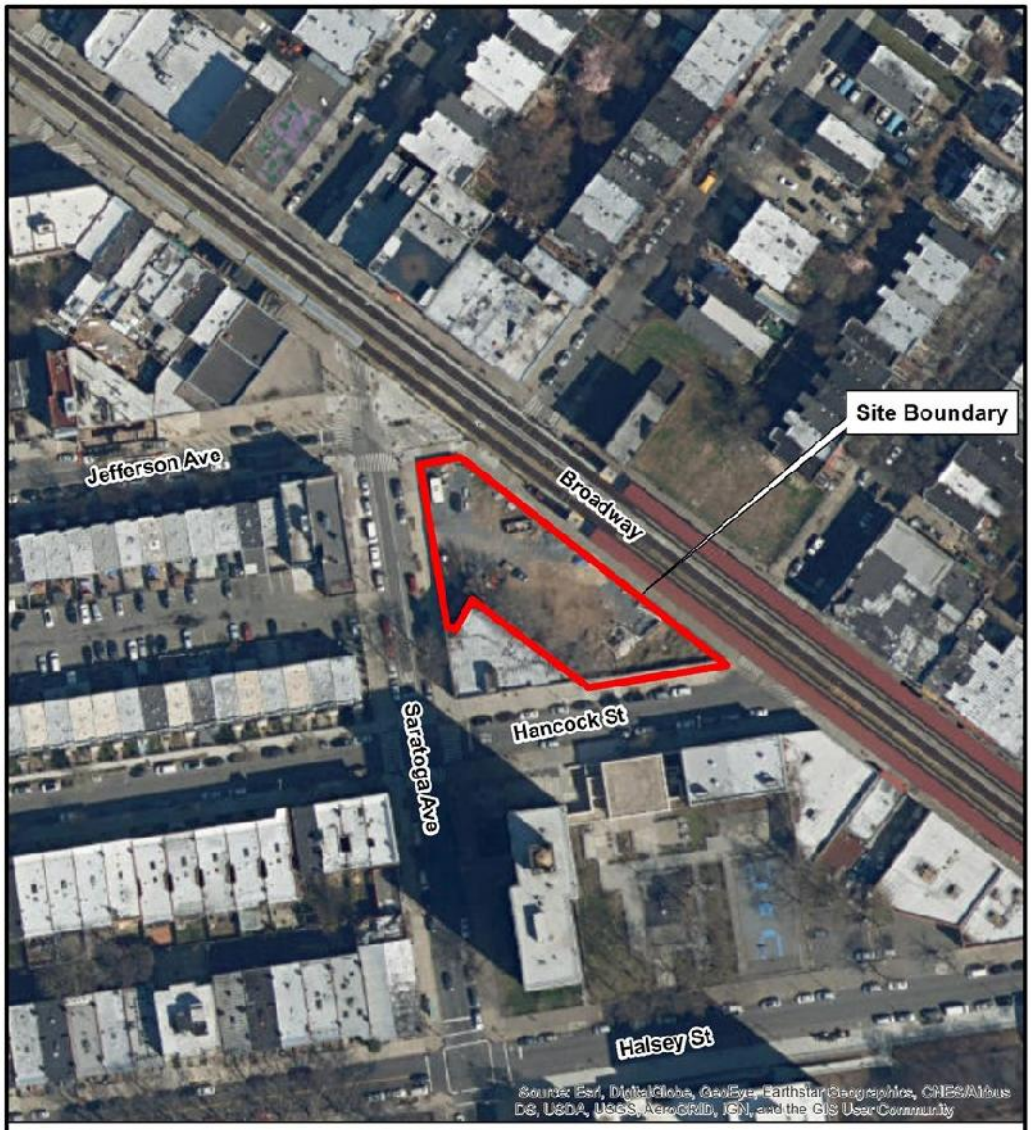
