149 Kent Avenue KINGS COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C224159

Prepared for: KENT & WYTHE OWNERS LLC 149 Kent Avenue Williamsburg Kings County, New York

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LIST OF ACRONYMS

μg/kg	Micrograms per Kilogram
μg/L	Micrograms per Liter
$\mu g/m^3$	Micrograms per Cubic Meter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per liter
40 CFR	Title 40 of the Code of Federal Regulations
1,2-DCE	cis-1,2-dichloroethene
trans-12 DCE	trans-1,2-dichloroethene
4,4'-DDE	4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDD	4,4-Dichlorodiphenyldichloroethane
4,4'-DDT	4,4-Dichlorodiphenyltrichloroethane
1,1,1-TCA	1,1,1 trichloroethane
AAR	Alternatives Analysis Report
AOCs	Areas of Concern
ARARs	Applicable or Relevant and Appropriate Requirements
AS/SVE	Air Sparging/Soil Vapor Extraction
AWQSGVs	Ambient Water Quality Standards and Guidance Values
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bffs	Below Former Floor Slab
bls	Below Land Surface
CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Certificate of Completion
CP-51	Commissioner Policy-51
CPP	Citizen Participation Plan
CVOCs	Chlorinated Volatile Organic Compounds
DEC	Department of Environmental Conservation
DER-10	NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation
DNAPL	Dense Non Aqueous Phase Liquid
DUSR	Data Usability Summary Report
ECs	Engineering Controls

LIST OF ACRONYMS (Continued)

ECD	Electron Capture Device
ELAP	Environmental Laboratory Approval Program
EVO	Emulsified Vegetable Oil
FEMA	Federal Emergency Management Agency
Ft	Feet/Foot
FER	Final Engineering Report
GAC	Granular Activated Carbon
GWP	Groundwater Profile
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
ICs	Institutional Controls
HDPE	High Density Polyethylene
MIP	Membrane Interface Probe
MW	Monitoring Well
NOD	Natural Oxidant Demand
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene (Perchloroethene)
PF	Pneumatic Fracturing
PID	Photo Ionization Detector
POTW	Publicly Owned Treatment Works
PRB	Permeable Reactive Barrier
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RAOs	Remedial Action Objectives

LIST OF ACRONYMS (Continued)

RAWP	Remedial Action Work Plan
RCA	.Recycled Concrete Aggregate
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
ROI	.Radius of Influence
SCG	.Standards, Criteria and Guidance
SCOs	.Soil Cleanup Objectives
SEQRA	State Environmental Quality Review Act
SMP	.Site Management Plan
SOE	.Support of Excavation
SoMP	.Soil Management Plan
SSDS	.Sub-Slab Depressurization System
SVI	.Soil Vapor Intrusion
	1
SVOCs	.Semivolatile Organic Compounds
SVOCs TAGM	.Semivolatile Organic Compounds .Technical and Administrative Memorandum
SVOCs TAGM TAL	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List
SVOCs TAGM TAL TCLP	Semivolatile Organic Compounds .Technical and Administrative Memorandum .Target Analyte List .Toxicity Characteristics Leaching Procedure
SVOCs TAGM TAL TCLP TBCs	Semivolatile Organic Compounds .Technical and Administrative Memorandum .Target Analyte List .Toxicity Characteristics Leaching Procedure .To Be Considered
SVOCs TAGM TAL TCLP TBCs TCE	Semivolatile Organic Compounds .Technical and Administrative Memorandum .Target Analyte List .Toxicity Characteristics Leaching Procedure .To Be Considered .Trichloroethene
SVOCs TAGM TAL TCLP TBCs TCE TOC	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS TPH	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS TPH UIC	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons Underground Injection Control
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS UIC USEPA	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons Underground Injection Control United States Environmental Protection Agency
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS UIC USEPA USGS	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons Underground Injection Control United States Environmental Protection Agency United States Geological Survey
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS UIC USEPA USGS VC	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons Underground Injection Control United States Environmental Protection Agency United States Geological Survey Vinyl Chloride
SVOCs TAGM TAL TCLP TBCs TCE TOC TOGS TPH UIC USGS VC VOCs	Semivolatile Organic Compounds Technical and Administrative Memorandum Target Analyte List Toxicity Characteristics Leaching Procedure To Be Considered Trichloroethene Total Organic Carbon Technical and Operational Guidance Series Total Petroleum Hydrocarbons Underground Injection Control United States Environmental Protection Agency United States Geological Survey Vinyl Chloride Volatile Organic Compounds

CERTIFICATION STATEMENT

I, Noelle Clarke, P.E., certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Noelle M. Clarke, P.E. NYS Professional Engineer #072491 <u>August 14, 2015</u> Date



1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This document is required as an element of the remedial program at 149 Kent Avenue in Brooklyn, New York (hereinafter referred to as the "site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index #C224159-06-12, site #C224159, which was executed on August 21, 2012.

1.1.1 General

Kent & Wythe Owners LLC/ 149 Kent Avenue LLC/ The Western Carpet and Linoleum Co. Inc. entered into a BCA with the NYSDEC to remediate a 0.92 acre property located in Williamsburg, Kings County, Brooklyn, New York. This BCA required the Remedial Party, Kent & Wythe Owners LLC/ 149 Kent Avenue LLC/ The Western Carpet and Linoleum Co. Inc. (collectively, Volunteer), to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this 0.92-acre site is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement (Appendix A).

After completion of the remedial work described in the Remedial Action Work Plan (RAWP), some contamination was left in the subsurface at this site, which is hereafter referred to as "remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Roux Associates, Inc./ Remedial Engineering, P.C. (Roux Associates), on behalf of the Volunteer, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing

the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Kings County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC).
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index #C224159-06-12; Site #C224159) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

This section provides a description and history of the site.

1.2.1 Site Location and Description

The site is located in the Williamsburg neighborhood County of Kings, New York and is identified as Block 2333 and Lot 1on the Kings County Tax Map. The site is an approximately 0.92-acre area bounded by multi-use commercial/ residential buildings to the north, North 5th Street to the south, Wythe Avenue to the east, and Kent Avenue to the west (see Figure 2). The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement in Appendix A.

1.2.2 Site History

According to a review of Sanborn Fire Insurance maps, the earliest noted development at the site occurred sometime prior to 1887. A building was under construction and rail road tracks ran across the entire property at this time. Sometime between 1887 and 1905 the site was improved with a three-story rail terminal that covered the entire site. The terminal no longer shows up in the 1942 Sanborn map. A rail loading dock was present on the northwestern portion of the site between 1942 and 1979 according to Sanborn maps. This rail loading dock was located at the property line and was connected by several doors to the adjacent building at 135 Kent Avenue

and was the only structure located in the northwestern portion of the site at the time (the threestory rail terminal is no longer shown).

Beginning in 1987, the site was improved with a one and two-story loft. Western Carpet & Linoleum Co. Inc. owned the site since 1985 and occupied the site from 1987 until 2011 as a carpet warehouse. The warehouse was vacant from 2011 until its demolition in January 2014.

The current adjacent property owner and former leasee/operator at 135 Kent Avenue, Mr. Lester Cohen, stated during a June 17, 2013 meeting/conference call at the NYSDEC offices that his operation (dating back to 1958) used the former rail loading dock, but did not receive bulk chemical shipments by rail and that the former rail loading dock was not used to transfer chemicals from rail cars to their building (but it was used for storage). The data suggest, however, that what the NYSDEC considers to be "source material" (chlorinated volatile organic compound [CVOC] contamination in soil) is present on the 135 Kent Avenue property and the former rail loading dock. The extremely high detections of tetrachloroethene (PCE) in soil vapor samples taken from the upgradient side of the 135 Kent Avenue property in the sidewalk of North 6th Street, over 100 feet from the property boundary between 149 and 135 Kent Avenue, strongly point to the likely presence of additional source material on the 135 Kent Avenue site.

Redevelopment Plan

For this site, the redevelopment plan includes a seven story mixed use (retail, commercial, residential) building with a ventilated parking garage located in the basement and part of the first floor, and retail and/or retail storage in remaining portions of the basement level. The building will encompass the entire footprint of the property and therefore there will be no exposed soil present. Construction of the proposed building began in 2014.

1.2.3 Geologic Conditions

The Remedial Investigation (RI) was completed in 2013 when the former warehouse still occupied the site. Many of the RI, waste characterization and confirmation/ documentation samples are identified by their depth below the former warehouse's floor slab. For the sake of clarity, in this SMP depths will be referenced to both the former floor slab and to the Brooklyn Borough Topographic/ Highway Datum. (All elevations discussed hereafter are referenced to

the Brooklyn Borough Topographical/ Highway Datum.) The former floor slab was located at +16 feet elevation.

Soil below the former floor slab (bffs) at the site consisted of approximately six (6) feet of fill materials mixed with fine to course sand, silt and gravel, followed by approximately ten (10) feet of dark brown fine to medium sand with trace of gravel and silts, followed by silt layers alternating with layers of sand and gravel to approximately seventy (70) feet bffs. Beneath this, a continuous clay/silt confining unit is identified consistently across the entire site ranging in depth from approximately 68 to 70 feet bffs. Bedrock was not encountered during the RI. Depth to water at the site ranges from approximately +2.8 to +6.7 foot elevation. Groundwater on the site flows in the west-southwest direction toward the East River, located approximately 500 feet from the subject site. The regional groundwater flow direction is southwest. Geologic sections are shown in Plates 1 and 2. A groundwater flow figure is shown in Figure 3.

1.3 Summary of Remedial Investigation Findings

A RI was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following reports:

- "Remedial Investigation Report" dated August 5, 2013; and
- RAWP dated December 7, 2013.

Generally, the RI determined that the primary constituents of concern at the site included the volatile organic compounds (VOCs) PCE and its degradation products [trichloroethene (TCE), cis-1,2-dichloroethene (1,2-DCE) and vinyl chloride (VC)] in soil, groundwater and soil vapors. In addition, constituents of historic fill including semivolatile organic compounds (SVOCs) and metals (including lead, hexavalent chromium and mercury) were detected in soil. The entire site is a reclaimed rail yard and historic fill was present across the entire site. The fill was approximately six (6) feet thick beneath the former floor slab of the site. There were some pesticides in soil, presumably from use during railroad operations.

Two areas of PCE contamination in soil and groundwater existed on the site. One hot spot was located in the vicinity of the former loading dock, in the northwestern portion of the site

(Hot Spot 1). The other hot spot was centered around boring location RA-7 in the southwestern portion of the site (Hot Spot 2).

Below is a summary of site conditions when the RI was performed in 2013. This information is for background only. These conditions no longer exist; they were addressed through the Remedial Action, which is described in Section 1.4 below.

1.3.1 RI Soil Results

The following sections summarize the soil quality based on laboratory analytical data that were generated during the RI. A total of 98 soil samples and 6 duplicate samples were collected. A summary of sample locations and corresponding depth intervals is provided in Tables 1 through 5 of the RAWP.

Based on the planned site use, the soil laboratory analytical results were compared to NYSDEC Part 375 Criteria for the Protection of Groundwater Soil Cleanup Objectives (SCOs) and NYSDEC Part 375 Restricted Residential Use SCOs. Laboratory analytical data for soil are provided on the geologic cross sections provided on Plates 7 and 8 of the RAWP, and summarized in Tables 1 through 5 of the RAWP. Exceedances of Part 375 Unrestricted criteria are shown on Plate 1 of the RAWP and exceedances of Part 375 Restricted Residential and/or Protection of Groundwater criteria are shown on Plate 2 of the RAWP.

Volatile Organic Compounds

Table 1 of the RAWP presents a summary of the VOC analytical data for soil samples collected during the RI. A total of 104 soil samples were analyzed for VOCs. Analytical data for VOCs indicated detections above the Part 375 Protection of Groundwater SCOs for only five compounds: acetone, 1,2-DCE, PCE, TCE and VC. Only one compound (PCE) exceeded the Part 375 Restricted Residential SCO. Laboratory analytical data for soil exceedances for these compounds are shown on Plates 1 and 2 of the RAWP. The results for these compounds are summarized below.

• Acetone was detected in 30 soil samples, ranging in concentration from 5.2 micrograms per kilogram (μ g/kg) (estimated) to 196 μ g/kg (estimated). Acetone exceeded the SCOs (50 μ g/kg) at four locations, RA-3_34-35, RA-9_29-30, RA-10_29-30, and

RA-24_38-40. Acetone concentrations ranged from 73.5 μ g/kg to 196 μ g/kg (estimated) as detected in RA-3_34-35 and RA-10_29-30, respectively.

- 1,2-DCE was detected in 46 soil samples, ranging in concentration from 0.4 μ g/kg (estimated) to 2,590 μ g/kg. 1,2-DCE exceeded the SCOs (250 μ g/kg) at two locations, RA-3_10-12 and RA-4_10-12 at concentrations of 2,590 μ g/kg and 616 μ g/kg, respectively.
- PCE was detected in 91 soil samples, ranging in concentration from 0.35 μg/kg (estimated) to 1,090,000 μg/kg. PCE exceeded the Protection of Groundwater SCO (1,300 μg/kg) in 15 samples collected at 11 locations, RA-1_10-12, RA-1A_22-24, RA-2_10-12, RA-3_10-12 and RA-3_34-35, RA-4_10-12 and RA-4_22-24, RA-7_28-30, RA-8_10-12 and RA-8_22-24, RA-9_10-12, RA-10_29-30, RA-11B_33-35, RA-12_11-12.5, and RA-36_8-10. PCE exceeded the Restricted Residential SCO (19,000 μg/kg) in six samples collected from five locations, RA-1_10-12, RA-1A_22-24, RA-2_10-12, RA-3_10-12, RA-8_10-12, and RA-9_10-12. PCE concentrations exceeding SCOs ranged from 1,370 μg/kg to 1,090,000 μg/kg as detected in samples RA-4_22-24 and RA-1_10-12, respectively.
- TCE was detected in 58 soil samples, ranging in concentration from 0.31 μ g/kg (estimated) to 1,650 μ g/kg. TCE exceeded the SCOs (470 μ g/kg) at only one location, RA-3_10-12, at a concentration of 1,650 μ g/kg.
- VC was detected in only two (2) soil samples, at concentrations of 0.69 μg/kg (estimated) and 26.2 μg/kg (estimated). VC exceeded the SCOs (20 μg/kg) in only one location, RA-4_10-12, at an estimated concentration of 26.2 μg/kg.

Semivolatile Organic Compounds

Table 2 of the RAWP presents a summary of SVOC analytical data collected as part of the RI. A total of 61 soil samples were analyzed for SVOCs. As shown on Plates 1 and 2 of the RAWP, the majority of compounds that were analyzed for were reported at concentrations below the SCOs or not detected. Analytical data for SVOCs indicated detections above the SCOs for seven polyaromatic hydrocarbon (PAH) compounds in only three locations (RA-14, RA-33, and RA-36): benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, benzo[k]fluoranthene, and Indeno[1,2,3-cd]pyrene. The results for these compounds are summarized below.

Benzo[a]anthracene was detected in 21 soil samples, ranging in concentration from 16.8 µg/kg (estimated) to 2,970 µg/kg (estimated and the highest concentration for any compound). Benzo[a]anthracene exceeded the Protection of Groundwater and Restricted Residential SCOs (1,000 µg/kg) at two locations, RA-33_4-6 at a concentration of 2,160 µg/kg and RA-14_11-13 at a concentration of 2,970 µg/kg (estimated).

- Benzo[b]fluoranthene was detected in 21 soil samples, ranging in concentration from 23.8 μ g/kg (estimated) to 2,910 μ g/kg. Benzo[b]fluoranthene exceeded the Restricted Residential SCO (1,000 μ g/kg) at three locations, RA-36_8-10 at a concentration of 1,200 μ g/kg, RA-14_11-13 at a concentration of 2,140 μ g/kg, and RA-33_4-6 at a concentration of 2,910 μ g/kg. Benzo[b]fluoranthene exceeded the Protection of Groundwater SCO (1,700 μ g/kg) at two locations, RA-14_11-13 at a concentration of 2,140 μ g/kg.
- Benzo[a]pyrene was detected in 19 soil samples, ranging in concentration from 14.2 μg/kg (estimated) to 2,620 μg/kg (estimated). Benzo[a]pyrene did not exceed the Protection of Groundwater SCO (22,000 μg/kg) in any samples. Benzo[a]pyrene exceeded the Restricted Residential SCO (1,000 μg/kg) in two locations, RA-33_4-6 at a concentration of 2,480 μg/kg, and RA-14¬_11-13 at a concentration of 2,620 μg/kg (estimated).
- Chrysene was detected in 21 soil samples, ranging in concentration from 19.9 μ g/kg (estimated) to 2,830 μ g/kg (estimated). Chrysene exceeded the Protection of Groundwater SCO (1,000 μ g/kg) at two locations, RA-33_4-6 at a concentration of 2,000 μ g/kg and RA-14_11-13 at a concentration of 2,830 μ g/kg (estimated).
- Benzo[k]fluoranthene was detected in 20 soil samples, ranging in concentration from 15.6 μ g/kg (estimated) to 1,930 μ g/kg (estimated). Benzo[k]fluoranthene exceeded the Protection of Groundwater SCO (1,700 μ g/kg) at one location, RA-14_11-13 at a concentration of 1,930 μ g/kg (estimated).
- Dibenzo[a,h]anthracene was detected in 13 soil samples, ranging in concentration from 15 μg/kg (estimated) to 632 μg/kg. Dibenzo[a,h]anthracene did not exceed the Protection of Groundwater SCO (1,000,000 μg/kg) in any samples.
- Indeno[1,2,3-cd]pyrene was detected in 17 soil samples, ranging in concentration from 17.3 μ g/kg (estimated) to 1,570 μ g/kg. Indeno[1,2,3-cd]pyrene did not exceed the Protection of Groundwater SCO (8,200 μ g/kg) in any samples. Indeno[1,2,3-cd]pyrene exceeded the Restricted Residential SCOs (500 μ g/kg) in three locations, RA-33_4-6 at a concentration of 1,570 μ g/kg, RA-14_11-13 at a concentration of 1,370 μ g/kg, and RA-36_8-10 at a concentration of 748 μ g/kg.

<u>Metals</u>

Table 3 of the RAWP presents a summary of metals analytical data collected as part of the RI. A total of 61 soil samples were analyzed for metals. Many metals are naturally occurring in soil. As shown, the laboratory reported low concentrations or non-detect for the majority of metals that were analyzed in the samples. As shown on Plates 1 and 2 of the RAWP, analytical data for metals indicate two compounds, hexavalent chromium and arsenic, were detected above criteria for Part 375 Protection of Groundwater SCOs at one location (RA-33). Two compounds,

chromium and arsenic, were also detected above the Part 375 Restricted Residential SCOs at one (1) location (RA-33). The results of these compounds are summarized below.

- Arsenic was detected in 42 soil samples, ranging in concentration from 2.1 milligrams per kilogram (mg/kg) to 55.3 mg/kg as detected in RA-12_23-25 and RA-33_4-6, respectively. Arsenic exceeded the Protection of Groundwater and Restricted Residential SCOs (SCOs are the same for this compound; 16 mg/kg) at one location at a concentration of 55.3 mg/kg as detected in RA-33_4-6.
- Total Chromium was detected in all 61 soil samples, ranging in concentration from 30.2 mg/kg to 396 mg/kg. Total chromium exceeded the Restricted Residential SCO (180 mg/kg) at only one location, RA-33_4-6 at a concentration of 396 mg/kg.
- Hexavalent chromium was detected in 28 soil samples, ranging in concentration from 0.45 mg/kg to 33.2 mg/kg. Hexavalent chromium exceeded the Protection of Groundwater SCO (19 mg/kg) at one location at an estimated concentration of 33.2 mg/kg as detected in RA-33_4-6. Hexavalent chromium did not exceed the Restricted Residential SCO (110 mg/kg) in any samples.

Polychlorinated Biphenyls (PCBs)

Table 4 of the RAWP presents a summary of PCBs analytical data collected as part of the RI. A total of 61 samples were analyzed for PCBs. As shown on Plates 1 and 2 of the RAWP, PCBs were not detected in any of the soil samples collected during the RI.

Pesticides and Herbicides

Table 5 of the RAWP presents a summary of pesticides and herbicides analytical data collected as part of the RI. A total of 61 soil samples were analyzed for pesticides and herbicides. As shown on Plates 1 and 2 of the RAWP, analytical data for pesticides and herbicides indicated there were no pesticide or herbicide detections exceeding the criteria for Part 375 Protection of Groundwater or Restricted Residential SCOs.

RI Soil Results Conclusions

Soil sample results from the RI confirmed the 135 Kent Avenue property line/former rail loading dock area to be a contributing source for onsite CVOC contamination in soil. Soil sample results also indicated that PCE was the primary constituent of concern in site soil, with lesser detections of TCE and other PCE breakdown products. The soil sample results indicated that the highest concentrations of PCE detected in site soil were primarily limited to the property boundary area near the former rail loading dock, with concentrations decreasing significantly with increased

distance from the 135 Kent Avenue property line and with depth. As discussed in Section 1.4, a significant portion of the most heavily impacted soil in the property line/former rail loading dock area was removed during the excavation activities as part of the remedy. The remainder of the remedy completed to address VOCs exceeding the protection of groundwater SCO is described in Section 1.4 below.

Soil sample results from the RI from the remainder of the site indicated limited SVOC (PAH), pesticide, and metal detections attributable to historic fill used to level and bring the site to its former grade (+16 feet elevation). There were some pesticides in soil, presumably from use during railroad operations. PCBs were not detected in any of the soil samples collected during this investigation, although historical investigations reported PCB contamination in shallow soil. As discussed in Section 1.4, the majority of this historic fill was removed during the excavation activities as part of the remedy.

1.3.2 Site-Related Groundwater

The following sections summarize the groundwater quality based on laboratory analytical data that were generated during the RI. A total of 17 groundwater samples and one duplicate sample were collected. The groundwater laboratory analytical results were compared to NYSDEC Ambient Water-Quality Standards and Guidance Values (AWQSGVs) for Class GA groundwater (even though the groundwater at the site is not used for drinking since the area is connected to the public water supply). Laboratory analytical data for groundwater are shown on Plates 3, 4, and 5 of the RAWP, on the geologic cross sections provided on Plates 7 and 8 of the RAWP, and are summarized in Tables 8 through 12 of the RAWP.

Prior to the commencement of sampling activities in February 2013, water levels in existing groundwater monitoring wells were measured with a Solinst Interface Probe. Water level data collected in February 2013 were used to construct a site groundwater elevation contour and flow pattern map (Figure 3) and verified the groundwater flow direction was to the west/southwest.

Volatile Organic Compounds

Laboratory analytical data for VOCs detected in groundwater during the RI are presented in Plates 3, 4, and 5 of the RAWP, and summarized in Table 8 of the RAWP. A total of

18 groundwater samples were analyzed for VOCs. As shown, the majority of compounds that were analyzed for were reported at low concentrations or not detected in any of the samples. Analytical data for VOCs indicated detections above NYSDEC AWQSGV for 10 compounds: 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, benzene, carbon tetrachloride, chloroform, 1,2-DCE, PCE, TCE and VC. A summary of the detections is provided below.

- 1,1,1-Trichloroethane, 1,1-dichloroethane and 1,1-dichloroethene were detected in only two locations. All three compounds exceeded the respective NYSDEC AWQSGV (5 micrograms per liter [µg/L]) at only one location, MW-4, at concentrations of 411 µg/L, 26.7 µg/L, and 116 µg/L, respectively.
- Benzene was detected in only two locations. Benzene slightly exceeded the respective NYSDEC AWQSGV (1 μ g/L) at only one location, MW-5, at a concentration of 7.8 μ g/L.
- Carbon tetrachloride was detected at only three locations, MW-1, MW-2 and MW-4, and was detected above the NYSDEC AWQSGV (5 μ g/L) at concentrations of 156 μ g/L, 261 μ g/L and 40.4 μ g/L, respectively.
- Chloroform was detected in 8 locations. Chloroform exceeded the respective NYSDEC AWQSGV (5 µg/L) at only three locations, MW-2, MW-4 and MW-15, at concentrations of 13.1 µg/L (estimated), 10.7 µg/L and 24.5 µg/L, respectively.
- PCE was detected in all 18 groundwater samples collected. PCE was detected at concentrations ranging from 2.7 μg/L to 91,900 μg/L as detected in MW-13 and MW-1, respectively. PCE exceeded the respective NYSDEC AWQSGV (5 μg/L) at 11 locations, MW-1, MW-2, MW-3, MW-4, MW-8D, MW-8I, MW-8DI, MW-9D, MW-10, MW-12D, and MW-15.
- 1,2-DCE (a breakdown product of PCE) was detected in nine (9) locations. 1,2-DCE was detected at concentrations ranging from 0.49 μg/L (estimated) to 659 μg/L as detected in MW-8D and MW 2, respectively. 1,2-DCE exceeded the respective NYSDEC AWQSGV (5 μg/L) at seven locations, MW-1, MW-2, MW-4, MW-8I, MW-10, MW-11, and MW-15.
- TCE (a potential breakdown product of PCE) was detected in 11 locations. TCE was detected at concentrations ranging from 0.43 μg/L (estimated) to 435 μg/L (estimated) as detected in MW-15 and MW-8I, respectively. TCE exceeded the respective NYSDEC AWQSGV (5 μg/L) at nine locations, MW-1, MW-2, MW-3, MW-4, MW-8I, MW-8DI, MW-9D, MW-11, and MW-15.
- VC (a breakdown product of PCE) was only detected at one location, MW-2, at a concentration of $9 \mu g/L$ (estimated), above the NYSDEC AWQSGV ($2 \mu g/L$).

Semivolatile Organic Compounds

Table 9 of the RAWP presents a summary of SVOC analytical data collected as part of the RI. A total of 10 groundwater samples were analyzed for SVOCs. As shown, the only detections of SVOCs were Acenaphthene and Bis(2-ethylhexyl) phthalate in MW-5, and Napthalene in MW-1. None of these detections exceeded the NYSDEC AWQSGVs ($20 \mu g/L$, $5 \mu g/L$ and $10 \mu g/L$, respectively).

Metals

Laboratory analytical data for metals detected in groundwater samples during the RI are presented on Plate 4 of the RAWP and summarized in Table 10 of the RAWP. A total of 10 groundwater samples were analyzed for metals. As shown, eight metals (antimony, beryllium, cadmium, chromium, iron, lead, manganese and sodium) were detected above NYSDEC AWQSGV criteria. Iron, manganese and sodium are naturally occurring in regional groundwater. A summary of the detections of antimony, beryllium, cadmium, chromium, and lead is below.

- Antimony, beryllium, and cadmium were only detected in the duplicate sample from MW-1, at concentrations of 6.2 μ g/L (estimated), 5.4 μ g/L (estimated), and 6 μ g/L (estimated), respectively. The AWQSGVs for these compounds are 3 μ g/L, 3 μ g/L and 5 μ g/L, respectively. Antimony, beryllium, and cadmium were not detected in the parent sample from MW-1 or any other groundwater sample (with the exception of beryllium detected at 2.8 μ g/L in MW-13, which is below the NYSDEC AWQSGV).
- Chromium was detected in four (4) locations. Chromium was detected at concentrations ranging from 11.4 µg/L to 158 µg/L. Chromium exceeded the respective NYSDEC AWQSGV (50 µg/L) at two locations, MW-13 and MW-15, at concentrations of 158 µg/L and 69.6 µg/L, respectively.
- Lead was detected in seven locations. Lead was detected at concentrations ranging from $3.1 \ \mu g/L$ to $69.2 \ \mu g/L$. Lead exceeded the respective NYSDEC AWQSGV ($25 \ \mu g/L$) at three locations, MW-11, MW-13 and MW-15, at concentrations ranging from $32.2 \ \mu g/L$ to $69.2 \ \mu g/L$.

Polychlorinated Biphenyls (PCBs)

Table 11 of the RAWP presents a summary of PCB analytical data collected as part of the RI. A total of 11 samples were analyzed for PCBs. PCBs were not detected in any of the groundwater samples collected during the RI.

Pesticides and Herbicides

Table 12 of the RAWP presents a summary of pesticides and herbicides analytical data collected as part of the RI. A total of 11 samples were analyzed for pesticides and six samples were analyzed for herbicides (MW-1 through MW-6). Two pesticides (4,4'-DDD and 4,4'-DDT) were detected in two locations, MW-2 and MW-10, at concentrations below the NYSDEC AWQSGV. No herbicides were detected in any of the groundwater samples collected during this investigation.

Groundwater Profile Sample Results

The laboratory analytical results for groundwater profile (GWP) samples generated during the RI are provided in summarized in Table 8 of the RAWP and PCE results are shown on Plate 3 of the RAWP, in relationship to groundwater samples collected from adjacent and nearby wells. A total of 39 GWP samples and 2 duplicate GWP samples were collected as part of the RI. GWP samples were only analyzed for VOCs. As shown, the majority of compounds that were analyzed for were reported at low concentrations or not detected in any of the samples. Analytical data for VOCs indicated detections above NYSDEC AWQSGV for nine compounds: 1,2-dichloropropane, acetone, benzene, carbon tetrachloride, chloroform, 1,2-DCE, toluene, PCE and TCE. A summary of the detections is described below.

- 1,2-Dichloropropane was detected at only one location, GWP-4_13-15, above the NYSDEC AWQSGV (1 μ g/L) at a concentration of 21.8 μ g/L.
- Acetone was detected in 11 samples, ranging in concentration from 3.4 μ g/L (estimated) to 55.6 μ g/L. Acetone exceeded the respective NYSDEC AWQSGV (50 μ g/L) in two samples at only one location, GWP-1_43-45 and GWP-1_53-55, at concentrations of 51.3 μ g/L and 55.6 μ g/L, respectively.
- Benzene was detected in eight samples, ranging in concentration from 0.25 μ g/L (estimated) to 2 μ g/L. Benzene exceeded the respective NYSDEC AWQSGV (1 μ g/L) at only one location, GWP-1_33-35, at a concentration of 2 μ g/L.
- Carbon tetrachloride was detected in three samples, ranging in concentration from 0.56 μ g/L (estimated) to 38.5 μ g/L. Carbon tetrachloride exceeded the respective NYSDEC AWQSGV (5 μ g/L) at only one location, GWP-3_33-35, at a concentration of 38.5 μ g/L.
- Chloroform was detected in 38 samples, ranging in concentration from 0.98 μ g/L (estimated) to 79.3 μ g/L (estimated). Chloroform exceeded the respective NYSDEC AWQSGV (7 μ g/L) at all seven GWP locations, at concentrations ranging from 9.7 μ g/L to 79.3 μ g/L (estimated) as detected in GWP-6_73-75 and GWP-5_23-25, respectively.

- 1,2-DCE was detected in 22 samples, ranging in concentration from 0.37 μ g/L (estimated) to 280 μ g/L. 1,2-DCE exceeded the respective NYSDEC AWQSGV (5 μ g/L) at four locations, at concentrations ranging from 8.4 μ g/L to 280 μ g/L as detected in GWP-1_43-45 and GWP-5_23-25, respectively.
- PCE was detected in 36 samples, ranging in concentration from 0.37 μ g/L (estimated) to 48,600 μ g/L. PCE exceeded the respective NYSDEC AWQSGV (5 μ g/L) at all seven GWP locations, at concentrations ranging from 5.1 μ g/L to 48,600 μ g/L as detected in GWP-4_53-55 and GWP-5_23-25, respectively.
- TCE was detected in 29 samples, ranging in concentration from 0.24 μ g/L (estimated) to 234 μ g/L. TCE exceeded the respective NYSDEC AWQSGV (5 μ g/L) at all seven GWP locations, at concentrations ranging from 6.7 μ g/L to 234 μ g/L as detected in GWP-7_13-15 and GWP-6_43-45, respectively.

RI Groundwater Results Conclusions

Groundwater sample results from the RI indicated that the 135 Kent Avenue property and the former rail loading dock were sources for the PCE contamination in groundwater on the site; and the contamination was concentrated in the western portion of the site in the vicinity and downgradient of the property line with 135 Kent Avenue former rail loading dock area. Groundwater sample results indicated that PCE was the primary constituent of concern in site groundwater, with lesser detections of TCE and other PCE breakdown products. The PCE concentrations detected in site groundwater generally decreased with increased distance from the former rail loading dock area and with depth. A significant portion of the most heavily impacted soil in the former rail loading dock area that is acting as one of the contributing sources of groundwater contamination was removed during the excavation activities as part of the remedy. The remainder of the remedy completed to reduce or eliminate the VOCs in groundwater is described in Section 1.4.

Limited and localized detections of other CVOCs in groundwater collected from MW-4 are not detected in soil samples collected from the three soil borings surrounding this well, and are not detected in upgradient monitoring wells MW-6 and MW-13. The CVOC detections in this monitoring well may have been from an offsite source and are addressed Section 1.4.

The limited detection of benzene in groundwater collected from MW-5 is attributed to an offsite source. There are no other detections of benzene in site monitoring wells (with the exception of

an estimated detection below the AWQSGV in nearby well MW-4), no exceedances of benzene in site soil and no historical record of any petroleum storage or use at the site. Therefore, remediation is not required at MW-5 and it will not be discussed further.

1.3.3 Site-Related Soil Vapor

The laboratory analytical results for soil vapor samples generated during the RI are summarized on Plate 6 and Table 13 of the RAWP. A total of six soil vapor samples were collected from five sampling locations as part of the RI. Two samples (SS-6 and SS-7) were sub slab samples collected onsite and the remaining three sampling points (SV-1, SV-2, and SV-3) were soil vapor points collected beneath offsite sidewalks. Locations SV-2 and SV-3 are offsite, but located in the sidewalks immediately adjacent to the site. It should be noted that SV-1 is located offsite in the sidewalk on North 6th Street, which is on the other side of 135 Kent Avenue and over 100 feet from the property boundary between 149 and 135 Kent Avenue. As shown, the majority of compounds that were analyzed for were reported at low and/or estimated concentrations or not detected in any of the samples.

The following seven compounds are discussed because they are either constituents of concern at the site (namely PCE, TCE, and to a lesser extent 1,2-DCE) or due to their presence on the New York State Department of Health (NYSDOH) Guidance Soil Vapor Matrices. Matrix 1 provides guidance relative to carbon tetrachloride, TCE, and VC; and Matrix 2 provides guidance relative to 1,1,1- trichloroethane, 1,1-dichloroethene, 1,2-DCE, and PCE. No indoor air samples were collected as part of the RI; therefore, no direct comparison is made to the NYSDOH Matrices. A summary of the detections is provided below. Additional compounds besides these seven were detected and are included Table 13 of the RAWP.

Matrix 1 Compounds

- Carbon tetrachloride was detected in two soil vapor samples, at concentrations of $4.5 \,\mu$ g/m3 (estimated) and $39 \,\mu$ g/m3, in SS-6 and SS-7, respectively.
- TCE was detected in all six soil vapor samples, ranging in concentration from 23 μ g/m3 to 10,400 μ g/m3 as detected in SV-3 and SV-1, respectively. The TCE result from the confirmation sample collected from SV-1 on April 23, 2013 was 8,710 μ g/m3.
- VC was detected in one soil vapor sample, at a concentration of 2.8 μ g/m3 as detected in SS-7.

Matrix 2 Compounds

- 1,1,1-TCA was detected in five soil vapor samples, ranging in concentrations from 2.7 μ g/m3 (estimated) to 2,840 μ g/m3 as detected in SV-3 and SV-1, respectively. 1,1,1-Trichloroethane was not detected in the confirmation sample collected from SV-1; however, this is likely due to significantly elevated detection limits in this sample.
- 1,1-Dichloroethene was only detected in one soil vapor sample at an estimated concentration of $2.9 \,\mu$ g/m3 as detected in SS-7.
- 1,2-DCE was detected in three samples, ranging in concentration from 16 μ g/m3 in SS-7 to 6,820 μ g/m3 and 7,060 μ g/m3 (initial sample and confirmation sample, respectively) in SV-1.
- PCE was detected in all six soil vapor samples, ranging in concentration from 143 μ g/m3 to 25,300,000 μ g/m3 in samples SV-3 and SV-1 (confirmation sample), respectively. SV-1 was sampled a second time (confirmation sample) on April 23, 2013. The PCE result from the initial sample collected from SV-1 on April 2, 2013 was 15,400,000 μ g/m3. It should be noted that SV-1 is located offsite, north of the site, adjacent to 135 Kent Avenue on North 6th Street between Wythe Avenue and Kent Avenue.

RI Soil Vapor Results Conclusions

Soil vapor sample results from the RI indicated elevated CVOCs in soil vapor near the former rail loading dock area, and also beneath the sidewalk along both Kent Avenue (adjacent to the site) and North 6th Street (adjacent to the 135 Kent Avenue property).

SV-1 is located on the upgradient side of the 135 Kent Avenue site, in the sidewalk of North 6^{th} Street and over 100 feet from the property boundary between 149 and 135 Kent Avenue. The PCE result from the initial soil vapor sample collected from SV-1 on April 2, 2013 was 15,400,000 µg/m3. SV-1 was sampled a second time (confirmation sample) on April 23, 2013 and the result was 25,300,000 µg/m3. SV-1 is located near the truck loading dock of 135 Kent Avenue and, according to the property owner, that is where they purportedly received their PCE deliveries (as discussed during a June 17, 2013 meeting/conference call at the NYSDEC office). The extremely high detections of PCE in SV-1 soil vapor strongly point to the likely presence of source material on the 135 Kent Avenue site. It should be noted that the concentrations of PCE, 1,1,1-TCA, TCE, and 1,2-DCE are orders of magnitude higher in SV-1 than in the other sampling locations.

With regard to onsite (SS-6 and SS-7) and near-site (SV-2 and SV-3) soil vapor results, PCE was the primary contaminant, with lesser detections of PCE breakdown products and other CVOCs contained within the NYSDOH Guidance Matrices. It is important to note that soil borings RA-14 and RA-16, adjacent to SS-7 and SS-6, respectively, had non-detect to low concentrations (orders of magnitude lower than the unrestricted SCOs) of the compounds identified in soil vapor at SS-6 and SS-7. This indicates that the source of the soil vapor impacts at these locations is not the soil in the immediate vicinity of the sample locations. Potential contributing sources are soil, groundwater, and/or other source material that may exist below the 135 Kent Avenue property and/or onsite soil/groundwater impacts in the vicinity of the most heavily impacted soil in the property boundary with 135 Kent Avenue/former rail loading dock. A significant portion of the most heavily impacted soil in the remedy. The remainder of the remedy completed to reduce or eliminate the VOCs in onsite soil vapor is described in Section 1.4.

1.3.4 Qualitative Human Health Exposure Assessment

As described in Appendix 3B of DER-10, "The overall purpose of the Qualitative Human Health Exposure Assessment (or the exposure assessment) is to evaluate and document how people might be exposed to site-related contaminants, and to identify and characterize the potentially exposed population(s) now and under the reasonably anticipated future use of the site." The following section details the exposure assessment based on data collected during the RI, as presented in the Remedial Investigation Report.

Soil Exposure

Soil samples collected during the RI indicated the presence of VOCs, SVOCs, metals, and pesticides in concentrations above the NYSDEC Part 375 Unrestricted Use SCOs, Restricted Residential Use and Part 375 Protection of Groundwater SCOs. An individual could be exposed to these contaminants through direct contact with site soil during ground intrusive work at the site. Direct contact without the use of proper personal protective equipment (PPE) and personal hygiene measures could lead to dermal contact and incidental ingestion of these compounds. Since the site was fully fenced during remedial activities, and access was controlled, potential contact with site soil was restricted to remedial and construction contract workers at the site

performing ground intrusive activities. The general public was not exposed to direct contact with site soil. A community air monitoring program (CAMP) was implemented during intrusive activities to minimize the potential for off-site exposures from soil/dust leaving the site.

The planned future use of the site is commercial retail space with residential units above, housed in one building, with sub-grade parking and commercial/retail and storage areas. The remedy completed for the site is a Track 4 cleanup, which includes addressing the site soil in exceedance of the NYSDEC Part 375 Protection of Groundwater SCOs and restricted residential SCOs. Based on addressing contaminated soils through excavation and the complete cap of the site by the building construction, the potential for exposure by direct contact with contaminated soil will be minimized for both the public and any future construction workers performing ground intrusive activities at the site.

Groundwater Exposure

Groundwater samples collected during the RI indicated the presence of VOCs above the AWQSGVs. Since the groundwater table is encountered at approximately +2.8 to +6.7 foot elevation and groundwater is not used for drinking (the area is connected to the public water supply), there is no direct contact with or ingestion of groundwater by the general public. Individuals who perform groundwater sampling or remedial activities may come into contact with contaminated groundwater if proper PPE and personal hygiene measures are not used, which could lead to dermal contact and the potential for incidental ingestion of these compounds.

The future use of the site is commercial retail space with residential units above, housed within one building, and sub-grade parking and commercial/retail and storage areas. All buildings will be serviced by the public water supply. The remedy completed to address the VOCs in onsite groundwater was described in the RAWP and is summarized below. Based on this, the potential for public exposure by direct contact with contaminated groundwater will be reduced or eliminated.

Soil Vapor Exposure

Soil vapor samples collected during the RI indicated the presence of VOCs in soil vapor. Historical indoor air sampling at the site did not indicate indoor air quality concerns.

The future use of the site is commercial retail space with residential units above, housed within one building, with ventilated sub-grade parking and sub-grade commercial/retail and sub-grade storage areas. The construction of the building over the entire site footprint, where contaminants were detected in soil vapor samples results in the potential for soil vapor intrusion. Compounds that enter into newly constructed buildings could be inhaled by individuals that occupy the retail spaces within those buildings.

The building will be primarily underlain by a subterranean parking garage and retail and/or retail storage. The ventilated garage will be constructed with a vehicular exhaust venting system to be operated in the parking garage in accordance with applicable local building codes. Since the vented garage space and commercial/retail space and storage areas and floor space will be located on the sub-grade and ground floor levels, the potential for soil vapor intrusion into the residential units above will be minimal to non-existent. In addition, a waterproofing membrane/vapor barrier was constructed as part of the building foundation design and an active sub-slab depressurization system (SSDS) was installed below portions of the building.

The remedy completed to address on-site soil vapor was described in the RAWP and is summarized in Section 1.4 below.

1.3.5 Significant Threat

The NYSDEC and NYSDOH determined that this site posed a significant threat to human health and the environment prior to remediation. Notice of that determination was provided for public review.

1.4 Summary of Remedial Actions

The site was remediated in accordance with the NYSDEC-authored Decision Document dated December 2013, the NYSDEC-approved Remedial Action Work Plan dated December 2013, "RAWP Amendment No. 1 – Modification of Listed Hazardous Waste Boundaries" dated February 2014, "RAWP Amendment No. 2 – Contained-Out Determination for Groundwater" dated February 2014, "RAWP Amendment No. 3 – Modification of Hot Spot 2 Limits of Excavation" dated September 2014, the "MW-4 Area Zero Valent Iron Injection Pilot Test Work Plan" dated December 2013, the "Revised Permeable Reactive Barrier Design" dated

March 2014, the "Site Operations Plan" dated March 2014, the "Sub-Slab Depressurization System Design" dated July 2014, and the Supplemental Permeable Reactive Barrier Injection Work Plan dated March 2015.

The following is a summary of the Remedial Actions performed at the site:

- 1. Excavation of soil/fill exceeding Track 4 restricted residential and/ or protection of groundwater SCOs listed in Table 1;
- 2. Construction and maintenance of a site cover system consisting of the following to prevent human exposure to remaining contaminated soil/fill remaining at the site:
 - Building foundations (concrete slab/footings/basement walls);
 - Waterproofing membrane;
 - Mud slab;
 - Gravel or recycled concrete aggregate sub-base; and
 - Cement-bentonite slurry (at Hot Spots 1 and 2 only).
- 3. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site.
- 4. Groundwater remediation consisting of:
 - Temporary dewatering and water treatment during building construction;
 - In situ zero valent iron (ZVI) injections in the vicinity of MW-4; and
 - ZVI permeable reactive barrier (PRB) treatment wall in the southwest corner of the site;
- 5. Soil vapor remediation consisting of:
 - SSDS beneath portions of the building.
- 6. Screening for indicators of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive site work;
- 7. Collection and analysis of confirmation/ documentation samples (prior to excavation) to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs;
- 8. Appropriate offsite disposal of all material removed from the site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
- 9. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications listed in 6NYCRR Part 375-6.7(d), (2) all Federal, State

and local rules and regulations for handling and transport of material, and (3) NYSDEC DER-10; and

10. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

Remedial activities were completed at the site in July 2015.

1.4.1 Removal of Contaminated Materials from the Site

The remedy has achieved a Track 4 Restricted Residential cleanup as set forth in 6 NYCRR Part 375 based on the future use at the site. Based upon the evaluation of the soil data discussed in the RI and the future use of the site, the SCOs for soil are:

- NYSDEC Part 375 Criteria for the Protection of Groundwater; and
- NYSDEC Part 375 Restricted Residential Use Criteria.

A list of the SCOs for the primary contaminants of concern and applicable land use for this site is provided in Table 1.

Compared with Protection of Groundwater SCO's (Plates 1 and 2 of the RAWP), the preremediation data showed exceedances for VOCs within Hot Spot 1 (in the area of the property line/ former rail loading dock), within Hot Spot 2 (within the area of RA-7 in the southwest corner of the site) and in the vicinity of waste characterization sample A4 (hereafter referred to as the A4 Area). The limits and depths of excavation to address exceedances of the Part 375 protection of groundwater SCOs are as follows:

- Hot Spot 1 was excavated in two depth ranges, from +16 feet elevation to +6 feet elevation (0 feet bffs to a minimum of 10 feet bffs) and from +16 feet elevation to a minimum -19 feet elevation (0 feet bffs to a minimum of 35 feet bffs).
- Hot Spot 2 (an area approximately 32 feet by 25 feet around RA-7) was excavated from +16 feet elevation to a minimum -19 feet elevation (0 feet bffs to a minimum of 35 feet bffs).
- The A-4 Area (an area of approximately 14 feet by 14 feet) was excavated from +16 feet elevation to +1 feet elevation (0 feet bffs to a minimum of 15 feet bffs).

Exceedances of the NYSDEC Part 375 Restricted Residential Use SCOs (Plates 1 and 2 of the RAWP) for VOCs were within Hot Spot 1. Based on a review of all data, exceedances for SVOCs and/or metals were observed at various locations across the site (Plates 1 and 2 of the RAWP).

Due to structural and technical limitations, support of excavation (SOE) and excavation could not be completed any closer than 18 inches from the adjacent building foundations that share the property line. Therefore, due to the need for SOE within Hot Spot 1 to allow removal of soil to an elevation -19 feet (35 feet bffs) at and along the property line, while protecting the adjacent aging building along the north wall, it was technically impracticable to excavate soil within 18 inches from the property line that had exceedances of the protection of groundwater SCO for VOCs. In Hot Spot 1, SOE consisted of a secant pile wall constructed of overlapping bored structural concrete piles such that the wall thickness was 24 inches with the outer edge of the secant pile wall being approximately 18 inches from the property line/adjacent structure. The secant pile wall is 71 feet long. The limits of the secant pile wall are shown on Plate 3. Each secant pile was constructed by drilling and advancing a temporary steel casing from approximately 8 feet bffs to a maximum of 35 feet bffs within Hot Spot 1 (+8 feet elevation to a maximum of -19 feet elevation). The secant pile wall serves as SOE for removal of impacted soil from Hot Spot 1, as well as the foundation wall for the building structure in Hot Spot 1. The building foundation and slab configuration were designed such that soil remaining in place is adequately separated from building occupants in non-garage spaces through the use of the secant pile wall, additional concrete slabs, and/or waterproofing membranes, which will be discussed further in Section 2.2.1.1.

In Hot Spots 1 and 2, in order to reach the target depths of up to 35 feet bffs (–19 feet elevation) and maintain stability of the adjacent building, soil was removed by excavating trenches, which were simultaneously backfilled with a bentonite/slurry mix.

The entire site was excavated to a depth between 12 and 16 feet bffs (+4 feet to 0 feet elevation) to facilitate construction of the building's basement slab. Localized deeper excavations for construction of footings and elevator pits were also required. Excavation depths were nine inches below the bottom of the concrete (slab or footing) to allow for placement of six inches of

gravel or recycled concrete aggregate (RCA) and, a three-inch mud slab. This first cut for the building extended beyond the property boundary on the south, east and west sides by a maximum of five feet in order to install SOE consisting of soldier piles and lagging.

Along portions of the north wall of the building, outside of Hot Spot 1 (that has the secant pile wall SOE as described above), underpinning of adjacent structures was not possible due to the elevation of the footings relative to the water table elevation. In these areas, a wedge of soil was left in place to support adjacent structures. The wedge of soil started approximately at the elevation of the bottom of the adjacent footing and the wedge and extended inward into the site between three and seven feet from the property line depending on the distance to the adjacent structure at a one-foot horizontal to one-foot vertical slope. Based on the RI, waste characterization and confirmation/documentation sampling data, the only exceedances of SCOs within this wedge of soil were for metals and SVOCs that exceeded Protection of Groundwater and Restricted Residential SCOs for soil, but that were not observed in groundwater samples. In accordance with the RAWP, these soils were capped with a site cover system comprised of building foundations (concrete slab/footings/basement walls), a waterproofing membrane, a mud slab, and sub-base consisting of either gravel or RCA. At Hot Spots 1 and 2, the site cover system also includes a cement-bentonite slurry.

Approximately 42,170.59 tons of soil were removed and disposed. Of the 42,170.59 tons:

- 1,192.69 tons were disposed as hazardous waste greater than 10 times the Universal Treatment Standards (UTS). The waste was originally manifested and transported to Clean Earth of North Jersey, Inc. (CENJ) located at 115 Jacobus Avenue, Kearny, New Jersey 07032. CENJ re-manifested the waste and disposed of it at Horizon Environmental, Inc. located at 120 Route 155, Grandes-Piles, Quebec, Canada.
- 3,979.24 tons were disposed as hazardous waste less than 10 times the UTS. The waste was originally manifested and transported to CENJ located at 115 Jacobus Avenue, Kearny, New Jersey 07032. CENJ re-manifested the waste and disposed of it at Envirosafe Services of Ohio, Inc. located at 876 Otter Creek Road, Oregon, Ohio.
- 23,555.01 tons were disposed as nonhazardous waste at Clean Earth of Carteret, LLC located at 24 Middlesex Avenue, Carteret, New Jersey.
- 9,359.12 tons were disposed as nonhazardous waste at Clean Earth of New Castle, LLC located at 94 Pyles Lane, New Castle, Delaware.

- 2,914.53 tons were disposed as nonhazardous waste at Clean Earth of Philadelphia, LLC located at 3201 South 61st Street, Philadelphia, Pennsylvania.
- 1,170 tons were disposed as nonhazardous waste at Bellmawr Waterfront Development, L.L.C. located at 204 Harding Avenue, Bellmawr, New Jersey.

Disposal documentation is provided in the Final Engineering Report.

Prior to excavation, areas designated as U210 listed hazardous waste, as shown on Plate 3, were surveyed and staked in the field to provide visual reference. Soil from the areas designated as U210 listed hazardous waste, as described below in Section 1.4.1.3, was segregated and stockpiled separately from nonhazardous waste. Comingling of listed hazardous waste with nonhazardous soil was avoided to the extent practicable. If comingling of waste occurred, the resulting waste was considered U210 listed hazardous waste for disposal purposes.

All waste facilities were appropriately permitted. All waste haulers were permitted and licensed to transport wastes in New York and all localities and states through which they transported the wastes. All transporters were permitted in accordance with United States Department of Transportation (USDOT), state and local requirements, and possessed a United States Environmental Protection Agency (USEPA) identification number, where applicable. All vehicles used for the transportation of wastes were also in conformance with USDOT and USEPA requirements and the requirements of all states through which the wastes were transported, where applicable. All applicable manifesting and placarding transportation requirements were implemented. All trucks were visually inspected and properly decontaminated prior to leaving the site.

Figures showing areas where excavation was performed are shown in Plates 3 and 4.

1.4.1.1 Waste Characterization Sampling and Monitoring Well Abandonment

Waste Characterization Sampling

Waste characterization sampling was performed by Roux Associates for soil to be excavated onsite, as required by the disposal facilities. The specific parameter list and sample frequency was determined by the permit requirements of the disposal facilities; the analyses included VOCs, SVOCs, Target Analyte List (TAL) metals, PCBs/pesticides, Toxicity Characteristic

Leaching Procedure (TCLP) metals, total petroleum hydrocarbons (TPH), TCLP VOCs, TCLP SVOCs, TCLP PCBs/pesticides, and Resource Conservation and Recovery Act (RCRA) characteristics. The number of samples collected was based on the total volume of excavated soil and the facility sampling requirements. The soil data generated by Roux Associates submitted to the disposal facilities for waste characterization purposes are provided in the Final Engineering Report (FER).

This sampling was conducted *in situ* prior to implementation of the remedial action since this method has many potential benefits over the traditional method of stockpile-sample-then dispose.

Monitoring Well Abandonment

All onsite wells and offsite wells OW-1 and OW-2 were properly abandoned. Abandonment details are provided in the FER.

1.4.1.2 Pre-Excavation Confirmation/Documentation Soil Sampling

Based upon the extensive soil sampling that was completed at the site, areas requiring excavation were generally well delineated, with the exception of a few localized areas. Therefore, the excavation areas were based on removing soil to the locations of RI soil samples that meet the Protection of Groundwater SCOs and RI soil samples comprise the majority of the required confirmation/documentation soil samples for the project. Supplemental soil sampling was conducted from soil borings and test pits prior to implementation of the remedial excavation to make up the number of confirmation/documentation soil samples for the confirmation soil samples and the documentation. A list of the sample depths for the confirmation soil samples and the documentation soil samples is included in Tables 2 and 3, respectively. The confirmation/ documentation soil sample results are summarized in Tables 4 to 8 and shown on Plates 5 and 6, respectively.

Bottom Soil Sampling

As described in the RAWP, bottom soil sampling to represent the quality of soil remaining at the site after excavation is complete was conducted at a frequency of one sample per 3000 square feet of excavation area. The frequency of bottom soil sampling proposed in the RAWP and approved by NYSDEC was less frequent than the guidance provided in NYSDEC DER-10

Table 5.4 for excavations 20 to 300 feet in perimeter since the total excavation area was larger than the referenced excavation and the guidance allows for different sampling frequencies to be used for larger excavations where, as here, there are numerous existing soil samples throughout the site to demonstrate soil quality.

Within the hot spot excavation areas and the A4 Area, bottom confirmation soil samples were collected at a rate of one per 259 square feet of excavation area and were analyzed for constituents that exceeded SCOs during the RI. Locations of and exceedances of SCOs for the bottom confirmation soil samples are shown on Plate 5.

Outside of the Hot Spot 2, the shallow excavation area of Hot Spot 1 and the A4 Area, bottom documentation soil samples were collected at a rate of one per 1,858 square feet and were analyzed for the full suite of parameters in DER-10 Table 6.8 (b). Locations of and exceedances of SCOs for the bottom documentation soil samples are shown on Plate 6.