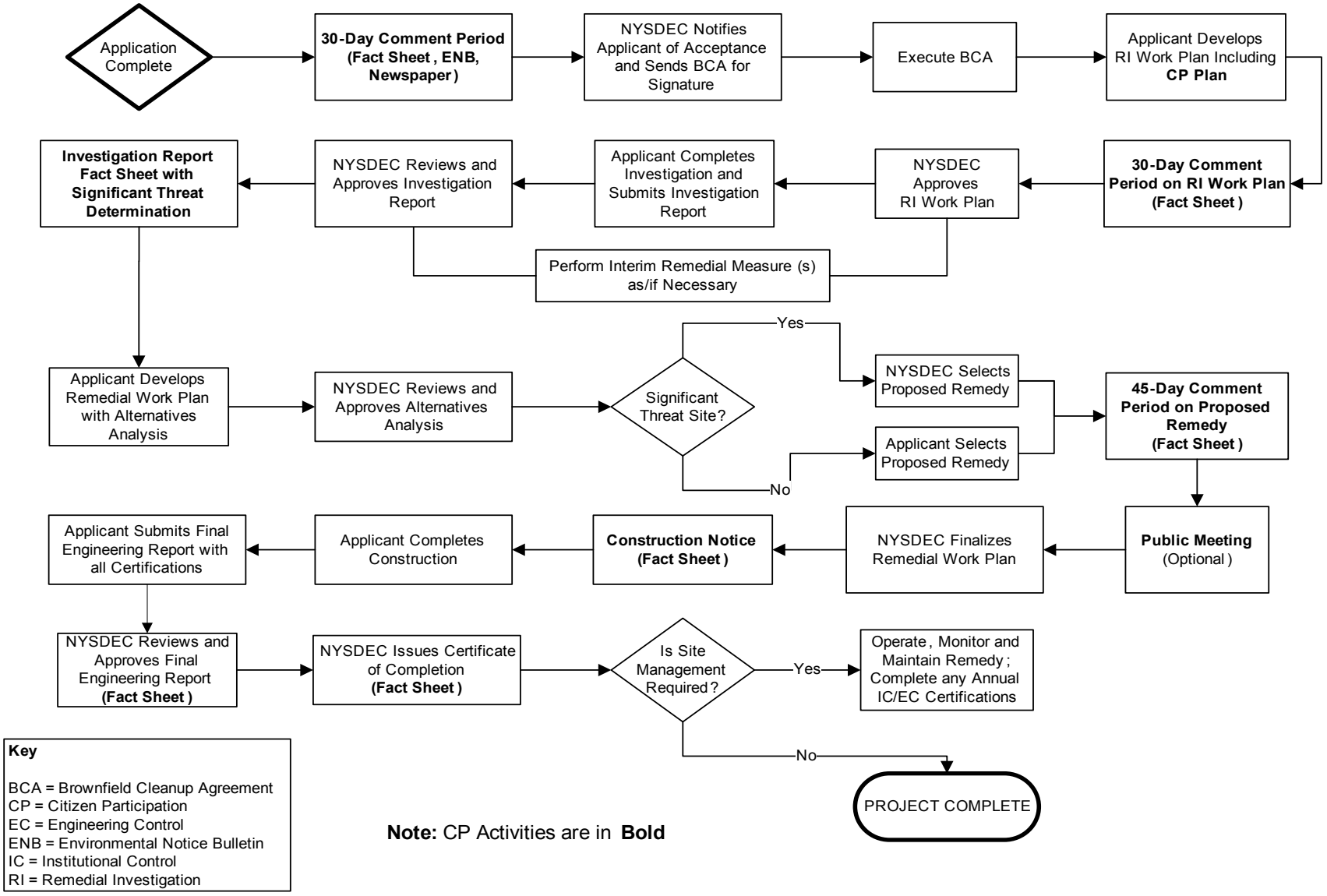