Sidewall Soil Sampling

In general for this site, sidewall samples at a frequency of one sample per 60 linear feet were completed. Again, the sampling frequency proposed in the RAWP and approved by NYSDEC is less frequent than the guidance provided in DER-10 due to the reasons stated above.

Around the hot spot excavation areas and A4 Area, sidewall confirmation soil samples were collected at a rate of one per 18 feet of sidewall and were analyzed for constituents that exceeded SCOs during the RI. Locations of and exceedances of SCOs for the sidewall confirmation soil samples are shown on Plate 5.

Documentation soil sampling was not required around western, southern and eastern walls of the site for this Track 4 scenario since excavation extended a maximum of five feet beyond the property line in these directions in order to install the required SOE and no soil exceeding the Restricted Residential and Protection of Groundwater SCOs remains onsite in these areas. As discussed in the RAWP, the original plan was to leave a wedge of soil along the entire 400 feet northern property boundary. However, a wedge was only left in place along the western 200 feet of the northern property boundary from Kent Avenue heading eastward toward Wythe

Avenue. As a result, sidewall documentation soil samples were only required to be collected along approximately the western 200 feet of the northern property boundary. No documentation soil samples were required to be collected from approximately the eastern 200 feet of the northern property boundary from Wythe Avenue heading westward toward Kent Avenue because the wedge of soil was removed. As a result, sample SDS-2, which was originally selected to represent remaining soil quality in the wedge of soil to remain, instead represents a bottom documentation soil sample.

Sidewall documentation soil samples were collected at a rate of one per 15 linear feet along 200 feet of the northern property line and were analyzed for the full suite of parameters in DER-10 Table 6.8 (b). Locations of and exceedances of SCOs for the sidewall documentation soil samples are shown on Plate 6.

All samples were field screened with a PID and placed in laboratory-supplied containers, stored on ice, and transported to the laboratory under chain of custody procedures in accordance with the QAPP included as Appendix C of the RAWP. Roux Associates performed all confirmation soil sampling.

1.4.1.2.1 Test Pits for Collection of Geotechnical Information and Confirmation/Documentation Soil Samples and Follow-up Confirmation Soil Sampling

Due to the lack of information regarding the foundations of several of the structures located adjacent to the north wall of the site, the Volunteer completed six test pits (TP-1 to TP-6) in the locations shown on Plate 3, in advance of the remedial excavation described in Section 1.4.1. The primary purpose of the test pits was to provide information for the geotechnical engineer to complete the foundation design; however, the Volunteer also collected the two sidewall documentation soil samples along the north wall from test pits TP-2 and TP-4. No samples were collected from the other four test pits. The sample locations and exceedances of SCOs are shown on Plates 5 and 6.

The test pits were approximately four to five feet wide by 10 to 12 feet long and approximately 12 feet deep. The test pits were completed by first saw cutting and removing the former warehouse concrete floor slab and then excavating to the desired depth. All required community
air monitoring and health and safety monitoring and odor/dust control were completed during the work. The Volunteer's onsite representative, Roux Associates, was present during intrusive work to monitor for nuisance odors. No nuisance odors or community air monitoring program exceedances were observed during this work.

All test pits were backfilled with the excavated soil, covered with two layers of 10 mil polyethylene sheeting, and inspected weekly until they were excavated.

1.4.1.3 Hazardous Waste Contained-In and Contained-Out Determination

The following section summarizes the hazardous waste 'contained-in' and 'contained-out' determination correspondence between the NYSDEC and Roux Associates (on behalf of the Volunteer). This correspondence is provided in the FER.

Solid Waste Determination Request

In a letter dated June 19, 2013, Roux Associates, on behalf of the Volunteer, requested a Solid Waste Classification Determination from the NYSDEC for waste generated at the site. The request was made to determine whether solid waste from the site, specifically soil impacted by PCE and to a lesser extent other CVOCs, should be classified as a listed hazardous waste.

NYSDEC Response to Solid Waste Determination Request

In a letter dated July 2, 2013, NYSDEC responded to the request for a solid waste determination by stating that absent a specific 'contained in' determination by the Department, PCE-contaminated soil or groundwater at the site would need to be classified as U210 listed hazardous waste in accordance with Title 40 of the Code of Federal Regulations (40 CFR) Part 261.33 and 6NYCRR Part 371.4(d)(6) based on the presence of PCE. A 'contained-in' determination from NYSDEC, however, would eliminate the U210 classification for some portion of those materials.

"Contained-Out Determination Request"

As directed by NYSDEC in a July 8, 2013 conference call, the request for a contained-out determination was made in accordance with the "action level" guidance provided in the NYSDEC Technical and Administrative Memorandum (TAGM) 3028 dated November 30, 1992. In the first of two contained-out requests, the boundaries of U210 listed hazardous waste

were originally proposed in a letter entitled "Contained-Out Determination Request" dated July 25, 2013 by Roux Associates. NYSDEC requested additional information in an email dated August 5, 2013. The additional information requested to satisfy the NYSDEC was submitted within the December 7, 2013 RAWP, which was approved by NYSDEC on December 9, 2013. Based upon the approved RAWP, the NYSDEC approved the contained-out request and associated boundaries of hazardous waste.

Based upon soil quality data that were collected in January 2014 after the first contained-out request, Roux Associates submitted a second letter dated February 11, 2014 entitled "Request for Modification of Listed Hazardous Waste Boundaries" to request a modification of the boundaries of U210 listed waste onsite. The January 2014 soil quality data indicated that the U210 boundaries were smaller than previously shown in the shallower of the two proposed boundaries (discussed further in the soil quality section below). The previous boundaries were drawn to soil borings RA-5 and RA-26 on the western and southern sides of the U210 listed waste area, respectively. However, based upon the 2014 data, soil borings SCS-5 and SCS-6 (on the western and southern sides of the U210 listed maste area, respectively), did not have any exceedances of the contained-in action limits for any CVOCs.

In the February 11, 2014 contained-out letter, no modifications were proposed to the deeper U210 waste boundaries for soil or the boundaries for groundwater that were approved by the NYSDEC on December 9, 2013. Figure 4 shows the location of samples that exceeded the TAGM 3028 "action levels."

<u>RAWP</u> Amendment No. 1 – NYSDEC Approval of the Modification of Listed Hazardous Waste <u>Boundaries</u>

In a letter dated February 19, 2014, the NYSDEC approved the February 11, 2014 request to modify the listed hazardous waste boundaries, which represents Amendment No. 1 to the approved RAWP.

RAWP Amendment No. 2 - Contained-Out Determination for Groundwater

In a letter dated February 27, 2014, the NYSDEC provided additional clarification regarding the discharge of treated groundwater from the site to the New York City sewer system. The letter

stated that groundwater does not have to be managed as hazardous waste when collected and managed in the following manner:

- Groundwater must be treated on-site to a level meeting the pretreatment limit (20 micrograms per Liter [μ g/L]) for PCE; and
- Treated groundwater meeting the pretreatment limit must be transported/ discharged to a New York City Publicly Owned Treatment Works (POTW) facility.

1.4.1.4 Backfilling

When excavation and removal of the impacted soil was complete, the excavation was backfilled and compacted using certified clean fill material meeting the lower of the restricted residential use criteria for human health or the criteria for protection of groundwater presented in Table 6.8(b) of the latest revision of Part 375. Backfill included gravel, sand, RCA and cement/bentonite slurry mix. The backfill material was free of extraneous debris or solid waste.

The source of the offsite fill was documented by the supplier, including the location where the fill was obtained and a brief history of the site that is the source of the fill. Sampling of the backfill material was conducted, when required, to confirm that it met the restricted residential use criteria (Table 9). Analytical results, when required, were submitted to the NYSDEC prior to use of the backfill.

In accordance with DER-10, the following material was imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final site cover, provided that it contained less than 10% by weight material which would pass through a size 80 sieve and consisted of:

- gravel, rock or stone, consisting of virgin material from a permitted mine or quarry; or
- recycled concrete or brick from a DEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002).

Backfill was obtained from the following sources (backfill documentation was provided in the FER):

- Approximately 539.99 tons of certified clean, virgin sand was obtained from Coram Materials. This material was from a virgin source; one sample was collected. The sampling results are provided in the FER.
- Approximately 35.15 and 206.95 tons of gravel or crushed stone backfill meeting the above requirement for import without sampling were obtained from Thalle Industries and Tilcon New York Inc., respectively, and were used below the floor slab/footings and around the SSDS piping in the eastern "void." Sampling of this material was not required.
- Approximately 181 and 975.63 tons of RCA meeting the above requirement for import without sampling were obtained from Evergreen Recycling of Corona and New York Recycling, respectively, and were used below the floor slabs. Sampling of this material was not required.

Cement and bentonite were obtained from Empire Transit Mix Inc. and Hydrogel, respectively, for use as a cement-bentonite slurry mix backfilled in Hot Spot 1 and Hot Spot 2. Sampling of this material was not required.

1.4.1.5 Dewatering and Construction Water Treatment/Discharge

Construction wastewater (generated from personnel/equipment decontamination) and dewatering liquids (groundwater and surface runoff entering excavation areas) were generated at the site during implementation of the Remedial Action. Dewatering was required in order to accomplish the excavation onsite. The dewatering system was operated by a subcontractor that specializes in dewatering and included wells with submersible pumps. All of the water generated onsite was treated by the onsite water treatment system prior to discharge to the New York City sewer system in accordance with the NYCDEP permit and RAWP Amendment 2 (see Section 1.4.1.3 for additional detail). The impacted groundwater was pumped to the temporary onsite treatment system for treatment. One storage tank was provided at the influent end of the system. The influent storage tank was followed by bag filter filtration and granular activated carbon (GAC) treatment. No waste characterization sampling was performed for water generated onsite that was treated onsite; however, sampling of this water in accordance with the NYCDEP sewer discharge permit was completed.

1.4.2 Site-Related Treatment Systems

The following sections discuss the site-related groundwater and soil vapor treatment systems installed as part of the remedial action.

1.4.2.1 Site-Related Groundwater Treatment System

In Situ Treatment Via ZVI Injections in the Vicinity of MW 4

Although the sampling completed during the RI did not identify a source of VOCs in the immediate vicinity of MW 4, treatment via *in situ* ZVI was completed in the vicinity of monitoring well MW 4 in order to treat CVOCs in the groundwater. The "MW-4 Area Zero Valent Iron Injection Pilot Test Work Plan" was submitted to the NYSDEC on December 30, 2013 for review and approval. The pilot test was proposed to determine injection radius of influence, injection spacing, etc. NYSDEC requested additional information in an email dated January 24, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates in a letter dated January 27, 2014. The "MW-4 Area Zero Valent Iron Injection Pilot Test Work Plan" and January 27, 2014 response letter were approved by NYSDEC on January 31, 2014.

ZVI is a reactive material that has successfully treated CVOCs in groundwater when injected into the subsurface. ZVI is also known by its trade name FEROXTM, and promotes degradation of CVOCs in groundwater through a variety of abiotic and biological processes reactions. ZVI has been known to treat CVOCs by:

- Direct reduction at the metal surface;
- Reduction by ferrous iron; and
- Reduction by hydrogen with catalysis.

The ZVI was injected into the subsurface using a technique known as pneumatic fracturing (PF) and by hydraulic pumping. The general approach of the PF technology is to create a network of artificial fractures for the injection of atomized ZVI. The objective of PF is to overcome the transport limitations that are inherent at many low permeability sites. PF is a process whereby a gas is injected into the subsurface at pressures exceeding the natural in situ pressures (i.e., overburden pressure, cohesive stresses, etc.) and at flow volumes exceeding the natural permeability of the formation, which creates a fracture network within the subsurface. The result

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is the enhancement of existing fractures and planes of weakness and the propagation of a dense fracture network surrounding the injection well. In turn, this fracture network enhances the overall effective bulk permeability of the formation, which allows the ZVI to achieve more complete contact with impacted soil and groundwater, thus improving the effectiveness of the in situ treatment approach.

The MW-4 Area ZVI Injection Pilot Test was completed from February 2, 2014 to February 7, 2014. Approximately 5,333 pounds of ZVI were injected into injection points IP-1, IP-2, IP-3 and IP-4 in accordance with ARS' recommended dosage. ARS' recommended dosage is based upon a 0.5% ZVI to soil mass ratio. A USEPA underground injection control (UIC) notification was submitted to USEPA on December 5, 2013 and submitted to NYSDEC in the December 30, 2013 "MW 4 Area Zero Valent Iron Injection Pilot Test Work Plan". The four injection points were located around monitoring well MW-4 as shown on Plate 3. The injection zone for each of the four injection points was from 12 feet bffs to 22 feet bffs (from +4 feet elevation to -6 feet elevation). Each injections were completed by hydraulically pumping. The deep interval at IP-1, all ZVI injections were completed by hydraulically pumping. The deep interval at injection point IP-1 was the only interval where PF was employed. Based on field observations, the minimum design radius of influence of 7.5 feet was achieved or exceeded. No additional remedial actions were required to address the MW-4 Area based on a review of groundwater data at downgradient offsite well OW-3.

Permeable Reactive Barrier Treatment Wall

A PRB was installed at the southwest corner of the site where Kent Avenue and North 5th Street meet, in order to prevent, to the extent practicable, offsite migration of contaminated groundwater from beneath the site. The "Permeable Reactive Barrier Design" letter was submitted to the NYSDEC on March 20, 2014 for review and approval. NYSDEC requested additional information in an email dated March 28, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates in a letter dated March 31, 2014 entitled "Revised Permeable Reactive Barrier Design." The "Revised Permeable Reactive Barrier Design." Was approved by NYSDEC on April 2, 2014.

PRBs are a proven *in situ* remedial technology used to remediate CVOCs in groundwater. A PRB is a continuous, *in situ* permeable treatment zone designed to intercept and remediate a contaminant plume. The treatment zone may be created directly using reactive materials such as iron. The reactive material that was used in the PRB at the site was ZVI, which is also known by the trade name FEROXTM. ZVI promotes the degradation of CVOCs through various abiotic and biological processes, as discussed above.

In accordance with the approved design, the PRB was installed with 10 injection points (IP-5 through IP-14) within the bounds of the property, upgradient of Hot Spot 2. The PRB injections were located 16 feet-on-center, with an assumed radius of influence (ROI) of 8 feet.

During the MW 4 Area ZVI Injection Pilot Test completed in February 2014, the design ROI of 8 feet was achieved or exceeded at injection points IP-1 through IP-4 using only standard hydraulic pumping techniques. Therefore, standard hydraulic pumping techniques were used to inject the ZVI into IP-5 through IP-14 for the PRB installation.

At all PRB injection points, the ZVI injection zone was 26 feet from 14 feet to 40 feet bffs (+2 to -24 feet elevation). As discussed in the RAWP, part of the soil remedy at the site involved the excavation of soil to a depth of 35 feet bffs (-19 feet elevation) near soil boring RA-7 (i.e., Hot Spot 2). Outside Hot Spot 2, the site was excavated to a depth between 12 and 16 feet bffs (+4 to 0 feet elevation) to install the building slab, footings and foundation. Injections began at a depth of 14 feet bffs (+2 ft elevation) to avoid excavating the injected ZVI to the extent practicable. The injections extended through the more permeable stratum comprised of silt and fine-medium sand and terminated in the stratum primarily comprised of silt based on borings completed during the RI.

The PRB was installed from April 1, 2014 to April 18, 2014. Each injection point had injection intervals approximately three vertical feet apart. Approximately 28,500 pounds of ZVI material were injected into the ten injection points in accordance with ARS' recommended dosage. ARS' recommended dosage is based upon a 0.5% ZVI to soil mass ratio. A USEPA UIC notification was submitted to USEPA on December 5, 2013 and submitted to NYSDEC in the December 30, 2013 "MW 4 Area Zero Valent Iron Injection Pilot Test Work Plan".

Supplemental Permeable Reactive Barrier Injection

Supplemental PRB injections were completed between March 30, 2015 and April 2, 2015 by ARS to improve the performance of a section of the original PRB. The "Supplemental Permeable Reactive Barrier Injection Work Plan" was submitted to the NYSDEC on March 13, 2015 and was approved by NYSDEC on March 18, 2015.

The supplemental PRB injections were completed in the sidewalk of North 5th Street adjacent to previous injections IP-13 and IP-14 (see Plate 3). The supplemental PRB injections were required because concentrations of CVOCs in offsite well OW-5 did not decline after the injections were completed in April 2014, and instead increased.

The reagent used for the supplemental PRB injections was comprised of ZVI and emulsified vegetable oil (EVO). The product is sold under the trade name of Ferox PlusTM.

Ferox PlusTM is designed to stimulate both chemical reduction and anaerobic reductive dechlorination in a long-lasting and easily distributable format. The EVO, which was not included during the 2014 injection program, serves as an electron donor to enhance in situ bioremediation of CVOCs by anaerobic degradation, resulting in benign end products. ZVI promotes the degradation of CVOCs in groundwater through a variety of abiotic and biological processes, as discussed above.

Approximately 5,500 pounds of Ferox Plus[™] were injected into the six supplemental injection points. The Ferox Plus[™] was provided by and injected into the subsurface by ARS.

This supplemental PRB injection plan involved six injection points in the sidewalk of North 5th Street. The aerial extent of the supplemental injections was intended to encompass the area between the previously anticipated injection zones of IP-13 and IP-14 (approximately 36 feet).

The vertical injection zone at each supplemental injection point was 20 feet (from elevation +2 feet to -18 feet). A USEPA UIC notification was submitted to USEPA on March 13, 2015 and was submitted to NYSDEC in the March 13, 2015 "Supplemental Permeable Reactive Barrier Injection Work Plan."

1.4.2.2 Site-Related Vapor Treatment System

The following sections provide a detailed description of the vapor mitigation components of the Remedy for the site. The remedy for soil vapor includes an active SSDS beneath portions of the building.

Sub-Slab Depressurization System

Since the majority of the site (aside from some soil remaining along portions of the north wall) was excavated and the basement slab was installed below or near the water table, a SSDS was not possible below the majority of the building.

The RI soil vapor sampling results indicated a maximum concentration of PCE in soil vapor of over 25,000,000 μ g/m3 in the sidewalk of North 6th Street to the north of the property at 135 Kent Avenue and over 100 feet from the property line of the site. Based on these results, it was not prudent for the Volunteer to implement any measures that would potentially draw that highly impacted soil vapor toward the building onsite.

Therefore, a SSDS was not installed below the wedge of soil that remained to support the adjacent buildings along portions of the north wall.

Instead, as a measure of protection, an active SSDS was installed in any areas that did not have a secant pile wall present and where soil above the water table remains in place adjacent to potentially occupied non-garage space, as shown on SSDS drawings V001.00 and V002.00 included in Appendix B. The SSDS was designed to withdraw soil vapor from these areas.

The "Sub-Slab Depressurization System Design" was submitted to the NYSDEC on July 8, 2014 for review and approval. NYSDEC and NYSDOH requested additional information in an email dated July 25, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates in a letter dated September 15, 2014. The "Sub-Slab Depressurization System Design" was approved by NYSDEC on October 17, 2014.

The active SSDS was constructed in accordance with Section 4.2 of NYSDOH Guidance including the following provisions:

- The active SSDS was designed by a professional engineer;
- An information package documenting the design of the active SSDS will be provided to the building tenants;
- The system piping will be sealed with the appropriate sealant to prevent migration of potential vapors into non-garage occupied spaces; and
- The collection pipe network is below the waterproofing membrane/ vapor barrier (See Section 2.2.1.2 below).

Ventilated Parking Garage

Although not an element of the remedy, an active mechanical ventilation system in the first floor and basement garage areas will be installed as a component of the building and will be operated in accordance with the requirements of the New York City Building Code. The majority of the basement cellar and a large portion of the first floor will be occupied by the ventilated garage. Consistent with established policy for environmental sites in New York City, and as approved by NYSDEC and NYSDOH in the RAWP, the ventilated garage acts as an approved substitute for a SSDS in these portions of the building. In addition, the ventilated garage provides a level of protection from potential accumulation of vapors migrating from underlying soil in the garage areas in the unlikely event of a breach of the site cover system. The garage fans will be installed, operated, and maintained in accordance with New York City Building Code.

Section 4.0 of this SMP includes details regarding Operation, Maintenance, and Monitoring of the various system components.

1.4.3 Remaining Contamination

As discussed in Section 1.4.1, materials exceeding the Part 375 restricted residential and protection of groundwater criteria (excluding VOCs) are present onsite. All of these materials have been contained under the site cover system comprised of the concrete slab/footings/ basement walls, vapor barrier/ waterproofing membrane, and a mud slab and sub-base consisting of clean gravel or RCA. The demarcation layer for the site cover system is the underside of the

cement-bentonite slurry in the areas of Hot Spots 1 and 2 and the underside of the sub-base for the concrete slab and footings and the outside face of the basement walls.

Section 1.4.1.2 discusses in greater detail the confirmation/ documentation soil samples that were collected. Tables 4 to 8 and Plates 5 and 6 summarize the results of all soil samples remaining at the site after completion of Remedial Action that exceed the unrestricted, restricted residential and protection of groundwater SCOs.

RAWP Amendment No. 3 – Modification of Hot Spot 2 Limits of Deep Soil Excavation

The vast majority of Hot Spot 2 was excavated in accordance with the RAWP (i.e., greater than 99.9% of the total volume proposed to be excavated in the RAWP was excavated). The deeper soils in Hot Spot 2 were removed by excavating trenches, which were simultaneously backfilled with a bentonite/ slurry mix. As shown on Plate 4, the southeast corner of Hot Spot 2 was excavated to approximately 10 feet bffs (+6 feet elevation) instead of the 35 feet deep target depth described in the RAWP (-19 feet elevation), resulting in 0.76 cubic yards (or approximately 0.07 percent of the total volume proposed to be excavated from Hot Spot 2 in the RAWP) of nonhazardous contaminated soil remaining. On September 11, 2014, Roux Associates sent a letter entitled "Modification to the Remedial Action Work Plan dated December 7, 2013" that requested this modification of the deep soil excavation limits in Hot Spot 2. In a letter dated September 19, 2014, the NYSDEC approved this Hot Spot 2 deep soil limits modification, which represents Amendment No. 3 to the approved RAWP.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Since remaining contaminated soil and groundwater/soil vapor exist beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 Engineering Controls

2.2.1 Engineering Control Systems

2.2.1.1 Site Cover System

Exposure to remaining contamination in soil/fill at the site is prevented by a site cover system placed over the site. This site cover system is comprised of 12 to 18 inches of clean concrete building slabs, footings and foundation; waterproofing membrane/ vapor barrier; a mud slab; and sub-base consisting of bluestone or RCA. In Hot Spots 1 and 2, the site cover system is comprised of the 12 to 18 inches of clean concrete building slabs, footings and foundation; waterproofing slabs, footings and foundation; waterproofing slabs, footings and foundation; waterproofing membrane/ vapor barrier; a mud slab; and sub-base consisting of bluestone or RCA. In Hot Spots 1 and 2, the site cover system is comprised of the 12 to 18 inches of clean concrete building slabs, footings and foundation; waterproofing membrane/ vapor barrier; a mud slab; and sub-base consisting of bluestone or RCA, followed by approximately 22 feet of cement-bentonite slurry. Plate 4 shows the as-built

details and location for the components of the site cover system. The Excavation Work Plan that appears in Appendix C outlines the procedures required to be implemented in the event the site cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP. Additional details about the site cover system are provided below.

The building foundation and slab configuration were designed and installed such that soil remaining in place above the water table is adequately separated from building occupants in non-garage spaces through the use of the secant pile wall, additional concrete slabs, and/or vapor barrier/waterproofing membranes.

Areas with Remaining Contamination Present Adjacent to Non-Garage Spaces without Secant Pile Wall

As shown on SSDS drawings V001.00 and V002.00 included in Appendix B, in areas with remaining contamination present above the water table adjacent to non-garage spaces and with no secant wall present, an additional concrete slab (not required for structural stability) was poured along the face of the wedge of soil remaining and a waterproofing membrane/ vapor barrier was installed below this slab, both of which have been included in the design specifically to act as a vapor barrier to limit the potential for vapor intrusion. The waterproofing membrane/ vapor barrier extends below the entire basement floor slab/footings and it extends vertically up the exterior foundation footing and exterior foundation wall to the first floor of the building. Specifics regarding the waterproofing/vapor barrier are described below.

As shown on SSDS drawings V001.00 and V002.00 in Appendix B, as an additional measure of protection against soil vapor intrusion, a second layer of waterproofing was installed on the outside of the exterior basement wall and the underside of the first floor slab. The space ("void") created between the additional concrete slab, the exterior basement wall and the exterior foundation footing was filled with clean sand as described in Section 1.4.1.4, thus eliminating occupied space being immediately adjacent to soil remaining in place above the water table. The active SSDS is installed in this void space, as described in Section 1.4.2.2.

Areas with Remaining Contamination Present Adjacent to Non-Garage Spaces with Secant Pile Wall

Detail 3 shown on Plate 4 shows an as-built section in the area where the secant wall is present, as discussed in Section 1.4. Although structural stability issues associated with the adjacent aging building made it technically impracticable to remove 18 inches of soil between the outer edge of the secant pile wall and the property line, additional measures were included in the design to limit potential soil vapor intrusion. These measures, which were specifically designed to maximize the distance between occupied non-garage spaces and soil remaining in place above the water table and limit the potential for soil vapor intrusion, include:

- The secant pile wall itself provides a physical barrier, 24 inches thick, between the soil remaining in place and the exterior wall of the basement.
- Extending the waterproofing membrane/ vapor barrier that was installed beneath the entire basement floor slab up the exterior basement foundation wall, below the exterior foundation footing and along the exterior first floor foundation wall to above the level of the first floor slab.
- Installing thicker footings and walls above and adjacent to the material left in place (see Plate 4).

The building foundation was designed and constructed to limit the potential for soil vaporintrusion and maximize the distance between soil remaining in place above the water table and occupied non-garage spaces.

As constructed, the foundation provides multiple layers of waterproofing membrane/ vapor barrier, depending upon the site conditions.

Waterproofing Membrane/ Vapor Barrier

The primary components of the waterproofing system (which act as the vapor barrier for this project) consisted of factory-made high density polyethylene (HDPE) composite membranes rolled onto the prepared subgrade and vertical walls. Waterproofing/ vapor barrier products that were used include Preprufe® Waterproofing System (Preprufe® 300R and 160R) as manufactured by W.R. Grace, and required accessory products. HDPE tape and Bituthene liquid membranes were used to seal the seams between the segments of HDPE membranes. Any penetrations through the waterproofing or vapor barrier were sealed in accordance with the

manufacturer's recommendations. The installation contractor, ACA Contracting, Inc., was a pre-certified by W.R. Grace as a trained applicator of their products.

2.2.1.2 Sub-slab Depressurization System

Since the majority of the site (aside from some soil remaining along portions of the north wall) was excavated and the basement slab was installed below or near the water table, a SSDS was not possible below the majority of the building.

The RI soil vapor sampling results indicated a maximum concentration of PCE in soil vapor of over 25,000,000 μ g/m3 in the sidewalk of North 6th Street to the north of the property at 135 Kent Avenue and over 100 feet from the property line of the site. Based on these results, it was not prudent for the Volunteer to implement any measures that would potentially draw that highly impacted soil vapor toward the building onsite.

Therefore, a SSDS was not installed below the wedge of soil that remained to support the adjacent buildings along portions of the north wall.

Instead, as a measure of protection in addition to the multiple layers of waterproofing membrane/ vapor barrier, an active SSDS was installed in any areas that did not have a secant pile wall present and where soil above the water table remains in place adjacent to potentially occupied non-garage space, as shown on SSDS drawings V001.00 and V002.00 included in Appendix B. The SSDS was designed to withdraw soil vapor from these areas.

The "Sub-Slab Depressurization System Design" was submitted to the NYSDEC on July 8, 2014 for review and approval. NYSDEC and NYSDOH requested additional information in an email dated July 25, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates in a letter dated September 15, 2014. The "Sub-Slab Depressurization System Design" was approved by NYSDEC on October 17, 2014.

The active SSDS consists of four-inch diameter perforated PVC collection pipes embedded in a gas permeable aggregate layer (¾-inch gravel or RCA) layer wrapped in filter fabric. Solid PVC vapor collection piping connects to the perforated piping and extended through one sealed

penetration on each side of the building in the first floor slab and will be routed to the roof of the building, once complete. Layout and design of the piping network and SSDS process equipment was determined after the building foundation design was finalized to make sure the piping was optimally located to avoid structural elements such as foundation walls, grade beams and footings while also maximizing propagation of vacuum.

The below grade portions of the SSDS were installed in the western "void" on April 13, 2015 and in the eastern "void" on June 4, 2015. The above grade components of the SSDS will be installed concurrently with the building. Once complete, two 2-horse power extraction blowers will be installed on the roof and will be connected to the SSDS piping. The two blowers selected for the SSDS are manufactured by Ametek Rotron® (Model No. EN505AX58ML) with a maximum flow rate of 150 standard cubic feet per minute (SCFM) and a maximum vacuum of 70 inches of water column. Each vapor extraction blower will be equipped with a control panel, vacuum gauge, ambient air dilution valve, flow meter, moisture knockout tank, vapor sampling port, alarm light, Carbtrol G-2 granular activated carbon vessel (if required) and effluent discharge stack consisting of four-inch schedule 80 PVC terminating at a height of eight feet above the roof a minimum of 10 feet from HVAC air inlets and property line.

The SSDS piping will be pressure/vacuum tested, as required, to confirm that it is installed properly.

A total of two soil vapor monitoring points were installed to demonstrate the effectiveness of the SSDS in depressurizing the area below the first floor slab where the SSDS is installed. The approximate locations of soil vapor monitoring points MP-1 and MP-2 are shown on drawings SSDS drawings V001.00 and V002.00 included in Appendix B. Prior to the occupation of the building, vacuum measurements will be collected from the monitoring points using a micro-manometer capable of monitoring a minimum of 0.001 inches of water column. Operational startup testing of the SSDS will be documented and submitted to NYSDEC following building construction and SSDS installation.

Procedures for startup, operating and maintaining the SSDS are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included

in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.1.3 ZVI Injections in the Vicinity of MW-4 and PRB in Southwest Corner of the Site

As described in more detail in Section 1.4, implementation of the ZVI injections in the vicinity of MW-4 was completed in February 2014 and included injection of 5,333 pounds of ZVI (FEROXTM) in four injection points. Implementation of the PRB was completed in April 2014 and included injection of 28,500 pounds of ZVI (FEROXTM) in ten injections points in the southwest portion of the site. Implementation of the supplemental PRB injections were completed in March/April 2015 and included injection of 5,500 pounds of ZVI and EVO (Ferox PlusTM) in six injection points.

2.2.2 Criteria for Completion of Remediation/Termination of Engineering Controls

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Site Cover System

The site cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.2.2.2 SSDS

The active SSDS will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSDS is no longer required, a proposal to discontinue the SSDS will be submitted by the property owner to the NYSDEC and NYSDOH.

2.2.2.3 ZVI Injections in the Vicinity of MW-4 and PRB in Southwest Corner of the Site

Following implementation of the remedy, including source removal activities and the implementation of the groundwater treatment activities, it was anticipated that groundwater concentrations leaving the site would decrease significantly and the remedial action objectives for groundwater would be met (i.e., mass reduction of VOCs in onsite groundwater and reduction of offsite migration from the site). However, based on the likelihood of a continuing upgradient source on the 135 Kent Avenue property, it is likely not feasible to achieve the groundwater remedial action objective and it will not be practicable for the Volunteer to prevent migration from their neighbor onto the site or entirely eliminate offsite migration from their site.

Groundwater monitoring activities to assess the performance of the ZVI injections in the vicinity of MW-4 and the PRB in the southwest corner of the site will be completed quarterly after implementation and will be discontinued once four quarterly rounds have been completed following issuance of the COC, at which time the Volunteer will request that monitoring be terminated. Implementation of the ZVI injections in the vicinity of MW-4 were completed in February 2014, implementation of the PRB was completed in April 2014 and implementation of the supplemental PRB injections were completed in March/April 2015. To date, a baseline round and seven performance rounds have been completed at well OW-3 and a baseline round and six performance rounds have been completed at wells OW-4 and OW-5. Results of the baseline and post-remediation groundwater samples for VOCs (detections only) and field parameters are presented in Tables 10 and 11, respectively. (Please note that the laboratory analytical data for the performance groundwater sampling rounds completed on March 6, April 30, and July 6, 2015 have not been validated as of the date of this SMP. The validated data can be found in the FER.)

As discussed in the approved RAWP, if during the monitoring period an increase in concentrations is observed at wells OW-4 and OW-5 located near the corner of Kent Avenue and North 5th Street after concentrations were observed to decrease in these wells, it will not be the responsibility of the Volunteer to pursue any additional remedial activities (due to the likelihood of an ongoing upgradient source at 135 Kent Avenue). If concentrations observed in wells

OW-4 and OW-5 do not initially decrease satisfactorily, additional measures will be evaluated by the Volunteer in consultation with NYSDEC and implemented, as necessary.

At OW-3, monitoring data indicates that groundwater concentrations are below the AWQSGVs for Class GA groundwater.

After completion of the fourth round of sampling following the issuance of the COC, the Volunteer will request approval to discontinue sampling.

Any modification to the sampling schedule and any decision to discontinue groundwater monitoring will be subject to NYSDEC and NYSDOH approval.

2.3 Institutional Controls

A series of Institutional Controls is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to restricted residential uses (and less restricted uses defined in 6 NYCRR Part 375) only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns.
- All Engineering Controls must be operated and maintained as specified in this SMP.
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP.
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for restricted residential use (and less restricted uses defined in 6 NYCR Part 375) provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- Vegetable gardens and farming on the property are prohibited with the exception of raised beds or rooftop gardens.
- The site owner or remedial party will submit to NYSDEC a written statement annually that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site has been remediated for restricted residential use (and less restricted uses defined in 6 NYCRR Part 375). Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing site cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix C to this SMP. In addition, any work conducted pursuant to the EWP must also be conducted, at a minimum, in accordance with the following plans:

- Procedures defined in the site-specific Community Air Monitoring Plan (CAMP) provided in Appendix D;
- Procedures defined in a project-specific Health and Safety Plan (HASP) provided in Appendix E; and

• Procedures defined in the Quality Assurance Project Plan (QAPP) provided in Appendix F.

Any amendments/revisions to the project-specific HASP, CAMP and QAPP, if warranted, must be prepared and submitted as part of the notification described in Section 2.0 of the EWP.

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

A soil vapor intrusion (SVI) evaluation is not required at the site, as a SVI mitigation system has been and will be installed as an element of the building foundation. This mitigation system includes a vapor barrier (i.e., waterproofing) and an active SSDS beneath portions of the building.

The "Sub-Slab Depressurization System Design" was submitted to the NYSDEC on July 8, 2014 for review and approval. NYSDEC and NYSDOH requested additional information in an email dated July 25, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates/ Remedial Engineering in a letter dated September 15, 2014. The "Sub-Slab Depressurization System Design" was approved by NYSDEC on October 17, 2014.

[Note that the building also contains a ventilated parking garage which was designed in accordance with the requirements of the New York City Building Code. As of the writing of this SMP, the ventilated parking garage is substantially complete. However, installation and operation of the garage fans has not been completed. The garage fans will be installed, operated, and maintained in accordance with the New York City Building Code. The ventilated parking garage is not considered an engineering control for the purposes of this SMP.]

Measures to be employed to mitigate potential vapor intrusion were evaluated, selected, and designed and will be installed in accordance with the approved design, and will be operated and maintained in accordance with this SMP.

2.4 Inspections and Notifications

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375, and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the BCA, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Noelle Clarke, P.E. of Remedial

Engineering, PC. These emergency contact lists must be maintained in an easily accessible location at the site.

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 12:	Emergency	Contact	Numbers
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Table 13: Contact Numbers

Noelle Clarke, P.E. – Remedial Engineering/Roux Associates	(631) 232-2600 (Office)
Ioana Munteanu-Ramnic, P.E. – NYSDEC Project Manager	(718) 482-4065
Albert DeMarco – NYSDOH Project Manager	(518) 402-7860
C+C Apartment Management LLC	(212) 348-3248

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 149 Kent Avenue, Brooklyn, New York

Nearest Hospital Name: Woodhull Medical Center

Hospital Location: 760 Broadway, Brooklyn, New York 11206

Hospital Telephone: (718) 963-8101

Directions to the Hospital:

- 1. Start at 149 Kent Avenue, Brooklyn, New York
- 2. Head northeast on Kent Avenue toward North 6th Street
- 3. Turn Right onto North 7th Street
- 4. Turn Right onto Wythe Avenue
- 5. Turn Left onto Metropolitan Avenue
- 6. Turn Right onto Union Avenue
- 7. Turn Left onto Broadway
- 8. Arrive at Woodhull Medical Center on your right

Total Distance: 2.2 miles

Total Estimated Time: 14 minutes



Figure 5: Map Showing Route from the site to the Hospital

2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 12 in Section 2.5.1). The list will also posted prominently at the site and made readily available to all personnel at all times.

2.5.3.1 Spill Procedures

In the unlikely event that petroleum or other hazardous substance is released on the site during any future remedial activities, persons (site personnel and building occupants) in the vicinity of the spill shall be notified immediately. The spread of minor petroleum or chemical spills will be controlled or stopped utilizing the appropriate materials (i.e., absorbents, etc.), if possible. Whenever possible, the safety data sheet (SDS) will be consulted to assist in determining the best means of containment and cleanup. For all petroleum or hazardous chemical spills immediately notify the appropriate response groups including the NYSDEC Spill Response hotline (within 2 hours of discovery). Materials used to contain the substance shall be disposed of properly.

2.5.3.2 Evacuation Plan

In the unlikely event that evacuation is necessary, site personnel and building occupants shall exit the site on North 5th Street. All persons in the building shall be notified of the evacuation.

2.5.4 Amendments to the Contingency Plan

Amendments to the contingency plan will be incorporated into this SMP, as needed, and discussed in the corresponding Periodic Review Report.

3.0 SITE MONITORING PLAN

3.1 Introduction

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the site cover system, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater).
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil.
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the periods specified for each matrix listed in Table 14. The frequency thereafter will be determined in consultation with NYSDEC and based on reports submitted showing contaminant trends. Trends in contaminant levels in groundwater will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are outlined in detail in Sections 3.2 and 3.3 below.

Monitoring Program	Frequency*	Matrix	Analysis
Site Cover System and Site-Wide Inspection	Annually. First inspection no more than 15 months after issuance of the COC.	Soil	Visual inspection of all cover system components
Groundwater	Quarterly for a minimum of Four Quarters following issuance of the COC	Groundwater	VOCs (USEPA Method 8260) for NYSDEC Target Compound List compounds
SSDS Detailed Operation Inspection	Monthly	Soil Vapor	Visual Inspection for Vacuum, Temperature, and Condensate, and Field Screening (PID) of effluent
SSDS System Status	Alarm light located in the superintendent's office - to be monitored by superintendent (superintendent to be onsite 3-5 days per week)	Soil Vapor	Visual inspection of alarm light to determine operation status

Table 14: Monitoring/Inspection Schedule

 \ast The frequency of events will be conducted as specified above until otherwise approved by NYSDEC and NYSDOH

A record of the findings of each monitoring/inspection event and maintenance activity performed, where applicable, will be kept in a dedicated log book and also documented on the Site Inspection Checklist (Appendix G) and Sub-Slab Depressurization System Operations and Maintenance Log (Appendix H). The preparation and submission of the Site Inspection Checklist (Appendix G) and Sub-Slab Depressurization System Operations Log (Appendix H) is discussed in Section 3.4. If at any time during the reporting period the Volunteer identifies a failure of one or more of the engineering controls or non-compliance with one or more of the institutional controls, the remedial party must implement corrective measures, in accordance with a Corrective Measures Work Plan (CMWP) submitted to and approved by NYSDEC and

provide a periodic certification of the IC/ECs. Corrective measures related to the operation of the SSDS will be initiated within 15 days of NYSDEC's approval of a CMWP and completed within 45 days, to the extent that is practical. If any maintenance is required as a result of observations noted during the performance of a periodic monitoring/inspection event, corrective measures not associated with operation of the SSDS, will be initiated within 60 days and completed within 120 days, to the extent that is practical. Confirmation of the completion of maintenance activities will be documented in the subsequent Periodic Review Report.

3.2 Cover System Monitoring

Exposure to residual contaminated soil remaining at the site is prevented by an engineered site cover system that consists of:

- Building foundations (concrete slab/footings/basement walls);
- Waterproofing membrane/vapor barrier;
- Mud slab;
- Gravel or RCA sub-base; and
- Cement-bentonite slurry (at Hot Spots 1 and 2 only).

The location and details of the site cover system are shown on Plate 4.

The site cover system will remain intact 24-hours a day, 7 days a week, for 365 days a year. Disturbance of the concrete floor slab and/or any of the underlying demarcation layers or EC components is governed by the Environmental Easement. In the unlikely event of an unanticipated accidental or required disturbance of the site cover system, the response procedure is outlined in Sections 3.1.1 and 5.4.

Monitoring of the site cover system will occur on an annual basis as long as the Environmental Easement is in effect to ensure the system's integrity. Monitoring will consist of visual inspection, which shall evaluate the structural integrity of the concrete floor slab, support columns into the floors and the wall joints. If any cracks or openings are identified, they shall be screened for organic vapors with a PID and any readings shall be noted. In addition, any cracks or openings in the floor shall then be properly sealed. The results of the inspection will be

included in the Periodic Review Report. In addition, the site cover system must be inspected and recertified any time a disturbance in the system occurs. The inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the site cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

3.3 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor down-gradient groundwater conditions at the site. No onsite monitoring wells were installed at the site due to the elevation of the basement floor slab being below or near the water table. Monitoring wells were installed at three new offsite locations for post-remedial monitoring of groundwater quality leaving the site. Two locations, OW-4 and OW-5, are in the sidewalk on North 5th Street downgradient of the PRB treatment wall, as shown on Plate 3. The other location, OW-3 is in the sidewalk on North 5th Street downgradient of MW 4, as shown on Plate 3.

OW-3 was constructed with 12 feet of screen from 6 to 18 feet below the existing sidewalk elevation (which is approximately 19 to 31 feet bffs and elevation -3 to -15 feet). OW-4 and OW-5 were constructed with 15 feet of screen from 15 to 30 feet below the existing sidewalk elevation (which is approximately 19 to 34 feet bffs and elevation -3 to -18 feet). The screened interval for OW-4 and OW-5 was selected to start below the footing of the building and span the more permeable fine sand and silt stratum based on borings/wells completed during the RI.

The wells were installed using the hollow stem auger method and constructed of 2 inch inside diameter, Schedule 40 polyvinyl chloride (PVC) casing and, 0.020 inch slot, machined screen. Continuous soil samples were collected during drilling using a 2-foot split-spoon sampler and the lithology was recorded. A sand pack was placed around the well screen, extending two feet above the top of the screened zone. Once the driller confirmed the depth of the sand pack, a minimum two-foot thick bentonite pellet seal was placed above the sand pack. Once the pellets

were allowed to hydrate, cement bentonite grout was pumped into the remaining annular space from the bottom up using a tremie pipe lowered to just above the bentonite seal.

The wells were completed using locking well plugs, and flush mounted, bolt-down, watertight, manhole covers cemented into place. Approximately 24 hours following installation, each monitoring well was developed to remove any fine-grained material in the vicinity of the well screen and to promote hydraulic connection with the aquifer. The wells were developed using a submersible pump, which was surged periodically until well yield was consistent and had turbidity below 50 Nephelometric turbidity units (NTUs). The new monitoring wells were surveyed by a New York State licensed land surveyor.

The groundwater monitoring program includes two components: baseline sampling and performance monitoring. Following implementation of the remedy, including source removal activities and the implementation of the groundwater treatment activities, it was anticipated that groundwater concentrations leaving the site would decrease significantly and the remedial action objectives for groundwater would be met (i.e., mass reduction of VOCs in onsite groundwater and reduction of offsite migration from the site). However, based on the likelihood of a continuing upgradient source on the 135 Kent Avenue property, it is likely not feasible to achieve the groundwater remedial action objective and it will not be practicable for the Volunteer to prevent migration from their neighbor onto the site or entirely eliminate offsite migration from their site.

Groundwater monitoring activities to assess the performance of the ZVI injections in the vicinity of MW-4 and the PRB in the southwest corner of the site will continue quarterly after implementation and will be discontinued once four quarterly rounds have been completed following issuance of the COC, at which time the Volunteer will request that monitoring be terminated. Implementation of the ZVI injections in the vicinity of MW-4 were completed in February 2014, implementation of the PRB was completed in April 2014 and implementation of the supplemental PRB injections were completed in March/April 2015. To date, a baseline round and seven performance rounds have been completed at well OW-3 and a baseline round and six performance rounds have been completed at wells OW-4 and OW-5.

As discussed in the approved RAWP, if during the monitoring period an increase in concentrations is observed at wells OW-4 and OW-5 located near the corner of Kent Avenue and North 5th Street after concentrations were observed to decrease in these wells, it will not be the responsibility of the Volunteer to pursue any additional remedial activities (due to the likelihood of an ongoing upgradient source at 135 Kent Avenue). If concentrations observed in wells OW-4 and OW-5 do not initially decrease satisfactorily, additional measures will be evaluated by the Volunteer in consultation with NYSDEC and implemented, as necessary.

At OW-3, monitoring data indicates that groundwater concentrations are below the AWQSGVs for Class GA groundwater. After completion of the fourth round of sampling after issuance of the COC, the Volunteer will request approval to discontinue sampling.

Any modification to the sampling schedule and any decision to discontinue groundwater monitoring will be subject to NYSDEC and NYSDOH approval.

Monitoring well construction logs are included in Appendix I.

The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.3.1 Groundwater Gauging Protocol

Prior to sample collection, an electronic water level indicator will be utilized to gauge the water level from the top of the well casing at each monitoring well to an accuracy of 0.01 feet. The water level will be recorded in a field book and on the groundwater well sampling log (Appendix J).

3.3.2 Groundwater Sampling Protocol

Prior to sample collection, the monitoring wells will be purged via low flow means using a bladder or peristaltic pump. Unless otherwise approved by NYSDEC, the USEPA Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures will be employed. Samples and

parameter readings will be collected using a flow through cell to prevent sample contact with atmospheric air. All well sampling activities will be recorded in a field book and a groundwater well sampling log (Appendix J) will be prepared. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log, which will be submitted as an appendix to the Periodic Review Report. Groundwater samples will be analyzed for the following by a NYSDOH ASP certified laboratory:

• VOCs (USEPA Method 8260) for NYSDEC Target Compound List compounds.

3.3.2.1 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any decommissioning of monitoring wells for the purpose of replacement, and the decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.4 Site-Wide Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix G). The form will compile sufficient information to assess the following:

• Compliance with all ICs, including site usage;

- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records (Site Inspection Checklists and Sub-Slab Depressurization System Operations Logs, sampling logs, etc.) are up to date.

3.5 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of a QAPP prepared for the site (see Appendix F). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
 - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
 - Sample holding times will be in accordance with the NYSDEC ASP requirements.
 - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody.
- Calibration Procedures:
 - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
 - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures.
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.

- Internal QC and Checks.
- QA Performance and System Audits.
- Preventative Maintenance Procedures and Schedules.
- Corrective Action Measures.

3.6 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan (Section 5) of this SMP.

A summary of the monitoring program deliverables are summarized in Table 15 below. A summary of all monitoring, inspection, and maintenance activities performed and corrective action measures identified during the reported period will be reported to NYSDEC on a periodic basis, at a minimum of once per year, in the Periodic Review Report described in Section 4.3 of this SMP.

Based on the scope or the type of site monitoring performed, a letter report or an email summary with attachments will be prepared, subsequent to each sampling event. The document submittal will include, at a minimum:

- Date of event.
- Personnel conducting sampling.
- Description of the activities performed.
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.).
- Sampling results in comparison to appropriate standards/criteria.
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format).
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in digital format sent to the attention of the current NYSDEC Project Manager.

Task	Reporting Frequency*	
Periodic Review Report** and Annual Certification	Annually	
Revisions to NYSDEC-Approved SMP and HASP	As Needed	
Letter or Email Report with Figures and Attachments	Quarterly as Performed	

 Table 15: Schedule of Monitoring/Inspection Reports

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

** The Periodic Review Report will include results of all monitoring, sampling, and inspection activities (i.e., at a minimum, groundwater monitoring, SSDS inspections, annual certification, and general site inspection).
4.0 OPERATION AND MAINTENANCE PLAN

4.1 Introduction

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site.

One of the mechanical systems associated with the development is an active mechanical ventilation system in the first floor and basement garage areas, which will act as an approved substitute for an SSDS in these areas and which was/will be installed as a component of the building. As of the writing of this SMP, the ventilation system is substantially complete; however, installation and operation of the fans is not yet complete. The ventilated garage will be operated and maintained in accordance with the requirements of the New York City Building Code. As such, specific details regarding operation and maintenance of the garage ventilation system are not described in this Operation and Maintenance Plan.

The other mechanical component of the remedy is the SSDS. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the SSDS;
- Includes an operation and maintenance contingency plan; and
- Will be updated periodically to reflect changes in site conditions or the manner in which the SSDS is operated and maintained.

Information on non-mechanical Engineering Controls (i.e. site cover system) is provided in Section 3 - Engineering and Institutional Control Plan. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 Engineering Control System Operation And Maintenance

This section describes the operation and maintenance activities that will be performed at the site. These activities include:

• Start-up of the SSDS;

- Performance monitoring of the SSDS; and
- Inspection and maintenance of the SSDS.

4.2.1 Scope

Exposure to intrusion of contaminated soil vapor within the site building is prevented by an active SSDS, which applies negative pressure under a portion of the foundation, collects contaminated vapor, and subsequently discharges the vapor to the atmosphere above the roof the site building.

The "Sub-Slab Depressurization System Design" was submitted to the NYSDEC on July 8, 2014 for review and approval. NYSDEC and NYSDOH requested additional information in an email dated July 25, 2014. The additional information requested to satisfy the NYSDEC was submitted by Roux Associates in a letter dated September 15, 2014. The "Sub-Slab Depressurization System Design" was approved by NYSDEC on October 17, 2014.

The active SSDS consists of four-inch diameter perforated PVC collection pipes embedded in a gas permeable aggregate layer (¾-inch gravel or RCA) layer wrapped in filter fabric. Solid PVC vapor collection piping connects to the perforated piping and extended through one sealed penetration on each side of the building in the first floor slab and will be routed to the roof of the building, once complete. Layout and design of the piping network and SSDS process equipment was determined after the building foundation design was finalized to make sure the piping was optimally located to avoid structural elements such as foundation walls, grade beams and footings while also maximizing propagation of vacuum.

The below grade portions of the SSDS were installed in the western "void" on April 13, 2015 and in the eastern "void" on June 4, 2015. The above grade components of the SSDS will be installed concurrently with the building. Once complete, two 2-horse power extraction blowers will be installed on the roof and will be connected to the SSDS piping. The two blowers selected for the SSDS are manufactured by Ametek Rotron® (Model No. EN505AX58ML) with a maximum flow rate of 150 standard cubic feet per minute (SCFM) and a maximum vacuum of 70 inches of water column. Each vapor extraction blower will be equipped with a control panel, vacuum gauge, ambient air dilution valve, flow meter, moisture knockout tank, vapor sampling

port, alarm light, Carbtrol G-2 granular activated carbon vessel (if required) and effluent discharge stack consisting of four-inch schedule 80 PVC terminating at a height of eight feet above the roof a minimum of 10 feet from HVAC air inlets and property line.

The SSDS piping will be pressure/vacuum tested, as required, to confirm that it is installed properly.

A total of two soil vapor monitoring points were installed to demonstrate the effectiveness of the SSDS in depressurizing the area below the first floor slab where the SSDS is installed. The locations of soil vapor monitoring points MP-1 and MP-2 are shown on drawings SSDS drawings V001.00 and V002.00 included in Appendix B.

4.2.2 System Start-Up and Testing

Performance monitoring will be performed as part of the initial SSDS startup to verify that each system is operating properly and will consist of the following:

- Confirm operation of each alarm warning light;
- Confirm acceptable air flow rate (50 to 100 cfm) from each of the SSDS blowers by a visual inspection of gauges affixed to each blower;
- Confirm acceptable vacuum readings (20 to 50 inches of water column) from each SSDS and the slotted piping by a visual inspection of gauges to each blower;
- Confirm acceptable negative pressure (a minimum of 0.005 inches of water column) beneath the treatment area from monitoring points by using an appropriate manometer or portable vacuum gauging device;
- Collect PID readings; and
- Collect confirmation effluent air samples.

Vacuum measurements will be collected from the soil vapor monitoring points shown on SSDS drawings V001.00 and V002.00 included in Appendix B. The vacuum measurements will be collected using a micro-manometer capable of monitoring a minimum of 0.001 inches of water column. If adequate depressurization (e.g., vacuum influence of at least 0.005 inches of water column) is not occurring, the cause for the lack of depressurization will be investigated and repaired and measurements will be collected again.

Following the initial startup, performance monitoring of the SSDS will also include monitoring the system effluent VOC concentrations using a PID. In addition, during start-up of the SSDS, an effluent air sample will be collected from the discharge of each system using a Summa canister and analyzed using USEPA TO-15 to verify whether vapor treatment is needed. The effluent air sample results will be compared to the DAR-1 Air Guide guidance values. If the sample results indicate that treatment is required, appropriate treatment options will be evaluated and installed.

The system testing described above (excluding effluent air sampling) will be conducted if, in the course of the SSDS lifetime, significant changes are made to the SSDS, or if the system is shut down for any reason, and the system must be restarted.

4.2.3 System Operation: Routine Operation Procedures

Routine operation procedures of the SSDS will consist of monitoring the vacuum at each blower inlet and recording dilution valve setting (i.e., 50% open).

4.2.4 System Operation: Routine Equipment Maintenance

The routine maintenance activities include visual inspections, operating data collection and general maintenance. Visual inspection is the routine part of the SSDS operator's activities. The system operator will note any conditions which present a potential hazard or could cause future system shutdown. In the field, special attention will be paid to the condition of the blowers and appurtenances, and the above slab discharge piping and supports. Special attention should be given to any unusual or excessive noise or vibrations from the piping and blower. The piping and valves will be inspected for leaks.

All equipment maintenance and inspections will be performed in accordance with manufacturer's instructions (see Appendix K for specifications). Specific routine maintenance tasks are outlined below:

- Inspect control panel and warning lights/alarms;
- Inspect blower piping to confirm operation of appropriate valves (i.e., dilution valve);
- Inspect vacuum/pressure gauges for proper operation;

- Check and clean air filter on each moisture knockout tank; and
- Check for the presence of and remove water in each knockout tank.

In the event that a condition warranting system component maintenance is identified, the appropriate reporting and maintenance should be conducted immediately. Manufacturer's recommendations for system component maintenance are included in the component manuals in Appendix K. Any maintenance completed for the SSDS should be documented in the Maintenance Log included in Appendix H.