Figure 1
Site Map

1510 Broadway Dry Cleaners
Brooklyn, NY
Site No. C224280

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

APPENDIX F

GROUNDWATER SAMPLING PLAN FOR EMERGING CONTAMINANTS

1510 BROADWAY LLC

BROOKLYN, NEW YORK

GROUNDWATER SAMPLING PLAN FOR EMERGING CONTAMINANTS

NYSDEC BCP Site Number: C224280

Prepared for:

1510 Broadway LLC c/o The Macquesten Companies
438 Fifth Ave Suite 100
Pelham, New York 10803

Prepared by:

SESI CONSULTING ENGINEERS, D.P.C.
12A Maple Avenue
Pine Brook, NJ 07058

DECEMBER 12, 2018

1.0 EMERGING CONTAMINANTS SAMPLING PLAN

This sampling plan is for groundwater sampling at the 1510 Broadway LLC BCP Site located in Brooklyn, New York. SESI will collect ground water samples from six (6) groundwater monitoring wells as shown in Figure 3.2 of the IRM/RIWP.

The sampling will be performed in accordance with the NYSDEC March 1991 Sampling Guidelines and Protocols, with materials limitations for Per- and polyfluoroalkyl substances (PFAS) sampling. The groundwater samples will be sent via chain of custody in a cooler at 4 degrees C to Test America Laboratories, which is ELAP-certified, and analyzed for TCL/TAL+30, 1,4-dioxane and the PFAS compounds listed in Table 1. The groundwater samples will be analyzed for PFAS using Modified USEPA Method 537. Reporting limits for PFOA and PFOS will not exceed 2 nanogram per liter (ng/L). Category B deliverables and an electronic data deliverable will be completed. A DUSR will be prepared by a data validator for all the analyses including PFAS and 1,4-dioxane. The method detection limit (MDL) for 1,4-dioxane will be no higher than 0.28 µg/l (ppb). In order to get the appropriate detection limit, the lab will run EPA method 8270 in "selective ion monitoring" (SIM) mode for 1.4-dioxane.

PFAS are very persistent in the environment and in the human body. There is evidence that exposure to PFAS can lead to adverse human health effects. EPA established the health advisory levels for PFAS in drinking water at 70 parts per trillion. Due to their presence in a variety of products, persistence in the environment and very low drinking water standards, care must be used when groundwater sampling for PFAS to avoid cross contamination from the sampling equipment and personal protective equipment (PPE).

No fabric softener will be used on clothing to be worn in field. Cosmetics, moisturizers, hand cream, unauthorized sunscreen, insect repellant or other related products will not be used the morning of sampling. The field samplers will wear nitrile gloves while filling and sealing the sample bottles. The sampling equipment components and sample containers will not come in contact with material that may potentially contain PFAS such as aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials will be avoided. Food and drink packaging materials will be avoided, as well.

Sampling will be performed using either stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate or polypropylene pump and tubing which do not contain

PFAS. Standard two step decontamination using Alconox® detergent and clean water rinse will be performed for equipment that does come in contact with PFAS materials. No waterproof field books, plastic clipboards, binders, or spiral hard cover will be used for PFAS containers. No adhesives (i.e. Post-It® Notes), sharpies, or permanent markers will be used for PFAS containers. The PFAS containers will be labeled with ball point pens. PFAS samples will be stored in separate cooler filled with regular ice only with no chemical (blue) ice packs.

Pre-cleaned sample bottles with closures, coolers, sample labels and a chain of custody form will be provided by Test America. The ground water samples will be collected using low flow purging to obtain representative turbid free samples. The sampling event will include inspection and gauging each well for depth to water and total depth. If free product is detected in a monitoring well, the product thickness will be measured and recorded. Wells, which contain free product, will not be sampled.

The pumping flow rate will be in the range of 100 to 500 ml/min. Field parameters will be measured using a flow through cell before, during and after low flow purging including dissolved oxygen, pH, temperature, and conductivity. The field purging information and parameter data will be recorded on the field parameter sheets. The depth to groundwater will also be recorded throughout the purging process and ideally will not drawdown more than 0.3 foot. The samples will be collected directly from the low flow purging tubing by disconnecting the flow through cell. Two pre-cleaned laboratory supplied 500 ml HDPE or polypropylene bottles will be collected for PFAS analysis first prior to collecting the samples for other analyses. Additional bottles will be supplied by the laboratory for the TCL/TAL+30 and 1,4-dioxane analysis.