4.2.5 System Operation: Non-Routine Equipment Maintenance

Non-routine equipment maintenance consists of maintenance activities that will be performed with less frequency than the routine maintenance (i.e., semi-annually) on several system components. Non-routine equipment maintenance and inspections. Specific non-routine maintenance tasks are outlined below:

- Inspect and test alarm;
- Check float switch in each knockout tank for proper operation;
- Replacement of vacuum/pressure gauges; and
- Change bearings on blowers after 15,000 hours of operation.

Most damage or problems associated with SSDS components will trigger one of the alarms. Damage to any SSDS components will be noted in the routine and detailed system inspections and remedied upon identification.

Accumulated condensate will be containerized in a 55-gallon drum for future offsite disposal, if necessary based upon sample results from the first batch of drummed condensate. Procedures for sampling drummed purge water are provided in the QAPP. Manufacturer's recommendations for system component maintenance are included in the component manuals in Appendix K. Any maintenance completed for the SSDS should be documented in the SSDS Log included in Appendix H.

In the event that low SSDS air flow rates or vacuum are observed anywhere in the system, further system balancing may be necessary following moisture removal, to ensure that the combined air flow rates and vacuum in a given area of the site achieve the minimum design requirements.

4.3 Engineering Control System Performance Monitoring

To ensure that the SSDS performs as designed, the monitoring plan described below will be implemented. System monitoring will be performed by collecting operating data such as flow rates, vacuums and pressures from the SSDS components and measuring vacuum in the sub-slab vapor monitoring points.

4.3.1 Monitoring Schedule

The SSDS system will be monitored on a monthly basis.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSDS are specified later in this Plan.

4.3.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the monitoring event. SSDS components to be monitored include, but are not limited to, the following:

- Vacuum/pressure and air flow readings at each blower;
- Vacuum readings at the sub-slab vapor monitoring points; and
- Liquid level in the moisture knockout tank.

A complete list of components to be checked is provided in the SSDS System Operations and Maintenance Log, presented in Appendix H. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSDS restarted.

4.3.3 System Monitoring Devices and Alarms

The blowers will each have a float switch for the moisture knockout tank to indicate a high liquid level in the knock out tank that will shut down the system. Each blower has an overload relay that will shut down the blower for too high voltage or current.

The SSDS has a warning device to indicate that the system is not operating properly. The warning device consists of an alarm light, which will be located in the superintendent's office. The superintendent will be onsite three to five days per week, allowing for the visual inspection of SSDS operational status multiple times per week. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSDS restarted. Operational problems will be noted in the subsequent Periodic Review Report.

4.3.4 Sampling Event Protocol

All SSDS monitoring sampling activities will be recorded in a field book and a monitoring log.

4.4 Maintenance And Performance Monitoring Reporting Requirements

Maintenance reports and any other information generated during regular operations at the site will be kept on-file. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (see Appendix H) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date;
- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and

• Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, a form will be completed which will include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as power interruption or fire that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system, which are contained in Appendices G (site cover system), and H (SSDS). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in each respective Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items; and
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 Certification of Engineering and Institutional Controls

After the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices;
- The information presented in this report is accurate and complete; and
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative for the site.

The signed certification will be included in the Periodic Review Report described below.

For each institutional control identified for the site, I certify that all of the following statements are true:

• The institutional control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;

- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the environmental easement;
- The information presented in this report is accurate and complete; and
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative for the site.

5.3 Periodic Review Report

A Periodic Review Report will be submitted to the Department every year, beginning fifteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in the metes and bounds site description that is part of the Environmental Easement (Appendix A). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format.

- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.
- A site evaluation, which includes the following:
 - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
 - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
 - Any new observations based on inspections or data generated by the Monitoring Plan for the media being monitored;
 - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
 - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted in electronic format to NYSDEC Region 2 Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a CMWP will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

- 1. Soil Cleanup Objectives
- 2. List of Confirmation Sample Identifications and Depths
- 3. List of Documentation Sample Identifications and Depths
- 4. Summary of Volatile Organic Compounds in Post-Remediation Soil Samples
- 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples
- 6. Summary of Metals in Post-Remediation Soil Samples
- 7. Summary of Polychlorinated Biphenyls in Post-Remediation Soil Samples
- 8. Summary of Pesticides and Herbicides in Post-Remediation Soil Samples
- 9. Backfill Criteria
- 10. Summary of Baseline and Post-Remediation Volatile Organic Compounds in Groundwater
- 11. Summary of Field Parameters in Baseline and Post-Remediation Groundwater
- 12. Emergency Contact Number (Embedded in Text in Section 2.5.1)
- 13. Contact Numbers (Embedded in Text in Section 2.5.1)
- 14. Monitoring/Inspection Schedule (Embedded in Text in Section 3.1.2)
- 15. Schedule of Monitoring/Inspection Reports (Embedded in Text in Section 3.6)

	NYSDEC Part 375
Parameter	Protection of
T arameter	Groundwater
	Groundwater
Volatile Organic Compounds (Conc	entrations in µg/kg)
1,1,1-Trichloroethane	680
1,1-Dichloroethane	270
1,1-Dichloroethene	330
1.2.4-Trimethylbenzene	3600
1.3.5-Trimethylbenzene	8400
1 2-Dichlorobenzene	1100
1.2-Dichloroethane	20
1.3 Dichlorobenzene	2400
1.4 Dichlorobonzono	1800
	100
1,4-Dioxane	100
2-Butanone (MEK)	120
Acetone	50
Benzene	60
Carbon tetrachloride	760
Chlorobenzene	1100
Chloroform	370
cis-1,2-Dichloroethene	250
Ethylbenzene	1000
Methylene chloride	50
MTBE	930
Tetrachloroethene	1300
Toluene	700
trans-1.2-Dichloroethene	190
Trichloroethene	470
Vinvl chloride	20
Xylenes (total)	1600
	NYSDEC Part 375
Parameter	Restricted
	Residential
Semivolatile Organic Compounds ((Concentrations in ug/kg)
2-Methylphenol	100000
3&4-Methylphenol	100000
Acenaphthene	100000
Acenaphthylene	100000
Anthracene	100000
Benzo[a]anthracene	1000
Benzo[a]pyrene	1000
Benzo[b]fluoranthene	1000
Benzo[g,h,i]perylene	100000
Benzo[k]fluoranthene	3900
Chrysene	3900
Dibenzo[a,h]anthracene	330
Dibenzoturan	59000
Fluoranthene	100000
riuorene Uavaablarahangana	10000
nexaciiioiobelizelle	1200

Table 1. Soil Cleanup Objectives, 149 Kent Avenue, Brooklyn, New York

REMEDIAL ENGINEERING, P.C.

	NYSDEC Part 375
Parameter	Restricted
	Residential
Semivolatile Organic Compounds (Con Indeno[1, 2, 3-cd]nyrene	ncentrations in µg/kg) continu 500
Naphthalene	100000
Pentachlorophenol	6700
Phenanthrene	100000
Phenol	100000
Pyrene	100000
Metals (Concentrations in mg/kg)	
Arsenic	16
Barium	400
Bervllium	72
Cadmium	43
Chromium Hexavalent	110
Chromium	180
Copper	270
Lead	400
Manganasa	2000
Moroury	0.81
Niekol	210
NICKEI Salanium	510
	180
Zinc	10000
Pesticides (Concentrations in $\mu g/kg$)	100000
2,4,5-1P	100000
4,4'-DDD	13000
4,4'-DDE	8900
4,4'-DDT	7900
Aldrin	97
alpha-BHC	480
alpha-Chlordane	4200
beta-BHC	360
delta-BHC	100000
Dieldrin	200
Endosulfan I	24000
Endosulfan II	24000
Endosulfan sulfate	24000
Endrin	11000
gamma-BHC (Lindane)	1300
Hentachlor	2100
rieptuenioi	

Table 1. Soil Cleanup Objectives, 149 Kent Avenue, Brooklyn, New York

Total Polychlorinated Biphenyls (Concentrations in µg/kg)

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

NYSDEC - New York State Department of Environmental Conservation

1000

Sample Identification	Depth Interval (ft bffs)
Bottom Confirmation Soil Samples	
A4	15-17
B-1E	16-18
BCS-1	35-37
GWP-1	34-35
RA-11B	33-35
RA-2	33-35
RA-24	38-40
RA-26	29-30
RA-4	33-35
GWP-5	34-35
SCS-6	33-35
Sidewall Confirmation Soil Samples	
SCS-5	10-12
A4-1A	8-10
A4-2A	8-10
A4-3A	8-10
RA-24	10-12, 22-24, 30-31
RA-25	9-11, 23-25, 30-31
RA-26	10-12, 21-23, 29-30
RA-27	10-12, 23-25, 26-27
RA-28	10-12
SCS-1B	28-30
SCS-2A (B-1W2)	28-30

Table 2. List of Confirmation Soil Sample Identifications and Depths149 Kent Avenue, Brooklyn, New York

ft - feet

bffs - below former floor slab

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn Borough Topographic/ Highway Datum.

Table 3. List of Documentation Soil Sample Identifications and Depths149 Kent Avenue, Brooklyn, New York

Sample Identification	Depth Interval (ft bffs)
Bottom Documentation Soil Samples	
SCS-2A (B-1W2)	25-30
BCS-1/HA-1B	20-30
BDS-1	10-14
BDS-2	10-14
BDS-3	10-14
RA-13	11-13
RA-14	11-13
RA-15	11-13
RA-16	11-13
RA-17	10-12
RA-18	11-13
RA-19	12-14
RA-20	11-13
RA-21	10-12
RA-22	7-9 (See Note 1)
RA-23	11-13
RA-5	7-9 (See Note 1)
SDS-1	10-14
SDS-2 (See Note 2)	10-14
A-2	10-15
Sidewall Documentation Soil Samples	
RA-10	10-12, 23-25, 29-30
RA-11A & RA-11B	10-12, 23-25, 33-35
RA-12	11-12.5, 23-25
RA-32	4-6
RA-35	4-6, 6-8
RA-36	8-10, 10-12
SDS-1	10-14
A-2	10-15

Notes:

- 1. Samples RA-5 and RA-22 were collected in the former loading docks, so the floor slab elevation was approximately 3 feet lower than the remainder of the floor slab. Relative to other samples, the actual depth below former floor slab would be 10-12 feet.
- 2. SDS-2 was originally intended to respresent the remaining soil quality in a wedge of soil to remain in that area. However, all soil was removed to a depth of 12 feet below former floor slab in that area; therefore, this sample represents soil quality at the bottom of the excavation.

ft - feet

bffs - below former floor slab

The former floor slab was located at +16 feet elevation as referenced

to the Brooklyn Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-2	RA-4	RA-5	RA-5 DUP	RA-10	RA-10
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	2/25/2013	2/26/2013	2/26/2013	2/26/2013	2/26/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	33-35	7-9	7-9	10-12	23-25
	0.50	itesitetitititi	oround nutor		00 00	00 00	. ,		10 12	20 20
1.1.1.2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,1,2,2-Tetrachloroethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,1,2-Trichloroethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,1-Dichloroethane	270	26000	270		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,1-Dichloroethene	330	100000	330		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.4 U
1,2-Dichlorobenzene	1100	100000	1100		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,2-Dichloroethane	20	3100	20		1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.4 U
1,2-Dichloropropane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
1,4-Dioxane	100	13000	100		170 U	160 U	160 U	160 U	160 U	170 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		7.9 JV	13 UJV	13 UJV	12 UJV	12 UJV	14 UJV
2-Hexanone					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Acetone	50	100000	50		49.1 JV	13 U	13 UJV	12 UJV	12 UJV	14 UJV
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.4 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Bromodichloromethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Bromoform					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Bromomethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Carbon disulfide					13.2	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Carbon tetrachloride	760	2400	760		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-2	RA-4	RA-5	RA-5 DUP	RA-10	RA-10
Parameter	Unrestricted	Restricted	Protection of	Sample Date: 2	2/26/2013	2/25/2013	2/26/2013	2/26/2013	2/26/2013	2/26/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	33-35	7-9	7-9	10-12	23-25
Chlorobenzene	1100	100000	1100		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Chloroethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Chloroform	370	49000	370		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Chloromethane					6.8 U	6.5 U	6.4 UJV	6.2 U	6.2 UJV	6.8 UJV
cis-1,2-Dichloroethene	250	100000	250		5.9 J	1.1 J	6.4 U	6.2 U	6.2 U	2.8 J
cis-1,3-Dichloropropene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Cyclohexane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Dibromochloromethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Dibromochloropropane					14 U	13 U	13 U	12 U	12 U	14 U
Dichlorodifluoromethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.4 U
Freon 113					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
m+p-Xylene					1.4 U	1.3 U	1.3 U	1.2 U	0.8 NJV	1.4 U
Methyl acetate					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Methylcyclohexane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Methylene chloride	50	100000	50		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
MTBE	930	100000	930		1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.4 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					1.4 U	1.3 U	1.3 U	1.2 U	0.32 J	1.4 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA
Styrene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		145 JV	14.9	2 J	1.9 J	101	140
Toluene	700	100000	700		1.4 U	1.3 U	0.48 J	1.2 U	1.2	0.5 J
trans-1,2-Dichloroethene	190	100000	190		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
trans-1,3-Dichloropropene					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		0.31 J	6.5 U	6.4 U	6.2 U	0.38 J	0.98 J

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-2	RA-4	RA-5	RA-5 DUP	RA-10	RA-10
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	2/25/2013	2/26/2013	2/26/2013	2/26/2013	2/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	33-35	7-9	7-9	10-12	23-25
Trichlorofluoromethane					6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		6.8 U	6.5 U	6.4 U	6.2 U	6.2 U	6.8 U
Xylenes (total)	260	100000	1600		1.4 U	1.3 U	1.3 U	1.2 U	1.1 J	1.4 U
Total TIC, Volatile					0	0	0	0	230.7 J	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-10	RA-11A	RA-11B	RA-11B	RA-11B DUP	RA-12
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013	3/21/2013	3/21/2013	2/21/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	29-30	10-12	23-25	33-35	23-25	11-12.5
	0.50	itesitetitititi	Cround nutti		- 20	10 12	20 20	00 00	20 20	11 120
1.1.1.2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,1,2,2-Tetrachloroethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,1,2-Trichloroethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,1-Dichloroethane	270	26000	270		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,1-Dichloroethene	330	100000	330		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					5.5 U	1.2 U	1 U	1.3 U	1.1 U	1.3 U
1,2-Dichlorobenzene	1100	100000	1100		28 U	6 U	5.2 U	0.81 J	5.6 U	6.7 U
1,2-Dichloroethane	20	3100	20		5.5 U	1.2 U	1 U	1.3 U	1.1 U	1.3 U
1,2-Dichloropropane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
1,4-Dioxane	100	13000	100		690 U	150 U	130 U	160 U	140 U	170 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		28.9 JV	12 UJV	10 UJV	13 UJV	11 UJV	13 UJV
2-Hexanone					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Acetone	50	100000	50		196 JV	12 UJV	10 UJV	13 UJV	11 UJV	13 UJV
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		5.5 U	1.2 U	1 U	1.3 U	1.1 U	1.3 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Bromodichloromethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Bromoform					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Bromomethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Carbon disulfide					270	6 U	5.2 U	5.6 J	5.6 U	6.7 U
Carbon tetrachloride	760	2400	760		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-10	RA-11A	RA-11B	RA-11B	RA-11B DUP	RA-12
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013	3/21/2013	3/21/2013	2/21/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	29-30	10-12	23-25	33-35	23-25	11-12.5
(~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-/ • •					
Chlorobenzene	1100	100000	1100		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Chloroethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Chloroform	370	49000	370		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Chloromethane					28 UJV	6 U	5.2 UJV	6.4 UJV	5.6 UJV	6.7 U
cis-1,2-Dichloroethene	250	100000	250		21 J	6 U	1.4 J	21.7	1.3 J	1.9 J
cis-1,3-Dichloropropene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Cyclohexane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Dibromochloromethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Dibromochloropropane					55 U	12 U	10 U	13 U	11 U	13 U
Dichlorodifluoromethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.6 J	1.2 U	1 U	1.3 U	1.1 U	1.3 U
Freon 113					28 UJV	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
m+p-Xylene					5.4 J	1.2 U	1 U	1.3 U	1.1 U	0.39 J
Methyl acetate					28 U	34.6	5.2 U	6.4 U	5.6 U	6.7 U
Methylcyclohexane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Methylene chloride	50	100000	50		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
MTBE	930	100000	930		5.5 U	1.2 U	1 U	1.3 U	1.1 U	1.3 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					2.2 J	1.2 U	1 U	1.3 U	1.1 U	1.3 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA
Styrene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		2910	142	86.3	12200 JV	102	11600
Toluene	700	100000	700		8.5	1.2 U	1 U	1.3 U	1.1 U	1.9
trans-1,2-Dichloroethene	190	100000	190		2.1 J	6 U	5.2 U	6.4 U	5.6 U	6.7 U
trans-1,3-Dichloropropene					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		360	3.1 J	1.5 J	88.8	1.5 J	7.7

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-10	RA-11A	RA-11B	RA-11B	RA-11B DUP	RA-12
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013	3/21/2013	3/21/2013	2/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	29-30	10-12	23-25	33-35	23-25	11-12.5
Trichlorofluoromethane					28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		28 U	6 U	5.2 U	6.4 U	5.6 U	6.7 U
Xylenes (total)	260	100000	1600		7.5	1.2 U	1 U	1.3 U	1.1 U	0.39 J
Total TIC, Volatile					0	80 J	0	0	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-24	RA-24	RA-24	RA-24	RA-25	RA-25
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	22-24	30-31	38-40	9-11	3/18/2013
	0.50	itesitetitititi	Cround water		10 12		00 01	20.10	/ 11	0/10/2010
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,1,2,2-Tetrachloroethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,1,2-Trichloroethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,1-Dichloroethane	270	26000	270		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,1-Dichloroethene	330	100000	330		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U
1,2-Dichlorobenzene	1100	100000	1100		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,2-Dichloroethane	20	3100	20		1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U
1,2-Dichloropropane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
1,4-Dioxane	100	13000	100		140 U	150 U	160 U	150 U	140 U	150 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		11 UJV	12 UJV	13 UJV	12 UJV	11 UJV	12 UJV
2-Hexanone					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Acetone	50	100000	50		11 UJV	12 U	13 UJV	75.6	23.8	12 U
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		0.33 J	1.2 U	0.42 J	0.91 J	0.37 J	1.2 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Bromodichloromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Bromoform					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Bromomethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Carbon disulfide					5.5 U	5.8 U	6.4 U	27.8	5.6 U	5.8 U
Carbon tetrachloride	760	2400	760		5.5 U	5.8 U	1.3 J	5.8 U	5.6 U	5.8 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-24	RA-24	RA-24	RA-24	RA-25	RA-25
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	22-24	30-31	38-40	9-11	3/18/2013
Chlorobenzene	1100	100000	1100		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Chloroethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Chloroform	370	49000	370		5.5 U	5.8 U	2.4 J	5.8 U	5.6 U	5.8 U
Chloromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
cis-1,2-Dichloroethene	250	100000	250		10	5.8 U	43.1	5	1.5 J	5.8 U
cis-1,3-Dichloropropene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Cyclohexane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Dibromochloromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Dibromochloropropane					11 U	12 U	13 U	12 U	11 U	12 U
Dichlorodifluoromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U
Freon 113					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
m+p-Xylene					1.1 U	1.2 U	1.3 U	0.69 J	1.1 U	0.62 J
Methyl acetate					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Methylcyclohexane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Methylene chloride	50	100000	50		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
MTBE	930	100000	930		1.1 U	1.2 U	1.3 U	1.2 U	1.1 U	1.2 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					1.1 U	1.2 U	1.3 U	0.29 J	1.1 U	0.19 J
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA
Styrene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		527	210	737	9.1	93.3	19.7
Toluene	700	100000	700		0.42 J	1.2 U	0.5 J	2.8	0.86 J	0.94 J
trans-1,2-Dichloroethene	190	100000	190		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
trans-1,3-Dichloropropene					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		13.5	0.44 J	11.3	3.6 J	1.1 J	5.8 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-24	RA-24	RA-24	RA-24	RA-25	RA-25
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013	3/18/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	22-24	30-31	38-40	9-11	3/18/2013
Trichlorofluoromethane					5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		5.5 U	5.8 U	6.4 U	5.8 U	5.6 U	5.8 U
Xylenes (total)	260	100000	1600		1.1 U	1.2 U	1.3 U	0.97 J	1.1 U	0.8 J
Total TIC, Volatile					0	320 J	0	58 J	0	50 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	RA-25	RA-26	RA-26	RA-26	RA-35	RA-35	SCS-5
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013	1/13/2014
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	30-31	10-12	21-23	29-30	4 - 6	6 - 8	10-12
(concentrations in µg, ng)	0.50	itesitetitui	oround nuter		00 01	10 12	21 20	27 00		0 0	10 12
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,1,2,2-Tetrachloroethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,1,2-Trichloroethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,1-Dichloroethane	270	26000	270		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,1-Dichloroethene	330	100000	330		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					1.2 U	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
1,2-Dichlorobenzene	1100	100000	1100		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,2-Dichloroethane	20	3100	20		1.2 U	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
1,2-Dichloropropane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
1,4-Dioxane	100	13000	100		150 U	130 U	130 U	140 U	150 U	150 U	NA
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		12 UJV	10 UJV	10 UJV	11 UJV	12 U	12 U	NA
2-Hexanone					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
4-Ethyltoluene					NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Acetone	50	100000	50		12 UJV	10 UJV	10 UJV	11 UJV	12 U	11.6 J	NA
Acrylonitrile					NA	NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		0.7 J	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
Bromobenzene					NA	NA	NA	NA	NA	NA	NA
Bromochloromethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Bromodichloromethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Bromoform					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Bromomethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Carbon disulfide					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Carbon tetrachloride	760	2400	760		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	RA-25	RA-26	RA-26	RA-26	RA-35	RA-35	SCS-5
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013	1/13/2014
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	30-31	10-12	21-23	29-30	4 - 6	6 - 8	10-12
						-	-		-		
Chlorobenzene	1100	100000	1100		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Chloroethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Chloroform	370	49000	370		1.2 J	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Chloromethane					5.8 U	5.2 UJV	5.1 UJV	5.7 U	6 U	6 U	NA
cis-1,2-Dichloroethene	250	100000	250		18.9	5.2 U	5.1 U	5.7 U	1.5 J	1.5 J	NA
cis-1,3-Dichloropropene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Cyclohexane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Dibromochloromethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Dibromochloropropane					12 U	10 U	10 U	11 U	12 U	12 U	NA
Dichlorodifluoromethane					5.8 U	5.2 UJV	5.1 UJV	5.7 U	6 U	6 U	NA
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.2 U	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
Freon 113					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
m+p-Xylene					1.2 U	0.39 J	1 U	1.1 U	1.2 U	1.2 U	NA
Methyl acetate					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Methylcyclohexane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Methylene chloride	50	100000	50		5.8 U	5.2 U	5.1 U	5.7 U	6 U	3.2 J	NA
MTBE	930	100000	930		1.2 U	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
Naphthalene					NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
o-Xylene					1.2 U	1 U	1 U	1.1 U	1.2 U	1.2 U	NA
p-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA	NA
Styrene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		534	6.1	4.9 J	6.6	130	158	1100
Toluene	700	100000	700		1.4	0.38 J	0.25 J	1.1 U	1.2 U	1.2 U	NA
trans-1,2-Dichloroethene	190	100000	190		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
trans-1,3-Dichloropropene					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		5.3 J	5.2 U	5.1 U	5.7 U	3 J	2.4 J	NA

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	RA-25	RA-26	RA-26	RA-26	RA-35	RA-35	SCS-5
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013	1/13/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	30-31	10-12	21-23	29-30	4 - 6	6 - 8	10-12
Trichlorofluoromethane					5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Vinyl acetate					NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		5.8 U	5.2 U	5.1 U	5.7 U	6 U	6 U	NA
Xylenes (total)	260	100000	1600		1.2 U	0.39 J	1 U	1.1 U	1.2 U	1.2 U	NA
Total TIC, Volatile					250 J	0	0	16 J	NA	NA	NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
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Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	SCS-6	RA-27	RA-27	RA-27	RA-28	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	3/19/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	10-12	23-25	26-27	10-12	8 - 10	10 - 12
	0.00	itesitaentitui	oround hater		00 00	10 12	20 20	20 27	10 12	0 10	10 12
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,1,2,2-Tetrachloroethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,1,2-Trichloroethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,1-Dichloroethane	270	26000	270		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,1-Dichloroethene	330	100000	330		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
1,2-Dichlorobenzene	1100	100000	1100		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,2-Dichloroethane	20	3100	20		NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
1,2-Dichloropropane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
1,4-Dioxane	100	13000	100		NA	140 U	160 U	160 U	150 U	150 U	140 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		NA	12 UJV	13 UJV	13 UJV	12 UJV	12 U	11 U
2-Hexanone					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Acetone	50	100000	50		740 U	12 UJV	13 UJV	13 UJV	12 UJV	12 U	11 U
Acrylonitrile					NA	NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
Bromobenzene					NA	NA	NA	NA	NA	NA	NA
Bromochloromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Bromodichloromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Bromoform					NA	5.8 UJV	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Bromomethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Carbon disulfide					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Carbon tetrachloride	760	2400	760		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	SCS-6	RA-27	RA-27	RA-27	RA-28	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	3/19/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	10-12	23-25	26-27	10-12	8 - 10	10 - 12
(2000 Fri - 1 Fri (1 2000)		- •			- •		
Chlorobenzene	1100	100000	1100		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Chloroethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Chloroform	370	49000	370		NA	5.8 U	6.5 U	6.5 U	5.9 U	0.24 J	5.7 U
Chloromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
cis-1,2-Dichloroethene	250	100000	250		NA	5.8 U	6.5 U	1.4 J	5.9 U	6 U	5.7 U
cis-1,3-Dichloropropene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Cyclohexane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Dibromochloromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Dibromochloropropane					NA	12 U	13 U	13 U	12 U	12 U	11 U
Dichlorodifluoromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
Freon 113					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
m+p-Xylene					NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
Methyl acetate					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Methylcyclohexane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Methylene chloride	50	100000	50		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
MTBE	930	100000	930		NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
Naphthalene					NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
o-Xylene					NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA	NA
Styrene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		560	0.37 J	2.3 J	68.6	5.9 U	5890	12.2
Toluene	700	100000	700		NA	1.2 U	0.42 J	0.44 J	1.2 U	1.2 U	1.1 U
trans-1,2-Dichloroethene	190	100000	190		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
trans-1,3-Dichloropropene					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		NA	5.8 U	6.5 U	0.68 J	5.9 U	12.1	5.7 U

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	SCS-6	RA-27	RA-27	RA-27	RA-28	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	3/19/2013	3/19/2013	3/19/2013	3/19/2013	8/5/2013	8/5/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	33-35	10-12	23-25	26-27	10-12	8 - 10	10 - 12
Trichlorofluoromethane					NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Vinyl acetate					NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		NA	5.8 U	6.5 U	6.5 U	5.9 U	6 U	5.7 U
Xylenes (total)	260	100000	1600		NA	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.1 U
Total TIC, Volatile					NA	0	0	0	0	NA	NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC
 - Part 375 Protection of Groundwater Standards
- Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-36 DUP	SDS-1	BDS-2	BDS-2DUP	RA-16	SDS-2
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	1/13/2014	1/13/2014	2/13/2013	1/10/2014
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	10-14	10-14	11-13	10-14
	0.50	itesitetitititi	oround hater		10 12	10 11	10 11	10 11	11 10	10 11
1.1.1.2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		5.9 U	1.1 U	1.2 U	1.1 U	7.4 U	1.0 U
1,1,2,2-Tetrachloroethane					5.9 U	NA	NA	NA	7.4 U	NA
1,1,2-Trichloroethane					5.9 U	NA	NA	NA	7.4 U	NA
1,1-Dichloroethane	270	26000	270		5.9 U	1.6 U	1.8 U	1.7 U	7.4 U	1.5 U
1,1-Dichloroethene	330	100000	330		5.9 U	1.1 U	1.2 U	1.1 U	7.4 U	1.0 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					5.9 U	NA	NA	NA	7.4 U	NA
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					5.9 U	NA	NA	NA	7.4 U	NA
1,2,4-Trimethylbenzene	3600	52000	3600		NA	5.5 U	5.9 U	5.7 U	NA	5.1 U
1,2-Dibromoethane					1.2 U	NA	NA	NA	1.5 U	NA
1,2-Dichlorobenzene	1100	100000	1100		5.9 U	5.5 U	5.9 U	5.7 U	7.4 U	5.1 U
1,2-Dichloroethane	20	3100	20		1.2 U	1.1 U	1.2 U	1.1 U	1.5 U	1.0 U
1,2-Dichloropropane					5.9 U	NA	NA	NA	7.4 U	NA
1,3,5-Trimethylbenzene	8400	52000	8400		NA	5.5 U	5.9 U	5.7 U	NA	5.1 U
1,3-Dichlorobenzene	2400	49000	2400		5.9 U	5.5 U	5.9 U	5.7 U	7.4 U	5.1 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		5.9 U	5.5 U	5.9 U	5.7 U	7.4 U	5.1 U
1,4-Dioxane	100	13000	100		150 U	110 U	120 U	110 U	190 U	100 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		12 U	11. U	12. U	11. U	15 UJV	10. U
2-Hexanone					5.9 U	NA	NA	NA	7.4 U	NA
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					5.9 U	NA	NA	NA	7.4 U	NA
Acetone	50	100000	50		12 U	11. U	14	18	15 UJV	4.9 J
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		1.2 U	1.1 U	1.2 U	1.1 U	1.5 U	1.0 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					5.9 U	NA	NA	NA	7.4 U	NA
Bromodichloromethane					5.9 U	NA	NA	NA	7.4 U	NA
Bromoform					5.9 U	NA	NA	NA	7.4 U	NA
Bromomethane					5.9 U	NA	NA	NA	7.4 U	NA
Carbon disulfide					5.9 U	NA	NA	NA	7.4 U	NA
Carbon tetrachloride	760	2400	760		5.9 U	1.1 U	1.2 U	1.1 U	7.4 U	1.0 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-36 DUP	SDS-1	BDS-2	BDS-2DUP	RA-16	SDS-2
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	1/13/2014	1/13/2014	2/13/2013	1/10/2014
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	10-14	10-14	11-13	10-14
									-	
Chlorobenzene	1100	100000	1100		5.9 U	1.1 U	1.2 U	1.1 U	7.4 U	1.0 U
Chloroethane					5.9 U	NA	NA	NA	7.4 U	NA
Chloroform	370	49000	370		5.9 U	1.6 U	1.8 U	1.7 U	7.4 U	1.5 U
Chloromethane					5.9 U	NA	NA	NA	7.4 U	NA
cis-1,2-Dichloroethene	250	100000	250		5.9 U	1.1 U	1.5	1.4	8.6	1.0 U
cis-1,3-Dichloropropene					5.9 U	NA	NA	NA	7.4 U	NA
Cyclohexane					5.9 U	NA	NA	NA	7.4 U	NA
Dibromochloromethane					5.9 U	NA	NA	NA	7.4 U	NA
Dibromochloropropane					12 U	NA	NA	NA	15 U	NA
Dichlorodifluoromethane					5.9 U	NA	NA	NA	7.4 U	NA
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.2 U	1.1 U	1.2 U	1.1 U	1.5 U	1.0 U
Freon 113					5.9 U	NA	NA	NA	7.4 U	NA
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					5.9 U	NA	NA	NA	7.4 U	NA
m+p-Xylene					1.2 U	2.2 U	2.4 U	2.3 U	1.5 U	2.0 U
Methyl acetate					5.9 U	NA	NA	NA	7.4 U	NA
Methylcyclohexane					5.9 U	NA	NA	NA	7.4 U	NA
Methylene chloride	50	100000	50		5.9 U	11. U	12. U	11. U	7.4 U	10. U
MTBE	930	100000	930		1.2 U	2.2 U	2.4 U	2.3 U	1.5 U	2.0 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	1.1 U	1.2 U	1.1 U	NA	1.0 U
n-Propylbenzene	3900	100000	3900		NA	1.1 U	1.2 U	1.1 U	NA	1.0 U
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					1.2 U	2.2 U	2.4 U	2.3 U	1.5 U	2.0 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	1.1 U	1.2 U	1.1 U	NA	1.0 U
Styrene					5.9 U	NA	NA	NA	7.4 U	NA
tert-Butylbenzene	5900	100000	5900		NA	5.5 U	5.9 U	5.7 U	NA	5.1 U
Tetrachloroethene	1300	19000	1300		12.4	22	1.2 U	1.1 U	0.89 J	1.0 U
Toluene	700	100000	700		1.2 U	1.6 U	1.8 U	1.7 U	0.31 J	1.5 U
trans-1,2-Dichloroethene	190	100000	190		5.9 U	1.6 U	1.8 U	1.7 U	0.96 J	1.5 U
trans-1,3-Dichloropropene					5.9 U	NA	NA	NA	7.4 U	NA
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		0.39 J	5	1.4	1.1 U	25.6	1

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-36 DUP	SDS-1	BDS-2	BDS-2DUP	RA-16	SDS-2
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	1/13/2014	1/13/2014	2/13/2013	1/10/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	10-14	10-14	11-13	10-14
Trichlorofluoromethane					5.9 U	NA	NA	NA	7.4 U	NA
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		5.9 U	2.2 U	1.3 J	0.77 J	7.4 U	2.0 U
Xylenes (total)	260	100000	1600		1.2 U	NA	NA	NA	1.5 U	NA
Total TIC, Volatile					NA	NA	NA	NA	0	NA

J - Estimated value

- U Indicates that the compound was analyzed for but not detected
- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC
 - Part 375 Protection of Groundwater Standards
- Shaded data indicates that parameter was detected above the NYSDEC
 - Part 375 Restricted Residential Standards
- Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Borough Topographic/ Highway Datum.

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	A-4	A4-1A	A4-2A	A4-3A	RA-14	RA-20
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/11/2014	2/14/2014	2/18/2014	2/14/2014	2/12/2013	2/13/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	15 - 17	8 - 10	8 - 10	8 - 10	11-13	11-13
	0.50	itesiterititui	Croundwater		10 17	0 10	0 10	0 10		11 10
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		NA	NA	NA	NA	6.5 U	7.6 U
1,1,2,2-Tetrachloroethane					NA	NA	NA	NA	6.5 U	7.6 U
1,1,2-Trichloroethane					NA	NA	NA	NA	6.5 U	7.6 U
1,1-Dichloroethane	270	26000	270		NA	NA	NA	NA	6.5 U	7.6 U
1,1-Dichloroethene	330	100000	330		NA	NA	NA	NA	6.5 U	7.6 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					NA	NA	NA	NA	6.5 U	7.6 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					NA	NA	NA	NA	6.5 U	7.6 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					NA	NA	NA	NA	1.3 U	1.5 U
1,2-Dichlorobenzene	1100	100000	1100		NA	NA	NA	NA	6.5 U	7.6 U
1,2-Dichloroethane	20	3100	20		NA	NA	NA	NA	1.3 U	1.5 U
1,2-Dichloropropane					NA	NA	NA	NA	6.5 U	7.6 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		NA	NA	NA	NA	6.5 U	7.6 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		NA	NA	NA	NA	6.5 U	7.6 U
1,4-Dioxane	100	13000	100		NA	NA	NA	NA	160 U	190 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		12 U	13 U	12 U	13 U	13 UJV	15 UJV
2-Hexanone					NA	NA	NA	NA	6.5 U	7.6 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					NA	NA	NA	NA	6.5 U	7.6 U
Acetone	50	100000	50		NA	NA	NA	NA	11 JV	15 UJV
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		NA	NA	NA	NA	1.3 U	1.5 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					NA	NA	NA	NA	6.5 U	7.6 U
Bromodichloromethane					NA	NA	NA	NA	6.5 U	7.6 U
Bromoform					NA	NA	NA	NA	6.5 U	7.6 U
Bromomethane					NA	NA	NA	NA	6.5 U	7.6 U
Carbon disulfide					NA	NA	NA	NA	6.5 U	7.6 U
Carbon tetrachloride	760	2400	760		NA	NA	NA	NA	6.5 U	7.6 U
	NYSDEC	NYSDEC	NYSDEC							
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	Part 375	Part 375	Part 375	Sample Designation:	A-4	A4-1A	A4-2A	A4-3A	RA-14	RA-20
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/11/2014	2/14/2014	2/18/2014	2/14/2014	2/12/2013	2/13/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	15 - 17	8 - 10	8 - 10	8 - 10	11-13	11-13
Chlorobenzene	1100	100000	1100		NA	NA	NA	NA	6.5 U	7.6 U
Chloroethane					NA	NA	NA	NA	6.5 U	7.6 U
Chloroform	370	49000	370		NA	NA	NA	NA	0.87 JV	7.6 U
Chloromethane					NA	NA	NA	NA	6.5 U	7.6 U
cis-1,2-Dichloroethene	250	100000	250		NA	NA	NA	NA	6.5 U	7.6 U
cis-1,3-Dichloropropene					NA	NA	NA	NA	6.5 U	7.6 U
Cyclohexane					NA	NA	NA	NA	6.5 U	7.6 U
Dibromochloromethane					NA	NA	NA	NA	6.5 U	7.6 U
Dibromochloropropane					NA	NA	NA	NA	13 U	15 U
Dichlorodifluoromethane					NA	NA	NA	NA	6.5 U	7.6 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		NA	NA	NA	NA	1.3 U	1.5 U
Freon 113					NA	NA	NA	NA	6.5 U	7.6 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					NA	NA	NA	NA	6.5 U	7.6 U
m+p-Xylene					NA	NA	NA	NA	1.3 U	1.5 U
Methyl acetate					NA	NA	NA	NA	6.5 U	7.6 U
Methylcyclohexane					NA	NA	NA	NA	6.5 U	7.6 U
Methylene chloride	50	100000	50		NA	NA	NA	NA	6.5 U	7.6 U
MTBE	930	100000	930		NA	NA	NA	NA	1.3 U	1.5 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					NA	NA	NA	NA	1.3 U	1.5 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA
Styrene					NA	NA	NA	NA	6.5 U	7.6 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		NA	NA	NA	NA	8.3 JV	7.6 U
Toluene	700	100000	700		NA	NA	NA	NA	1.3 U	1.5 U
trans-1,2-Dichloroethene	190	100000	190		NA	NA	NA	NA	6.5 U	7.6 U
trans-1,3-Dichloropropene					NA	NA	NA	NA	6.5 U	7.6 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		1.2 U	1.3 U	0.46 J	43	34.7 JV	7.6 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	A-4	A4-1A	A4-2A	A4-3A	RA-14	RA-20
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/11/2014	2/14/2014	2/18/2014	2/14/2014	2/12/2013	2/13/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	15 - 17	8 - 10	8 - 10	8 - 10	11-13	11-13
Trichlorofluoromethane					NA	NA	NA	NA	65 U	7611
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		NA	NA	NA	NA	6.5 U	7.6 U
Xylenes (total)	260	100000	1600		NA	NA	NA	NA	1.3 U	1.5 U
Total TIC, Volatile					NA	NA	NA	NA	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-23	RA-32	RA-32 DUP	RA-13	RA-17	RA-17 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/13/2013	4/26/2013	4/26/2013	2/14/2013	2/12/2013	2/12/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	4-6	4-6	11-13	10-12	10-12
(2000 F = ·F = (- · 2002).						
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,1,2,2-Tetrachloroethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,1,2-Trichloroethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,1-Dichloroethane	270	26000	270		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,1-Dichloroethene	330	100000	330		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	NA
1,2-Dibromoethane					1.5 U	1.3 U	1.3 U	1.4 U	1.3 U	1.1 U
1,2-Dichlorobenzene	1100	100000	1100		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,2-Dichloroethane	20	3100	20		1.5 U	1.3 U	1.3 U	1.4 U	1.3 U	1.1 U
1,2-Dichloropropane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	2400	49000	2400		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
1,4-Dioxane	100	13000	100		180 U	160 U	160 U	170 U	170 U	140 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		15 UJV	13 UJV	13 UJV	14 UJV	13 UJV	11 UJV
2-Hexanone					7.3 U	6.3 UJV	6.3 UJV	6.8 U	6.7 U	5.6 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Acetone	50	100000	50		15 UJV	24.9 JV	20.4 JV	14 UJV	13 UJV	16.1 JV
Acrylonitrile					NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		1.5 U	0.7 NJV	0.5 J	1.4 U	1.3 U	1.1 U
Bromobenzene					NA	NA	NA	NA	NA	NA
Bromochloromethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Bromodichloromethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Bromoform					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Bromomethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Carbon disulfide					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Carbon tetrachloride	760	2400	760		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-23	RA-32	RA-32 DUP	RA-13	RA-17	RA-17 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/13/2013	4/26/2013	4/26/2013	2/14/2013	2/12/2013	2/12/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	4-6	4-6	11-13	10-12	10-12
				I III (IIII)	-	-	-	-		-
Chlorobenzene	1100	100000	1100		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Chloroethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Chloroform	370	49000	370		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Chloromethane					7.3 U	6.3 U	6.3 U	6.8 UJV	6.7 U	5.6 U
cis-1,2-Dichloroethene	250	100000	250		7.3 U	0.61 J	0.4 J	6.8 U	6.7 U	5.6 U
cis-1,3-Dichloropropene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Cyclohexane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Dibromochloromethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Dibromochloropropane					15 U	13 U	13 U	14 U	13 U	11 U
Dichlorodifluoromethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.5 U	0.93 J	0.5 J	1.4 U	1.3 U	1.1 U
Freon 113					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA
Isopropylbenzene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
m+p-Xylene					1.5 U	3	1.7	0.5 J	1.3 U	0.39 J
Methyl acetate					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Methylcyclohexane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Methylene chloride	50	100000	50		7.3 U	9.7 JV	8.6 JV	6.8 U	6.7 U	5.6 U
MTBE	930	100000	930		1.5 U	1.3 U	1.3 U	1.4 U	1.3 U	1.1 U
Naphthalene					NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA
o-Xylene					1.5 U	1.1 J	0.64 J	1.4 U	1.3 U	1.1 U
p-Chlorotoluene					NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	NA
Styrene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	NA
Tetrachloroethene	1300	19000	1300		0.38 J	3.1 J	1.8 J	0.58 J	6.7 U	5.6 U
Toluene	700	100000	700		0.36 J	1.2 J	0.66 J	1.7	1.3 U	1 J
trans-1,2-Dichloroethene	190	100000	190		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
trans-1,3-Dichloropropene					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		0.71 J	2.5 J	1.8 J	6.8 U	6.7 U	5.6 U

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-23	RA-32	RA-32 DUP	RA-13	RA-17	RA-17 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/13/2013	4/26/2013	4/26/2013	2/14/2013	2/12/2013	2/12/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	4-6	4-6	11-13	10-12	10-12
Trichlorofluoromethane					7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Vinyl acetate					NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		7.3 U	6.3 U	6.3 U	6.8 U	6.7 U	5.6 U
Xylenes (total)	260	100000	1600		1.5 U	4	2.3	0.5 J	1.3 U	0.39 J
Total TIC, Volatile					0	0	0	0	9.9 J	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	B-1E	GWP-5	RA-21	SCS-1B	SCS-2A	BDS-1	RA-15
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2014	5/9/2013	3/15/2013	2/14/2014	2/12/2014	1/9/2014	2/14/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	16 - 18	34-35	10-12	28 - 30	28 - 30	10-14	11-13
	0.50	100100100	Croundwater		10 10	0.00	10 12	20 00	20 20	10 11	11 10
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		NA	6.8 U	5.6 U	NA	NA	1.1 U	6.7 U
1,1,2,2-Tetrachloroethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
1,1,2-Trichloroethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
1,1-Dichloroethane	270	26000	270		NA	6.8 U	5.6 U	NA	NA	1.7 U	6.7 U
1,1-Dichloroethene	330	100000	330		NA	6.8 U	5.6 U	NA	NA	1.1 U	6.7 U
1,1-Dichloropropene					NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
1,2,3-Trichloropropane					NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	NA	NA	NA	5.6 U	NA
1,2-Dibromoethane					NA	1.4 U	1.1 U	NA	NA	NA	1.3 U
1,2-Dichlorobenzene	1100	100000	1100		NA	6.8 U	5.6 U	NA	NA	5.6 U	6.7 U
1,2-Dichloroethane	20	3100	20		NA	1.4 U	1.1 U	NA	NA	1.1 U	1.3 U
1,2-Dichloropropane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	NA	NA	NA	5.6 U	NA
1,3-Dichlorobenzene	2400	49000	2400		NA	6.8 U	5.6 U	NA	NA	5.6 U	6.7 U
1,3-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		NA	6.8 U	5.6 U	NA	NA	5.6 U	6.7 U
1,4-Dioxane	100	13000	100		NA	170 U	140 U	NA	NA	110 U	170 U
2,2-Dichloropropane					NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		NA	14 UJV	11 UJV	NA	NA	11. U	13 UJV
2-Hexanone					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
4-Ethyltoluene					NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Acetone	50	100000	50		NA	14 U	11 UJV	NA	NA	11. U	13 UJV
Acrylonitrile					NA	NA	NA	NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA	NA	NA	NA
Benzene	60	4800	60		NA	1.4 U	1.1 U	NA	NA	1.1 U	0.55 J
Bromobenzene					NA	NA	NA	NA	NA	NA	NA
Bromochloromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Bromodichloromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Bromoform					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Bromomethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Carbon disulfide					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Carbon tetrachloride	760	2400	760		NA	6.8 U	5.6 U	NA	NA	1.1 U	6.7 U

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	B-1E	GWP-5	RA-21	SCS-1B	SCS-2A	BDS-1	RA-15
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2014	5/9/2013	3/15/2013	2/14/2014	2/12/2014	1/9/2014	2/14/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	16 - 18	34-35	10-12	28 - 30	28 - 30	10-14	11-13
(20110111110115 11 µg, µg)	0.00	itesitetitititi	Cround nater		10 10	0.00	10 12	20 00	20 00	10 11	11 10
Chlorobenzene	1100	100000	1100		NA	6.8 U	5.6 U	NA	NA	1.1 U	6.7 U
Chloroethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Chloroform	370	49000	370		NA	6.8 U	5.6 U	NA	NA	1.7 U	6.7 U
Chloromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 UJV
cis-1,2-Dichloroethene	250	100000	250		3.5	6.8 U	5.6 U	NA	NA	1.1 U	6.7 U
cis-1,3-Dichloropropene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Cyclohexane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Dibromochloromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Dibromochloropropane					NA	14 U	11 U	NA	NA	NA	13 U
Dichlorodifluoromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Dichlorodifluoromethane					NA	NA	NA	NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		NA	1.4 U	1.1 U	NA	NA	1.1 U	1.3 U
Freon 113					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Hexachlorobutadiene					NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
m+p-Xylene					NA	1.8	0.58 J	NA	NA	2.2 U	0.92 J
Methyl acetate					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Methylcyclohexane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Methylene chloride	50	100000	50		NA	6.8 U	5.6 U	NA	NA	11. U	6.7 U
MTBE	930	100000	930		NA	1.4 U	1.1 U	NA	NA	2.2 U	1.3 U
Naphthalene					NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	NA	NA	NA	1.1 U	NA
n-Propylbenzene	3900	100000	3900		NA	NA	NA	NA	NA	1.1 U	NA
o-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
o-Xylene					NA	0.7 J	1.1 U	NA	NA	2.2 U	0.4 J
p-Chlorotoluene					NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	NA	NA	NA	1.1 U	NA
Styrene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
tert-Butylbenzene	5900	100000	5900		NA	NA	NA	NA	NA	5.6 U	NA
Tetrachloroethene	1300	19000	1300		NA	7.3	1 J	930	380	1.5	4.3 J
Toluene	700	100000	700		NA	0.59 J	1.1 U	NA	NA	1.7 U	7.5
trans-1,2-Dichloroethene	190	100000	190		1.8 U	6.8 U	5.6 U	NA	NA	1.7 U	6.7 U
trans-1,3-Dichloropropene					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA	NA	NA	NA
Trichloroethene	470	21000	470		NA	6.8 U	5.6 U	NA	NA	1.1 U	0.4 J

	NYSDEC	NYSDEC	NYSDEC								
	Part 375	Part 375	Part 375	Sample Designation:	B-1E	GWP-5	RA-21	SCS-1B	SCS-2A	BDS-1	RA-15
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2014	5/9/2013	3/15/2013	2/14/2014	2/12/2014	1/9/2014	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	16 - 18	34-35	10-12	28 - 30	28 - 30	10-14	11-13
Trichlorofluoromethane					NA	6.8 U	5.6 U	NA	NA	NA	6.7 U
Vinyl acetate					NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	20	900	20		NA	6.8 U	5.6 U	NA	NA	2.2 U	6.7 U
Xylenes (total)	260	100000	1600		NA	2.5	0.58 J	NA	NA	NA	1.3
Total TIC, Volatile					NA	0	0	NA	NA	NA	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC					
	Part 375	Part 375	Part 375	Sample Designation:	RA-22	RA-19	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/15/2013	2/12/2013	1/10/2014	2/15/2013
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	12-14	10-14	11-13
(001001111110115 111 µg/11g)	0.00	100100100	Croundwater				10 11	11 10
1,1,1,2-Tetrachloroethane					NA	NA	NA	NA
1,1,1-Trichloroethane	680	100000	680		5.6 U	6.8 U	1.0 U	5.2 U
1,1,2,2-Tetrachloroethane					5.6 U	6.8 U	NA	5.2 U
1,1,2-Trichloroethane					5.6 U	6.8 U	NA	5.2 U
1,1-Dichloroethane	270	26000	270		5.6 U	6.8 U	1.5 U	5.2 U
1,1-Dichloroethene	330	100000	330		5.6 U	6.8 U	1.0 U	5.2 U
1,1-Dichloropropene					NA	NA	NA	NA
1,2,3-Trichlorobenzene					5.6 U	6.8 U	NA	5.2 U
1,2,3-Trichloropropane					NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene					NA	NA	NA	NA
1,2,4-Trichlorobenzene					5.6 U	6.8 U	NA	5.2 U
1,2,4-Trimethylbenzene	3600	52000	3600		NA	NA	5.1 U	NA
1,2-Dibromoethane					1.1 U	1.4 U	NA	1 U
1,2-Dichlorobenzene	1100	100000	1100		5.6 U	6.8 U	5.1 U	5.2 U
1,2-Dichloroethane	20	3100	20		1.1 U	1.4 U	1.0 U	1 U
1,2-Dichloropropane					5.6 U	6.8 U	NA	5.2 U
1,3,5-Trimethylbenzene	8400	52000	8400		NA	NA	5.1 U	NA
1,3-Dichlorobenzene	2400	49000	2400		5.6 U	6.8 U	5.1 U	5.2 U
1,3-Dichloropropane					NA	NA	NA	NA
1,4-Dichlorobenzene	1800	13000	1800		5.6 U	6.8 U	5.1 U	5.2 U
1,4-Dioxane	100	13000	100		140 U	170 UJV	100 U	130 U
2,2-Dichloropropane					NA	NA	NA	NA
2-Butanone (MEK)	120	100000	120		11 UJV	14 UJV	10. U	10 UJV
2-Hexanone					5.6 U	6.8 U	NA	5.2 U
4-Ethyltoluene					NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)					5.6 U	6.8 U	NA	5.2 U
Acetone	50	100000	50		19.5 JV	25.3 JV	10 U	34.6 JV
Acrylonitrile					NA	NA	NA	NA
Benzene, 1,4-Diethyl					NA	NA	NA	NA
Benzene	60	4800	60		1.1 U	1.4 U	1.0 U	1 U
Bromobenzene					NA	NA	NA	NA
Bromochloromethane					5.6 U	6.8 U	NA	5.2 U
Bromodichloromethane					5.6 U	6.8 U	NA	5.2 U
Bromoform					5.6 U	6.8 U	NA	5.2 U
Bromomethane					5.6 U	6.8 U	NA	5.2 U
Carbon disulfide					5.6 U	6.8 U	NA	0.28 J
Carbon tetrachloride	760	2400	760		5.6 U	6.8 U	1.0 U	5.2 U

	NYSDEC	NYSDEC	NYSDEC					
	Part 375	Part 375	Part 375	Sample Designation:	RA-22	RA-19	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/15/2013	2/12/2013	1/10/2014	2/15/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	12-14	10-14	11-13
(00000000000000000000000000000000000000				2F.: - ·F.:: (-: 22):	. ,			
Chlorobenzene	1100	100000	1100		5.6 U	6.8 U	1.0 U	5.2 U
Chloroethane					5.6 U	6.8 U	NA	5.2 U
Chloroform	370	49000	370		5.6 U	6.8 U	1.5 U	5.2 U
Chloromethane					5.6 U	6.8 U	NA	5.2 U
cis-1,2-Dichloroethene	250	100000	250		5.6 U	6.8 U	1.0 U	5.2 U
cis-1,3-Dichloropropene					5.6 U	6.8 U	NA	5.2 U
Cyclohexane					5.6 U	6.8 U	NA	5.2 U
Dibromochloromethane					5.6 U	6.8 U	NA	5.2 U
Dibromochloropropane					11 U	14 U	NA	10 U
Dichlorodifluoromethane					5.6 U	6.8 U	NA	5.2 U
Dichlorodifluoromethane					NA	NA	NA	NA
Diethyl Ether					NA	NA	NA	NA
Ethylbenzene	1000	41000	1000		1.1 U	1.4 U	1.0 U	1 U
Freon 113					5.6 U	6.8 U	NA	5.2 U
Hexachlorobutadiene					NA	NA	NA	NA
Isopropylbenzene					5.6 U	6.8 U	NA	5.2 U
m+p-Xylene					0.45 J	1.4 U	2.0 U	0.21 J
Methyl acetate					5.6 U	6.8 U	NA	5.2 U
Methylcyclohexane					5.6 U	6.8 U	NA	5.2 U
Methylene chloride	50	100000	50		5.6 U	6.8 U	10. U	5.2 U
MTBE	930	100000	930		1.1 U	1.4 U	2.0 U	1 U
Naphthalene					NA	NA	NA	NA
n-Butylbenzene	12000	100000	12000		NA	NA	1.0 U	NA
n-Propylbenzene	3900	100000	3900		NA	NA	1.0 U	NA
o-Chlorotoluene					NA	NA	NA	NA
o-Xylene					1.1 U	1.4 U	2.0 U	1 U
p-Chlorotoluene					NA	NA	NA	NA
p-Isopropyltoluene					NA	NA	NA	NA
sec-Butylbenzene	11000	100000	11000		NA	NA	1.0 U	NA
Styrene					5.6 U	6.8 U	NA	5.2 U
tert-Butylbenzene	5900	100000	5900		NA	NA	5.1 U	NA
Tetrachloroethene	1300	19000	1300		0.39 J	1.7 J	1.0 U	5.2 U
Toluene	700	100000	700		1.2	2.1	1.5 U	0.37 J
trans-1,2-Dichloroethene	190	100000	190		5.6 U	6.8 U	1.5 U	5.2 U
trans-1,3-Dichloropropene					5.6 U	6.8 U	NA	5.2 U
trans-1,4-Dichloro-2-butene					NA	NA	NA	NA
Trichloroethene	470	21000	470		5.6 U	6.8 U	1.0 U	5.2 U