Equipment blanks will be collected daily, if the equipment that come in touch with the sample is de-contaminated and re-used. If all the sampling material are disposable, no field blanks will be collected. Field duplicate will be collected on a frequency of 1/20 samples. One matrix spike and
matrix spike duplicate (MS/MSD) will also be collected on a frequency of 1/20 samples. A trip blank will accompany each shipment which includes analysis for volatile organic compounds.

Table 1: PFAS compounds list*

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

*Table source is the letter from DEC addressing the sampling of the emerging contaminant dated June 15, 2018.

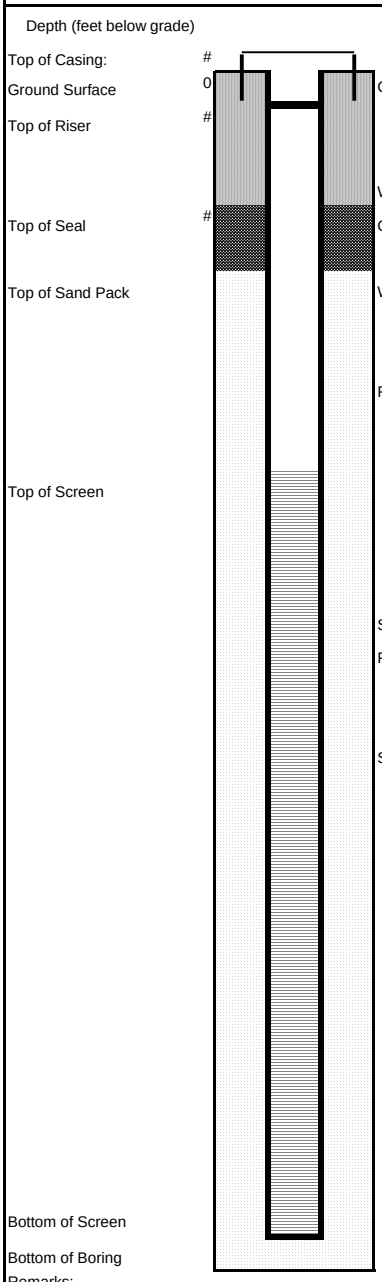
APPENDIX G

TYPICAL BORING/WELL CONSTRUCTION LOG

SESI CONSULTING ENGINEERS	PROJECT NAME:		MONITORING WELL NO.	
	PROJECT LOCATION:		JOB NO.	
			GROUND ELEVATION:	

BORING BY:	DATE STARTED		DEVELOPMENT PERIOD		INSIDE CASING DIAMETER (in)	
INSPECTOR:	DATE COMPLETED		DEVELOPMENT METHOD		BOREHOLE DIAMETER (in)	
NJ DEP PERMIT NO.:	DATE DEVELOPED		DEVELOPMENT RATE	# gpm	INITIAL WATER LEVEL (ft):	

WELL CONSTRUCTION	DEPTH (ft)	Sample	Blows on Spoon 0/6	6/12	12/18	18/24	REC (in)	SOIL DESCRIPTION AND STRATIFICATION	P.I.D.
	0								



Approximate Change in Strata: _____ Inferred Change in Strata: _ _ _ _ _ _ _ _ _ _ _ _

The subsurface information shown hereon was obtained for the design and estimating purposes for our client. It is made available to authorized users only that they may have access to the same information available to our client. It is presented in good faith, but it is not intended as a substitute for investigations, interpretations or judgment of such authorized users. Information on the logs should not be relied upon without the geotechnical engineers recommendations contained in the report from which these logs were extracted. Soil descriptions represent a field identification after D. M. Burmister unless otherwise noted.