	NYSDEC	NYSDEC	NYSDEC					
	Part 375	Part 375	Part 375	Sample Designation:	RA-22	RA-19	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/15/2013	2/12/2013	1/10/2014	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	12-14	10-14	11-13
Trichlorofluoromethane					5.6 U	6.8 U	NA	5.2 U
Vinyl acetate					NA	NA	NA	NA
Vinyl chloride	20	900	20		5.6 U	6.8 U	2.0 U	5.2 U
Xylenes (total)	260	100000	1600		0.45 J	1.4 U	NA	0.21 J
Total TIC, Volatile					0	0	NA	0

J - Estimated value

- U Indicates that the compound was analyzed for but not detected
- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- UJ The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available
- Bold data indicates that parameter was detected above the NYSDEC
 - Part 375 Protection of Groundwater Standards
- Shaded data indicates that parameter was detected above the NYSDEC
 - Part 375 Restricted Residential Standards
- Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Parameter (Concentrations in gr/kg) Unrestricted Use Residential Residential Groundwater Sample Depth (It bffs): Sample Depth (It bffs): 20:30 7:49 7:49 10:12 1.1'Biphenyl - - - - 430 U 65 U 64 U 63 U 1.2:4,5-Tetrachlorobenzene - - - 100 U NA NA NA 1.2:Abitorobenzene - - - 190 U NA NA NA 1.2:Dichlorobenzene - - - 190 U NA NA NA 2:2:oxytsi (-Liolkorophenol) - - - - 160 U <		NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	HA-1B	RA-5	RA-5 DUP	RA-10
(Concentrations in µg/kg) Use Residential Groundwater Sample Depth (ft bffs): 20.30 7.9 7.9 10.12 1.1'-Biphenyl 430 U 65 U 64 U 63 U 1.2.4.5-Tichtorobenzene 190 U NA NA NA 1.2.4.Trichtorobenzene 190 U NA NA NA 1.2.Dichlorobenzene 190 U NA NA NA 1.4.Dicktorobenzene 190 U NA NA NA 2.3.4.6.Tetrakhlorophenol 190 U 160 U	Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	2/26/2013	2/26/2013	2/26/2013
1.1-Biphenyl430 U65 U64 U63 U $1,2,4,5$ -Terrachlorobenzene190 U160 U160 U160 U $1,2,1$ richlorobenzene190 UNANANA $1,2$ -Dichlorobenzene190 UNANANA $1,3$ -Dichlorobenzene190 UNANANA $1,4$ -Dichlorobenzene190 UNANANA $2,2$ -oxybis (1-khloropropane)230 U65 U64 U63 U $2,2$ -oxybis (1-khlorophenol230 U65 U64 U63 U $2,4,6$ -Trichlorophenol110 U160 U160 U160 U $2,4,6$ -Trichlorophenol110 U160 U160 U160 U $2,4,6$ -Trichlorophenol190 U65 U64 U63 U $2,4,6$ -Trichlorophenol190 U65 U64 U	(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	20-30	7-9	7-9	10-12
1.1 - Spinchy 400 U 60 U 60 U 60 U 60 U 160 U <td< td=""><td>1 1' Dinhanyl</td><td></td><td></td><td></td><td></td><td>420 U</td><td>65 U</td><td>64 U</td><td>62 U</td></td<>	1 1' Dinhanyl					420 U	65 U	64 U	62 U
1.2.4.Trichlorobenzene 190 U NA NA NA 1.2.4.Trichlorobenzene 190 U NA NA NA 1.3.Dichlorobenzene 190 U NA NA NA 1.4.Dichlorobenzene 190 U NA NA NA 2.3.4.6.Tertachlorophenol NA 160 U 160 U <td>1,2,4,5 Tatrachlorobonzono</td> <td></td> <td></td> <td></td> <td></td> <td>430 U 100 U</td> <td>160 U</td> <td>04 U 160 U</td> <td>160 U</td>	1,2,4,5 Tatrachlorobonzono					430 U 100 U	160 U	04 U 160 U	160 U
1.2-bichlorobenzene10 UNANANA1.3-bichlorobenzene190 UNANANA1.4-bichlorobenzene190 UNANANA1.4-bichlorobenzene190 UNANANA2.2-oxybis (1-chloropropae)190 UNANANA2.3-6.5Trichlorophenol190 U160 U160 U160 U2.4-6.5Trichlorophenol190 U160 U160 U160 U2.4-6.5Trichlorophenol190 U160 U160 U160 U2.4-5Trichlorophenol190 U160 U160 U160 U2.4-5Drichlorophenol190 U160 U160 U160 U2.4-5Drichlorophenol190 U65 U64 U63 U2.4-5Drichlorophenol190 U65 U64 U63 U2.4-5Drichlorophenol190 U160 U160 U160 U2.4-5Drichlorophenol190 U65 U64 U63 U2.4-5Drichlorophenol190 U160 U160 U160 U2.4-5Drichlorophenol190 U160 U160 U160 U2.4-5Drichlorophenol<	1,2,4,5-Tetrachiorobenzene					190 U 100 U	NA	NA	NA
1.2-Dichlorobenzene 190 U NA NA NA 1.4-Dichlorobenzene 190 U NA NA NA 2.2-oxybis (1-chloropropane) 230 U 65 U 64 U 63 U 2.3.4.6-Trichlorophenol 230 U 65 U 160 U 160 U 160 U 2.4-Dichlorophenol 110 U 160 U 160 U 160 U 160 U 2.4-Dichlorophenol 110 U 160 U 160 U 160 U 160 U 2.4-Dichlorophenol 190 U 65 U 64 U 63 U 2.4-Dinitroblene 190 U 65 U 64 U 63 U 2.4-Dinitroblene 190 U 65 U 64 U 63 U 2.6-Dinitroblene 190 U 160 U 160 U 160 U 2.4-Dinitroblene	1,2,4-Themorobenzene					190 U 100 U	NA	NA	NA
1.4-Dicklardbordenzene 100 U NA NA NA 2.4-Dicklorophenol 230 U 65 U 64 U 63 U 2.3,4,6-Tetrachlorophenol 100 U 160 U <t< td=""><td>1.3 Dichlorobenzene</td><td></td><td></td><td></td><td></td><td>190 U 100 U</td><td>NA</td><td>NA</td><td>NA</td></t<>	1.3 Dichlorobenzene					190 U 100 U	NA	NA	NA
1,+-DicklobOcelizatie230 U61 UNANANA2,2-oxybic(1-chloroppane)230 U65 U64 U60 U2,4,6-Trichlorophenol110 U160 U160 U160 U2,4,6-Trichlorophenol110 U160 U160 U160 U2,4-5-Trichlorophenol110 U160 U160 U160 U2,4-5-Trichlorophenol110 U160 U160 U160 U2,4-5-Trichlorophenol190 U160 U160 U160 U2,4-Dinitroblene190 U65 U64 U63 U2,4-Dinitroblene190 U65 U64 U63 U2,6-Dinitroblene190 U65 U64 U63 U2,6-Dinitroblene190 U160 U160 U160 U2,6-Dinitroblene190 U65 U64 U63 U2,6-Dinitroblene190 U65 U64 U63 U2,6-Dinitroblene190 U160 U160 U160 U2,6-Dinitroblene190 U160 U160 U160 U2,6-Dinitroblene190 U160 U160 U160 U2,6-Dinitroblene	1,4 Dichlorobenzene					190 U 100 U	NA	NA	NA
22.5000 (1-thiopippind) $1 1 1 2.500$ 650 640 660 1600 $23.4.6$ -Titchlorophenol $$ $$ 1900 1600 1600 1600 $2.4.5$ -Trichlorophenol $$ $$ 1100 1600 1600 1600 $2.4.0$:klorophenol $$ $$ 1100 1600 1600 1600 $2.4.0$:klorophenol $$ $$ $$ 1900 1600 1600 1600 $2.4.0$:klorophenol $$ $$ $$ 1900 6500 6400 6300 $2.4.0$:klorophenol $$ $$ $$ 1900 6500 6400 6300 $2.4.0$:klorophenol $$ $$ $$ 19000 6500 6400 63000 $2.4.0$:klorophenol $$ $$ $$ 19000 6500 6400 63000 $2.4.0$:klorophenol $$ $$ $$ 19000 6500 6400 63000 $2.6.0$:klorophenol $$ $$ $$ 19000 16000 16000 16000 2.0 :Klorophenol $$ $$ $$ 19000 6500 6400 63000 2.0 :Klorophenol $$ $$ $$ 19000 16000 16000 2.0 :Klorophenol $$ $$ $$ 19000 16000 16000 2.0 :Klorophenol $$ $$ $$ 19000 16000 16000 2.0 :Klorophenol $$ </td <td>2.2' ovubis (1. obleropropaga)</td> <td></td> <td></td> <td></td> <td></td> <td>190 U 220 U</td> <td>65 U</td> <td>INA 64 U</td> <td>1NA 62 U</td>	2.2' ovubis (1. obleropropaga)					190 U 220 U	65 U	INA 64 U	1NA 62 U
2.3.4.0 Futurinty field $$ $$ $$ $$ $100 \ U$ 2.4.5 Trichlorophenol $$ $$ $$ $110 \ U$ $160 \ U$ $160 \ U$ $160 \ U$ 2.4.5 Trichlorophenol $$ $$ $$ $110 \ U$ $160 \ U$ $160 \ U$ $160 \ U$ 2.4-Dinitroblenol $$ $$ $$ $170 \ U$ $160 \ U$ $160 \ U$ $160 \ U$ 2.4-Dinitroblene $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ $160 \ U$ 2.4-Dinitroblene $$ $$ $$ $190 \ U$ $65 \ U$ $64 \ U$ $63 \ U$ 2.4-Dinitroblene $$ $$ $$ $190 \ U$ $65 \ U$ $64 \ U$ $63 \ U$ 2.Chloronphthalene $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ $160 \ U$ 2.Chloronphthalene $$ $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ 2.Methylphenol 330 100000 330 $190 \ U$ $65 \ U$ $64 \ U$ $63 \ U$ 2.Nitrophenol $$ $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ 2.Nitrophenol $$ $$ $$ $$ $$ $$ 2.Nitrophenol $$ $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ 3.3-Dichorobenzidine $$ $$ $$ $$ $190 \ U$ $160 \ U$ $160 \ U$ 3.4-Dintr	2,2 - Oxydis (1-chlorophopale)					230 U NA	160 U	04 U 160 U	160 U
2+4.5 Trichhorophenol $$ $$ $$ 100 U 100 U 100 U 100 U 100 U $2.4.5$ Trichhorophenol $$ $$ $$ 110 U 160 U 160 U 160 U $2.4-Dincthylphenol$ $$ $$ $$ 190 U 160 U 160 U 160 U $2.4-Dinitrophenol$ $$ $$ $$ 910 U 650 U 640 U 630 U $2.4-Dinitrotoluene910 U65 U64 U63 U2.6-Dinitrotoluene190 U65 U64 U63 U2.6-Dinitrotoluene190 U65 U64 U63 U2.6-Dinitrotoluene190 U160 U160 U160 U2.6-Dinitrotoluene190 U160 U160 U160 U2.6-Dinitrotoluene190 U160 U160 U160 U2.0-Mtriylnaphtalene190 U160 U160 U160 U2.Ntrophenol190 U160 U160 U160 U2.Ntrophenol190 U160 U160 U160 U2.Ntrophenol190 U160 U160 U160 U3.3Dichlorobenzidine$	2,4,5 Trichlorophonol					100 U	160 U	160 U	160 U
$2,4$ -brithonophenol $$ $$ $$ $$ $$ 170 U 160 U 160 U 160 U $2,4$ -Dinitrophenol $$ $$ $$ 170 U 160 U 160 U 160 U $2,4$ -Dinitrophenol $$ $$ $$ 190 U 160 U 160 U 160 U $2,4$ -Dinitrophenol $$ $$ $$ 190 U 65 U 64 U 63 U $2,6$ -Dinitrotoluene $$ $$ $$ 190 U 65 U 64 U 63 U $2,6$ -Dinitrotoluene $$ $$ $$ 190 U 65 U 64 U 63 U $2,6$ -Dinitrotoluene $$ $$ $$ 190 U 65 U 64 U 63 U $2,6$ -Dinitrotoluene $$ $$ $$ 190 U 160 U 160 U 160 U 2.6 -Dinitrotoluene $$ $$ $$ 190 U 65 U 64 U 63 U 2.6 -Dinitrotoluene $$ $$ $$ 190 U 160 U 160 U 160 U $2.Methylphenol330100000330270 U65 U64 U63 U2.Nitrophenol190 U160 U160 U160 U2.Nitrophenol190 U160 U160 U160 U3.3^{-Dichlorobenzidine190 U160 U160 U160 U4.6-Dinitro-2-methylphenol<$	2,4,5-Trichlorophenol					190 U 110 U	160 U	160 U	160 U
2,4-Dimbrophend100 U100 U100 U100 U100 U2,4-Dimitrophenol910 U650 U640 U630 U2,4-Dimitrotoluene190 U65 U64 U63 U2,6-Dinitrotoluene190 U65 U64 U63 U2,6-Dinitrotoluene190 U160 U160 U160 U2,6-Dinitrotoluene190 U65 U64 U63 U2-Chlorophenol190 U160 U160 U160 U2-Methylphenol330100000330190 U65 U64 U63 U2-Nitrophenol230 U65 U64 U63 U2-Nitrophenol190 U160 U160 U160 U2-Nitrophenol410 U160 U160 U160 U3-Nitroaniline190 U160 U160 U160 U3-Nitroaniline190 U160 U160 U160 U4-Bromophenyl phenyl ether190 U160 U160 U160 U4-Chloron-3-methylphenol190 U160 U160 U160 U4-Chlorophenyl phenyl ether190 U160 U160 U160 U	2.4.0-Inchlorophenol					170 U	160 U	160 U	160 U
2_4 -DimitryInerol $$ $$ $$ 1900 1600 <	2.4 Dimethylphonol					100 U	160 U	160 U	160 U
2,4-Dinitophenol910 U65 U64 U63 U2,4-Dinitrotoluene190 U65 U64 U63 U2,6-Dinitrotoluene190 U65 U64 U63 U2,6-Dinitrotoluene190 U65 U64 U63 U2-Chlorophenol190 U160 U160 U160 U2-Methylphenol330100000330190 U65 U64 U63 U2-Nitrophenol230 U65 U64 U63 U2-Nitrophenol190 U160 U160 U160 U2-Nitrophenol190 U160 U160 U160 U3.30100000330330270 U65 U64 U63 U3.3'-Dichlorobenzidine410 U160 U160 U3.30100000330270 U65 U64 U63 U3.3'-Dichlorobenzidine190 U160 U160 U3.4'-Dichlorobenzidine190 U160 U160 U3.4'-Dichlorobenzidine190 U160 U160 U4.6'-Dinitro-2-methylphenol190 U160 U160 U4-Chloron-3-methylphenol190 U160 U160 U <tr< td=""><td>2,4-Dimensiphenol</td><td></td><td></td><td></td><td></td><td>190 U 010 U</td><td>100 U 650 U</td><td>100 U</td><td>100 U 620 U</td></tr<>	2,4-Dimensiphenol					190 U 010 U	100 U 650 U	100 U	100 U 620 U
2,4-Dimittotitue 190 U 65 U 64 U 63 U 2,6-Dinitrotoluene 190 U 65 U 64 U 63 U 2-Chloronaphthalene 190 U 65 U 64 U 63 U 2-Chlorophenol 190 U 65 U 64 U 63 U 2-Methylphenol 330 100000 330 190 U 65 U 64 U 63 U 2-Nitroaniline 230 U 65 U 64 U 63 U 2-Nitrophenol 230 U 65 U 64 U 63 U 2-Nitrophenol 230 U 65 U 64 U 63 U 3.3'-Dichlorobenzidine 410 U 160 U 160 U 160 U 3.3'-Dichlorobenzidine 190 U 160 U 160 U 160 U 4.6-Dinitro-2-methylphenol 190 U 160 U 160 U 160 U	2,4-Dinitrophenol					910 U 100 U	65 U	040 U	62 U
2.0-Dimitvoluence 190 U 65 U 64 U 63 U 2-Chlorophenol 190 U 160 U 160 U 160 U 160 U 2-Methylnaphthalene 230 U 65 U 64 U 63 U 2-Methylphenol 330 100000 330 190 U 65 U 64 U 63 U 2-Mitroaniline 230 U 65 U 64 U 63 U 2-Nitroaniline 230 U 65 U 64 U 63 U 2-Nitroaniline 190 U 160 U 160 U 160 U 3,3'-Dichlorobenzidine 190 U 160 U 160 U 160 U 3,3'-Dichlorobenzidine 190 U 160 U 160 U 160 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 160 U 4-Chloro-3-methylphenol	2,4-Dimitrotoluene					190 U 100 U	65 U	04 U 64 U	63 U
2-Chlorohaphmalence 11	2. Chloronanhthalene					190 U 100 U	65 U	64 U	63 U
2-Methylphenol 230 U 65 U 64 U 63 U 2-Methylphenol 330 100000 330 190 U 65 U 64 U 63 U 2-Nitroaniline 190 U 160 U 160 U 60 U 2-Nitroaniline 190 U 160 U 160 U 160 U 160 U 2-Nitroaniline 190 U 160 U	2 Chlorophenol					190 U 100 U	160 U	160 U	160 U
2-Methylphenol 330 100000 330 190 U 65 U 64 U 63 U 2-Methylphenol 190 U 160 U 160 U 160 U 2-Nitrophenol 190 U 160 U 160 U 160 U 3&4-Methylphenol 330 100000 330 270 U 65 U 64 U 63 U 3&4-Methylphenol 410 U 160 U 160 U 160 U 3&4-Methylphenol 330 100000 330 270 U 65 U 64 U 63 U 3,3'-Dichlorobenzidine 190 U 160 U 160 U 160 U 4,6-Dinitro-2-methylphenol 190 U 65 U 64 U 63 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U	2 Mathylnanbthalana					230 U	65 U	64 U	63 U
2-Nitroaniline190 U160 U160 U160 U2-Nitroaniline190 U160 U160 U160 U3&4-Methylphenol330100000330270 U65 U64 U63 U3,3'-Dichlorobenzidine190 U160 U160 U160 U3-Nitroaniline190 U160 U160 U160 U3-Nitroaniline190 U160 U160 U160 U4,6-Dinitro-2-methylphenol190 U650 U640 U630 U4-Chloro-3-methylphenol190 U65 U64 U63 U4-Chloro-3-methylphenol190 U160 U160 U160 U4-Chloro-3-methylphenol190 U160 U160 U160 U4-Chloro-3-methylphenol190 U160 U160 U160 U4-Chlorophenyl phenyl ether190 U160 U160 U160 U4-Nitroaniline190 U160 U160 U160 U4-Nitroaniline190 U160 U160 U160 U4-Nitroaniline190 U160 U160 U160 U4-Nitrophenol190 U <td>2 Mathylphanol</td> <td>330</td> <td>100000</td> <td>330</td> <td></td> <td>230 U 100 U</td> <td>65 U</td> <td>04 U 64 U</td> <td>63 U</td>	2 Mathylphanol	330	100000	330		230 U 100 U	65 U	04 U 64 U	63 U
2-Nitrobannic 19000 16000 16000 16000 2-Nitrophenol 41000 16000 16000 16000 3&4-Methylphenol 330 100000 330 27000 6500 6400 6300 3,3'-Dichlorobenzidine 19000 16000 16000 16000 3-Nitroaniline 19000 16000 16000 16000 3-Nitroaniline 19000 16000 16000 16000 4-Bromophenyl phenyl ether 19000 65000 64000 63000 4-Chloro-3-methylphenol 19000 16000 16000 16000 4-Chloro-3-methylphenol 19000 16000 16000 16000 4-Chlorophenyl phenyl ether 19000 16000 16000 4-Nitroaniline 19000<	2 Nitroaniline	550	100000	550		190 U 100 U	160 U	160 U	160 U
2-Nitrophenol 330 100000 330 270 U 65 U 64 U 63 U 3&4-Methylphenol 190 U 160 U 160 U 160 U 65 U 3.3'-Dichlorobenzidine 190 U 160 U 160 U 160 U 160 U 3-Nitroaniline 190 U 160 U 160 U 160 U 160 U 4-G-Dinitro-2-methylphenol 190 U 65 U 64 U 63 U 4-Bromophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Chloroa-3-methylphenol 190 U 160 U 160 U 160 U 4-Chloroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U <tr< td=""><td>2 Nitrophenol</td><td></td><td></td><td></td><td></td><td>190 U 410 U</td><td>160 U</td><td>160 U</td><td>160 U</td></tr<>	2 Nitrophenol					190 U 410 U	160 U	160 U	160 U
3.3'-Dichlorobenzidine190 U160 U160 U160 U3.Nitroaniline190 U160 U160 U160 U4.6-Dinitro-2-methylphenol490 U650 U64 U630 U4-Bromophenyl phenyl ether190 U160 U160 U630 U4-Chloro-3-methylphenol190 U65 U64 U63 U4-Chloro-3-methylphenol190 U160 U160 U160 U4-Chlorophenyl phenyl ether190 U160 U160 U160 U4-Chlorophenyl phenyl ether190 U160 U160 U160 U4-Chlorophenyl phenyl ether190 U160 U160 U160 U4-Nitroaniline190 U160 U160 U160 U4-Nitrophenol190 U160 U160 U160 U4-Nitrophenol190 U160 U160 U160 U4-Nitrophenol190 U330 U320 U310 UAcenaphthene2000010000098000150 U32 U22 U31 U	2-Mitophenol	330	100000	330		410 U 270 U	65 U	100 U	63 U
3-Dictionoberizative 190 U 100 U 100 U 100 U 3-Nitroaniline 190 U 160 U 160 U 160 U 4,6-Dinitro-2-methylphenol 490 U 650 U 640 U 630 U 4-Bromophenyl phenyl ether 190 U 160 U 160 U 630 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 63 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U<	3 3' Dichlorobanzidina	550	100000	550		270 U 100 U	160 U	160 U	160 U
4,6-Dinitro-2-methylphenol 490 U 650 U 640 U 630 U 4-Bromophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 63 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 160 U 4-Chloroaniline 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene	3 Nitroanilina					190 U 100 U	160 U	160 U	160 U
4-Bromophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Bromophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Chloro-3-methylphenol 190 U 160 U 160 U 160 U 4-Chloroaniline 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4.6 Dinitro 2 mathylphanol					190 U 400 U	650 U	100 U 640 U	630 U
4-Bioinophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Chloroaniline 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4.0-Dimuo-2-methylphenol					490 U 100 U	65 U	64 U	63 U
4-Chloroaniline 100 U 100 U 100 U 100 U 4-Chloroaniline 190 U 160 U 160 U 160 U 4-Chlorophenyl phenyl ether 190 U 160 U 160 U 63 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4 Chloro 3 methylphonol					190 U 100 U	160 U	160 U	160 U
4-Chlorophenyl phenyl ether 190 U 65 U 64 U 63 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitroaniline 190 U 160 U 160 U 160 U 4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4 Chloroanilina					190 U 100 U	160 U	160 U	160 U
4-Choropheny pheny energy energy of the set of	4 Chlorophonyl phonyl othor					190 U 100 U	65 U	100 U	63 U
4-Nitrophenol 260 U 330 U 320 U 310 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4 Nitroanilina					190 U 100 U	160 U	160 U	160 U
4-reference 2000 100000 98000 150 U 33 U 32 U 31 U Acenaphthene 20000 100000 98000 150 U 33 U 32 U 31 U	4 Nitrophonol					150 U 260 U	220 U	220 U	210 U
Acenaphinene 20000 100000 96000 150 U 55 U 52 U 51 U	4-minophenoi	20000				200 U	22 U	320 U 22 U	21 U
-0.00000000000000000000000000000000000	A conorphthylono	20000	100000	107000		150 U	33 U 32 U	32 U 32 U	31 U 31 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	HA-1B	RA-5	RA-5 DUP	RA-10
Paramatar	Unrestricted	Postrictod	Protection of	Sample Designation	1/13/2014	2/26/2013	2/26/2013	2/26/2013
(Concentrations in ug/kg)	Uniesuicieu	Residential	Groundwater	Sample Date: Sample Denth (ft hffs):	20.30	7.0	7 0	2/20/2013
(Concentrations in µg/kg)	Use	Residential	Gloundwater	Sample Depth (It bils).	20-30	1-9	1-2	10-12
Acetophenone					190 U	160 U	160 U	160 U
Anthracene	100000	100000	1000000		110 U	33 U	32 U	40.9
Atrazine					NA	160 U	160 U	160 U
Benzaldehyde					NA	160 U	160 U	160 U
Benzo[a]anthracene	1000	1000	1000		110 U	33 U	32 U	91.9
Benzo[a]pyrene	1000	1000	22000		150 U	33 U	32 U	89.3
Benzo[b]fluoranthene	1000	1000	1700		110 U	33 U	32 U	83.6
Benzo[g,h,i]perylene	100000	100000	1000000		150 U	33 U	32 U	66
Benzo[k]fluoranthene	800	3900	1700		110 U	33 U	32 U	72.2
Benzoic Acid					610 U	NA	NA	NA
Benzyl Alcohol					190 U	NA	NA	NA
Bis(2-chloroethoxy)methane					200 U	65 U	64 U	63 U
Bis(2-chloroethyl) ether					170 U	65 U	64 U	63 U
Bis(2-ethylhexyl) phthalate					190 U	65 U	64 U	90.4
Butylbenzyl phthalate					190 U	65 U	64 U	63 U
Caprolactam					NA	65 U	64 U	63 U
Carbazole					190 U	65 U	64 U	15.6 J
Chrysene	1000	3900	1000		110 U	33 U	32 U	93.5
Dibenzo[a,h]anthracene	330	330	1000000		110 U	33 U	32 U	29.2 J
Dibenzofuran	7000	59000	210000		190 U	65 U	64 U	63 U
Diethyl phthalate					190 U	65 U	64 U	63 U
Dimethyl phthalate					190 U	44.5 J	42.2 J	63 U
Di-n-butyl phthalate					190 U	65 U	64 U	63 U
Di-n-octyl phthalate					190 U	65 U	64 U	63 U
Fluoranthene	100000	100000	1000000		110 U	33 U	32 U	191
Fluorene	30000	100000	386000		190 U	33 U	32 U	12.9 J
Hexachlorobenzene	330	1200	3200		110 U	65 U	64 U	63 U
Hexachlorobutadiene					190 U	33 U	32 U	31 U
Hexachlorocyclopentadiene					540 U	330 U	320 U	310 U
Hexachloroethane					150 U	160 U	160 U	160 U
Indeno[1,2,3-cd]pyrene	500	500	8200		150 U	33 U	32 U	64.5
Isophorone					170 U	65 U	64 U	63 U
Naphthalene	12000	100000	12000		190 U	33 U	32 U	31 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	HA-1B	RA-5	RA-5 DUP	RA-10
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	2/26/2013	2/26/2013	2/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	20-30	7-9	7-9	10-12
Nitrobenzene n-Nitrosodi-n-propylamine n-Nitrosodiphenylamine			 		170 U 190 U 150 U	65 U 65 U 160 U	64 U 64 U 160 U	63 U 63 U 160 U
Pentachlorophenol Phenanthrene	800	6700 100000	800		150 U 110 U	330 U 33 U	320 U 32 U	310 U 133
Phenol	330	100000	330		190 U	65 U	64 U	63 U
Pyrene	100000	100000	1000000		110 U	33 U	32 U	171
Total TIC, Semi-Volatile					NA	10320 J	4200 J	2470 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	PA 10	PA 11A	PA 11B
Demonster	I art 575	Destrict of	Destasting of	Sample Designation.	2/26/2012	2/10/2012	2/21/2012
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (It bils):	23-25	10-12	23-23
1,1'-Biphenyl					69 U	74 U	78 U
1,2,4,5-Tetrachlorobenzene					170 U	180 U	190 U
1,2,4-Trichlorobenzene					NA	NA	NA
1,2-Dichlorobenzene					NA	NA	NA
1,3-Dichlorobenzene					NA	NA	NA
1,4-Dichlorobenzene					NA	NA	NA
2,2'-oxybis (1-chloropropane)					69 U	74 U	78 U
2,3,4,6-Tetrachlorophenol					170 U	180 U	190 U
2,4,5-Trichlorophenol					170 U	180 U	190 U
2,4,6-Trichlorophenol					170 U	180 U	190 U
2,4-Dichlorophenol					170 U	180 U	190 U
2,4-Dimethylphenol					170 U	180 U	190 U
2,4-Dinitrophenol					690 U	740 U	780 U
2,4-Dinitrotoluene					69 U	74 U	78 U
2,6-Dinitrotoluene					69 U	74 U	78 U
2-Chloronaphthalene					69 U	74 U	78 U
2-Chlorophenol					170 U	180 U	190 U
2-Methylnaphthalene					69 U	74 U	78 U
2-Methylphenol	330	100000	330		69 U	74 U	78 U
2-Nitroaniline					170 U	180 U	190 U
2-Nitrophenol					170 U	180 U	190 U
3&4-Methylphenol	330	100000	330		69 U	74 U	78 U
3,3'-Dichlorobenzidine					170 U	180 U	190 U
3-Nitroaniline					170 U	180 U	190 U
4,6-Dinitro-2-methylphenol					690 U	740 U	780 U
4-Bromophenyl phenyl ether					69 U	74 U	78 U
4-Chloro-3-methylphenol					170 U	180 U	190 U
4-Chloroaniline					170 U	180 U	190 U
4-Chlorophenyl phenyl ether					69 U	74 U	78 U
4-Nitroaniline					170 U	180 U	190 U
4-Nitrophenol					340 U	370 U	390 U
Acenaphthene	20000	100000	98000		34 U	37 U	39 U
Acenaphthylene	100000	100000	107000		34 U	37 U	39 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation.	PA 10	PA 11A	PA 11B
D	Lucation 1	Destricts 1	Protection of	Sample Designation.	RA-10	2/10/2012	NA-11D
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (It bils):	23-25	10-12	23-25
Acetophenone					170 U	180 U	190 U
Anthracene	100000	100000	1000000		34 U	37 U	39 U
Atrazine					170 U	180 U	190 U
Benzaldehyde					170 U	180 U	190 U
Benzo[a]anthracene	1000	1000	1000		34 U	37 U	39 U
Benzo[a]pyrene	1000	1000	22000		34 U	37 U	39 U
Benzo[b]fluoranthene	1000	1000	1700		34 U	37 U	39 U
Benzo[g,h,i]perylene	100000	100000	1000000		34 U	37 U	39 U
Benzo[k]fluoranthene	800	3900	1700		34 U	37 U	39 U
Benzoic Acid					NA	NA	NA
Benzyl Alcohol					NA	NA	NA
Bis(2-chloroethoxy)methane					69 U	74 U	78 U
Bis(2-chloroethyl) ether					69 U	74 U	78 U
Bis(2-ethylhexyl) phthalate					69 U	74 U	78 U
Butylbenzyl phthalate					69 U	74 U	78 U
Caprolactam					69 U	74 U	78 U
Carbazole					69 U	74 U	78 U
Chrysene	1000	3900	1000		34 U	37 U	39 U
Dibenzo[a,h]anthracene	330	330	1000000		34 U	37 U	39 U
Dibenzofuran	7000	59000	210000		69 U	74 U	78 U
Diethyl phthalate					69 U	74 U	78 U
Dimethyl phthalate					69 U	74 U	78 U
Di-n-butyl phthalate					69 U	74 U	78 U
Di-n-octyl phthalate					69 U	74 U	78 U
Fluoranthene	100000	100000	1000000		34 U	37 U	39 U
Fluorene	30000	100000	386000		34 U	37 U	39 U
Hexachlorobenzene	330	1200	3200		69 U	74 U	78 U
Hexachlorobutadiene					34 U	37 U	39 U
Hexachlorocyclopentadiene					340 U	370 U	390 U
Hexachloroethane					170 U	180 U	190 U
Indeno[1,2,3-cd]pyrene	500	500	8200		34 U	37 U	39 U
Isophorone					69 U	74 U	78 U
Naphthalene	12000	100000	12000		34 U	37 U	39 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-10	RA-11A	RA-11B
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	3/18/2013	3/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	10-12	23-25
Nitrobenzene					69 U	74 U	78 U
n-Nitrosodi-n-propylamine n-Nitrosodiphenylamine					69 U 170 U	74 U 180 U	78 U 190 U
Pentachlorophenol	800	6700	800		340 U	370 U	390 U
Phenanthrene	100000	100000	1000000		34 U	37 U	39 U
Phenol	330	100000	330		69 U	74 U	78 U
Pyrene	100000	100000	1000000		34 U	37 U	39 U
Total TIC, Semi-Volatile					4100 J	970 J	230 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

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Part 375 Protection of Groundwater Standards

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Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-11B DUP	RA-12	RA-12	RA-12 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/21/2013	2/21/2013	2/21/2013	2/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	11-12.5	23-25	23-25
1.1'-Biphenyl					70 U	68 U	73 U	71 U
1.2.4.5-Tetrachlorobenzene					170 U	170 U	180 U	180 U
1.2.4-Trichlorobenzene					NA	NA	NA	NA
1,2-Dichlorobenzene					NA	NA	NA	NA
1,3-Dichlorobenzene					NA	NA	NA	NA
1,4-Dichlorobenzene					NA	NA	NA	NA
2,2'-oxybis (1-chloropropane)					70 U	68 U	73 U	71 U
2,3,4,6-Tetrachlorophenol					170 U	170 U	180 U	180 U
2,4,5-Trichlorophenol					170 U	170 U	180 U	180 U
2,4,6-Trichlorophenol					170 U	170 U	180 U	180 U
2,4-Dichlorophenol					170 U	170 U	180 U	180 U
2,4-Dimethylphenol					170 U	170 U	180 U	180 U
2,4-Dinitrophenol					700 U	680 U	730 U	710 U
2,4-Dinitrotoluene					70 U	68 U	73 U	71 U
2,6-Dinitrotoluene					70 U	68 U	73 U	71 U
2-Chloronaphthalene					70 U	68 U	73 U	71 U
2-Chlorophenol					170 U	170 U	180 U	180 U
2-Methylnaphthalene					70 U	68 U	73 U	71 U
2-Methylphenol	330	100000	330		70 U	68 U	73 U	71 U
2-Nitroaniline					170 U	170 U	180 U	180 U
2-Nitrophenol					170 U	170 U	180 U	180 U
3&4-Methylphenol	330	100000	330		70 U	68 U	73 U	71 U
3,3'-Dichlorobenzidine					170 U	170 U	180 U	180 U
3-Nitroaniline					170 U	170 U	180 U	180 U
4,6-Dinitro-2-methylphenol					700 U	680 U	730 U	710 U
4-Bromophenyl phenyl ether					70 U	68 U	73 U	71 U
4-Chloro-3-methylphenol					170 U	170 U	180 U	180 U
4-Chloroaniline					170 U	170 U	180 U	180 U
4-Chlorophenyl phenyl ether					70 U	68 U	73 U	71 U
4-Nitroaniline					170 U	170 U	180 U	180 U
4-Nitrophenol					350 U	340 U	360 U	350 U
Acenaphthene	20000	100000	98000		35 U	27.1 J	36 U	35 U
Acenaphthylene	100000	100000	107000		35 U	34 U	36 U	35 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-11B DUP	RA-12	RA-12	RA-12 DUP
Deremator	Unrestricted	Destricted	Protection of	Sample Designation.	2/21/2012	2/21/2012	2/21/2012	2/21/2012
(Concentrations in $\mu g/kg$)	Uniestricted	Residential	Groundwater	Sample Date: Sample Denth (ft hffs):	23-25	11-12 5	2/21/2013	2/21/2013
	0.30	Residential	Groundwater	Sample Depth (it bils):	25 25	11 12.5	25 25	23 23
Acetophenone					170 U	170 U	180 U	180 U
Anthracene	100000	100000	1000000		35 U	79.4	36 U	35 U
Atrazine					170 U	170 U	180 U	180 U
Benzaldehyde					170 U	170 U	180 U	180 U
Benzo[a]anthracene	1000	1000	1000		35 U	196	36 U	35 U
Benzo[a]pyrene	1000	1000	22000		35 U	190	36 U	35 U
Benzo[b]fluoranthene	1000	1000	1700		35 U	219	36 U	35 U
Benzo[g,h,i]perylene	100000	100000	1000000		35 U	130	36 U	35 U
Benzo[k]fluoranthene	800	3900	1700		35 U	73.9	36 U	35 U
Benzoic Acid					NA	NA	NA	NA
Benzyl Alcohol					NA	NA	NA	NA
Bis(2-chloroethoxy)methane					70 U	68 U	73 U	71 U
Bis(2-chloroethyl) ether					70 U	68 U	73 U	71 U
Bis(2-ethylhexyl) phthalate					70 U	106 UV	73 U	71 U
Butylbenzyl phthalate					70 U	68 U	73 U	71 U
Caprolactam					70 U	68 U	73 U	71 U
Carbazole					70 U	27.7 J	73 U	71 U
Chrysene	1000	3900	1000		35 U	187	36 U	35 U
Dibenzo[a,h]anthracene	330	330	1000000		35 U	32.7 J	36 U	35 U
Dibenzofuran	7000	59000	210000		70 U	18 J	73 U	71 U
Diethyl phthalate					70 U	68 U	73 U	71 U
Dimethyl phthalate					70 U	68 U	73 U	71 U
Di-n-butyl phthalate					70 U	68 U	73 U	71 U
Di-n-octyl phthalate					70 U	68 U	73 U	71 U
Fluoranthene	100000	100000	1000000		35 U	409	36 U	35 U
Fluorene	30000	100000	386000		35 U	27.1 J	36 U	35 U
Hexachlorobenzene	330	1200	3200		70 U	68 U	73 U	71 U
Hexachlorobutadiene					35 U	34 U	36 U	35 U
Hexachlorocyclopentadiene					350 U	340 U	360 U	350 U
Hexachloroethane					170 U	170 U	180 U	180 U
Indeno[1,2,3-cd]pyrene	500	500	8200		35 U	112	36 U	35 U
Isophorone					70 U	68 U	73 U	71 U
Naphthalene	12000	100000	12000		35 U	19.2 J	36 U	35 U

NYSDECNYSDECNYSDECPart 375Part 375Part 375Sample Designation:F	RA-11B DUP	RA-12	RA-12	RA-12 DUP
Parameter Unrestricted Restricted Protection of Sample Date:	3/21/2013	2/21/2013	2/21/2013	2/21/2013
(Concentrations in $\mu g/kg$) Use Residential Groundwater Sample Depth (ft bffs):	23-25	11-12.5	23-25	23-25
Nitrobenzene	70 U	68 U	73 U	71 U
n-Nitrosodi-n-propylamine	70 U	68 U	73 U	71 U
n-Nitrosodiphenylamine	170 U	170 U	180 U	180 U
Pentachlorophenol 800 6700 800	350 U	340 U	360 U	350 U
Phenanthrene 100000 100000 100000	35 U	334	36 U	35 U
Phenol 330 100000 330	70 U	68 U	73 U	71 U
Pyrene 100000 100000 100000	35 U	374	36 U	35 U
Total TIC, Semi-Volatile	0	260 J	440 J	370 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

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Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-35	RA-35	A-2	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	8/5/2013	1/9/2014	8/5/2013	8/5/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	4 - 6	6 - 8	10-15	8 - 10	10 - 12
1 1'-Binhenvl					73 U	74 U	66 I	81 U	73 U
1 2 4 5-Tetrachlorobenzene					180 U	180 U	190 U	200 U	180 U
1.2.4-Trichlorobenzene					NA	NA	190 U	NA	NA
1.2-Dichlorobenzene					NA	NA	190 U	NA	NA
1.3-Dichlorobenzene					NA	NA	190 U	NA	NA
1,4-Dichlorobenzene					NA	NA	190 U	NA	NA
2,2'-oxybis (1-chloropropane)					73 U	74 U	220 U	81 U	73 U
2,3,4,6-Tetrachlorophenol					180 U	180 U	NA	200 U	180 U
2,4,5-Trichlorophenol					180 U	180 U	190 U	200 U	180 U
2,4,6-Trichlorophenol					180 U	180 U	110 U	200 U	180 U
2,4-Dichlorophenol					180 U	180 U	170 U	200 U	180 U
2,4-Dimethylphenol					180 U	180 U	190 U	200 U	180 U
2,4-Dinitrophenol					730 U	740 U	900 U	810 U	730 U
2,4-Dinitrotoluene					73 U	74 U	190 U	81 U	73 U
2,6-Dinitrotoluene					73 U	74 U	190 U	81 U	73 U
2-Chloronaphthalene					73 U	74 U	190 U	81 U	73 U
2-Chlorophenol					180 U	180 U	190 U	200 U	180 U
2-Methylnaphthalene					73 U	74 U	200 J	81 U	73 U
2-Methylphenol	330	100000	330		73 U	74 U	190 U	81 U	73 U
2-Nitroaniline					180 U	180 U	190 U	200 U	180 U
2-Nitrophenol					180 U	180 U	410 U	200 U	180 U
3&4-Methylphenol	330	100000	330		73 U	74 U	270 U	81 U	73 U
3,3'-Dichlorobenzidine					180 U	180 U	190 U	200 U	180 U
3-Nitroaniline					180 U	180 U	190 U	200 U	180 U
4,6-Dinitro-2-methylphenol					730 U	740 U	490 U	810 U	730 U
4-Bromophenyl phenyl ether					73 U	74 U	190 U	81 U	73 U
4-Chloro-3-methylphenol					180 U	180 U	190 U	200 U	180 U
4-Chloroaniline					180 U	180 U	190 U	200 U	180 U
4-Chlorophenyl phenyl ether					73 U	74 U	190 U	81 U	73 U
4-Nitroaniline					180 U	180 U	190 U	200 U	180 U
4-Nitrophenol					360 U	370 U	260 U	400 U	360 U
Acenaphthene	20000	100000	98000		36 U	37 U	600	55.8	36 U
Acenaphthylene	100000	100000	107000		36 U	37 U	210	109	36 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation •	RA-35	RA-35	Δ_2	RA-36	RA-36
Dogomotor	Unnegtriated	Destricted	Dustantian of	Sample Designation.	NA-55	0/5/2012	1/0/2014	NA-50	RA-50 9/5/2012
(Concentrations in ug/kg)	Unestricted	Residential	Groundwater	Sample Denth (ft hffs)	6/ <i>3</i> /2013 4 - 6	6 - 8	10-15	8 - 10	0/3/2013 10 - 12
(concentrations in $\mu g/\kappa g$)	0.50	Residential	Groundwater	Sample Depth (it bits):	+ 0	0 0	10 15	0 10	10 12
Acetophenone					180 U	180 U	190 U	200 U	180 U
Anthracene	100000	100000	1000000		36 U	37 U	1400	220	36 U
Atrazine					180 U	180 U	NA	200 U	180 U
Benzaldehyde					180 U	180 U	NA	200 U	180 U
Benzo[a]anthracene	1000	1000	1000		36 U	37 U	2300	878	36 U
Benzo[a]pyrene	1000	1000	22000		36 U	37 U	2000	970	36 U
Benzo[b]fluoranthene	1000	1000	1700		36 U	37 U	2400	1200	36 U
Benzo[g,h,i]perylene	100000	100000	1000000		36 U	37 U	1200	706	36 U
Benzo[k]fluoranthene	800	3900	1700		36 U	37 U	860	464	36 U
Benzoic Acid					NA	NA	610 U	NA	NA
Benzyl Alcohol					NA	NA	190 U	NA	NA
Bis(2-chloroethoxy)methane					73 U	74 U	200 U	81 U	73 U
Bis(2-chloroethyl) ether					73 U	74 U	170 U	81 U	73 U
Bis(2-ethylhexyl) phthalate					73 U	74 U	63 J	85.1	73 U
Butylbenzyl phthalate					73 U	74 U	190 U	81 U	73 U
Caprolactam					73 U	74 U	NA	81 U	73 U
Carbazole					73 U	74 U	580	91.6	73 U
Chrysene	1000	3900	1000		36 U	37 U	2200	928	36 U
Dibenzo[a,h]anthracene	330	330	1000000		36 U	37 U	260	183	36 U
Dibenzofuran	7000	59000	210000		73 U	74 U	470	28.1 J	73 U
Diethyl phthalate					73 U	74 U	190 U	81 U	73 U
Dimethyl phthalate					73 U	74 U	190 U	81 U	73 U
Di-n-butyl phthalate					73 U	74 U	190 U	81 U	73 U
Di-n-octyl phthalate					73 U	74 U	190 U	81 U	73 U
Fluoranthene	100000	100000	1000000		36 U	37 U	5500	1540	36 U
Fluorene	30000	100000	386000		36 U	37 U	620	53.6	36 U
Hexachlorobenzene	330	1200	3200		73 U	74 U	110 U	81 U	73 U
Hexachlorobutadiene					36 U	37 U	190 U	40 U	36 U
Hexachlorocyclopentadiene					360 U	370 U	540 U	400 U	360 U
Hexachloroethane					180 U	180 U	150 U	200 U	180 U
Indeno[1,2,3-cd]pyrene	500	500	8200		36 U	37 U	1200	748	36 U
Isophorone					73 U	74 U	170 U	81 U	73 U
Naphthalene	12000	100000	12000		36 U	37 U	450	23.7 J	36 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-35	RA-35	A-2	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	8/5/2013	1/9/2014	8/5/2013	8/5/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (it bils):	4 - 0	0 - 8	10-13	8 - 10	10 - 12
Nitrobenzene					73 U	74 U	170 U	81 U	73 U
n-Nitrosodi-n-propylamine					73 U	74 U	190 U	81 U	73 U
n-Nitrosodiphenylamine					180 U	180 U	150 U	200 U	180 U
Pentachlorophenol	800	6700	800		360 U	370 U	150 U	400 U	360 U
Phenanthrene	100000	100000	1000000		36 U	37 U	5800	829	36 U
Phenol	330	100000	330		73 U	74 U	190 U	81 U	73 U
Pyrene	100000	100000	1000000		36 U	37 U	4800	1410	36 U
Total TIC, Semi-Volatile					NA	NA	NA	NA	NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

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UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Protection of Groundwater Standards

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-36 DUP	SDS-1	RA-16	RA-32
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	2/13/2013	4/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	11-13	4-6
1 1'-Binhenvl					72 H	430 U	80 U	77 U
1 2 4 5-Tetrachlorobenzene					180 U	190 U	200 U	190 U
1.2.4-Trichlorobenzene					NA	190 U	NA	NA
1.2-Dichlorobenzene					NA	190 U	NA	NA
1.3-Dichlorobenzene					NA	190 U	NA	NA
1.4-Dichlorobenzene					NA	190 U	NA	NA
2,2'-oxybis (1-chloropropane)					72 U	230 U	80 U	77 U
2,3,4,6-Tetrachlorophenol					180 U	NA	200 U	190 U
2,4,5-Trichlorophenol					180 U	190 U	200 U	190 U
2,4,6-Trichlorophenol					180 U	110 U	200 U	190 U
2,4-Dichlorophenol					180 U	170 U	200 U	190 U
2,4-Dimethylphenol					180 U	190 U	200 U	190 U
2,4-Dinitrophenol					720 U	910 U	800 U	770 RV
2,4-Dinitrotoluene					72 U	190 U	80 U	77 U
2,6-Dinitrotoluene					72 U	190 U	80 U	77 U
2-Chloronaphthalene					72 U	190 U	80 U	77 U
2-Chlorophenol					180 U	190 U	200 U	190 U
2-Methylnaphthalene					72 U	230 U	80 U	77 U
2-Methylphenol	330	100000	330		72 U	190 U	80 U	77 U
2-Nitroaniline					180 U	190 U	200 U	190 U
2-Nitrophenol					180 U	410 U	200 U	190 U
3&4-Methylphenol	330	100000	330		72 U	270 U	80 U	77 U
3,3'-Dichlorobenzidine					180 U	190 U	200 U	190 U
3-Nitroaniline					180 U	190 U	200 U	190 U
4,6-Dinitro-2-methylphenol					720 U	490 U	800 U	770 RV
4-Bromophenyl phenyl ether					72 U	190 U	80 U	77 U
4-Chloro-3-methylphenol					180 U	190 U	200 U	190 U
4-Chloroaniline					180 U	190 U	200 U	190 U
4-Chlorophenyl phenyl ether					72 U	190 U	80 U	77 U
4-Nitroaniline					180 U	190 U	200 U	190 U
4-Nitrophenol					360 U	270 U	400 U	380 U
Acenaphthene	20000	100000	98000		36 U	170	40 U	38 U
Acenaphthylene	100000	100000	107000		36 U	290	40 U	38 U

	NYSDEC	NYSDEC	NYSDEC					
	Part 375	Part 375	Part 375	Sample Designation:	RA-36 DUP	SDS-1	RA-16	RA-32
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	2/13/2013	4/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	11-13	4-6
A set sub su su s					100 11	100 U	200.11	100 U
Acetophenone					180 U	190 0	200 U	190 0
Anthracene	100000	100000	100000		36 U	970 NA	40 U 200 U	00.I
Atrazine					180 U	NA	200 U	190 U
Benzaidenyde					180 U	NA 1000	200 0	190 U
Benzolajanthracene	1000	1000	1000		36 U	1900	30 J	270 JV
Benzo[a]pyrene	1000	1000	22000		36 U	1600	25.1 NJV	292 JV
Benzo[b]fluoranthene	1000	1000	1700		36 U	1900	27.2 J	416 JV
Benzo[g,h,1]perylene	100000	100000	100000		36 U	1000	21.1 J	198 JV
Benzo[k]fluoranthene	800	3900	1700		36 U	780	18.1 J	151 JV
Benzoic Acid					NA	620 U	NA	NA
Benzyl Alcohol					NA	190 U	NA	NA
Bis(2-chloroethoxy)methane					72 U	200 U	80 U	77 U
Bis(2-chloroethyl) ether					72 U	170 U	80 U	77 U
Bis(2-ethylhexyl) phthalate					72 U	190 U	291	77 U
Butylbenzyl phthalate					72 U	190 U	80 U	77 U
Caprolactam					72 U	NA	80 U	77 U
Carbazole					72 U	190	80 U	77 U
Chrysene	1000	3900	1000		36 U	1700	32.3 J	307 JV
Dibenzo[a,h]anthracene	330	330	1000000		36 U	240	40 U	61.3 JV
Dibenzofuran	7000	59000	210000		72 U	120 J	80 U	77 U
Diethyl phthalate					72 U	190 U	80 U	77 U
Dimethyl phthalate					72 U	190 U	80 U	77 U
Di-n-butyl phthalate					72 U	190 U	80 U	77 U
Di-n-octyl phthalate					72 U	190 U	80 U	77 U
Fluoranthene	100000	100000	1000000		36 U	4000	43.1	554 JV
Fluorene	30000	100000	386000		36 U	230	40 U	38 U
Hexachlorobenzene	330	1200	3200		72 U	110 U	80 U	77 U
Hexachlorobutadiene					36 U	190 U	40 U	38 U
Hexachlorocyclopentadiene					360 U	540 U	400 U	380 U
Hexachloroethane					180 U	150 U	200 U	190 U
Indeno[1,2,3-cd]pyrene	500	500	8200		36 U	1200	17.3 J	204 JV
Isophorone					72 U	170 U	80 U	77 U
Naphthalene	12000	100000	12000		36 U	81 J	40 U	38 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-36 DUP	SDS-1	RA-16	RA-32
Parameter	Unrestricted	Restricted Posidential	Protection of	Sample Date:	8/5/2013	1/9/2014	2/13/2013	4/26/2013
(Concentrations in µg/kg)	Use	Residential	Glouiidwatei	Sample Depth (It bils):	10 - 12	10-14	11-15	4-0
Nitrobenzene					72 U	170 U	80 U	77 U
n-Nitrosodi-n-propylamine					72 U	190 U	80 U	77 U
n-Nitrosodiphenylamine					180 U	150 U	200 U	190 U
Pentachlorophenol	800	6700	800		360 U	150 U	400 U	380 U
Phenanthrene	100000	100000	1000000		36 U	2500	26 J	295
Phenol	330	100000	330		72 U	190 U	80 U	77 U
Pyrene	100000	100000	1000000		36 U	3600	49.4	536 JV
Total TIC, Semi-Volatile					NA	NA	3200 J	610 J

J - Estimated value

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NA - Compound was not analyzed for by laboratory

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V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Protection of Groundwater Standards

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Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-32 DUP	SDS-2	BDS-2	BDS-2DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	4/26/2013	1/10/2014	1/13/2014	1/13/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	4-6	10-14	10-14	10-14
1 1' Dinhanyl					75 11	450 U	440 11	420 U
1,1-Dipitellyi					75 U 100 U	430 U 200 U	440 U 100 U	420 U
1,2,4,5-1 etf action obenzene					190 U NA	200 U	190 U 100 U	180 U
1,2,4-Inchorobonzono					NA	200 U	190 U 100 U	180 U
1,2-Dichlorobenzene					NA	200 U	190 U 100 U	180 U
1,3-Dichlorohonzono					NA	200 U	190 U 100 U	180 U
1,4-Dicitiorobelizene						200 U	190 U 220 U	180 U
2,2 - OXYDIS (1-Chloropropane)					75 U 100 U	240 U	230 U	220 U
2,3,4,6-1 etrachiorophenol					190 U			
2,4,5-1 richlorophenol					190 U	200 U	190 U	180 U
2,4,6-1richlorophenol					190 U	120 U	110 U	110 U
2,4-Dichlorophenol					190 U	180 U	1/0 U	170 U
2,4-Dimethylphenol					190 U	200 U	190 U	180 U
2,4-Dinitrophenol					750 U	950 U	920 U	890 U
2,4-Dinitrotoluene					75 U	200 U	190 U	180 U
2,6-Dinitrotoluene					75 U	200 U	190 U	180 U
2-Chloronaphthalene					75 U	200 U	190 U	180 U
2-Chlorophenol					190 U	200 U	190 U	180 U
2-Methylnaphthalene					75 U	240 U	230 U	220 U
2-Methylphenol	330	100000	330		75 U	200 U	190 U	180 U
2-Nitroaniline					190 U	200 U	190 U	180 U
2-Nitrophenol					190 U	430 U	410 U	400 U
3&4-Methylphenol	330	100000	330		75 U	290 U	280 U	270 U
3,3'-Dichlorobenzidine					190 U	200 U	190 U	180 U
3-Nitroaniline					190 U	200 U	190 U	180 U
4,6-Dinitro-2-methylphenol					750 U	520 U	500 U	480 U
4-Bromophenyl phenyl ether					75 U	200 U	190 U	180 U
4-Chloro-3-methylphenol					190 U	200 U	190 U	180 U
4-Chloroaniline					190 U	200 U	190 U	180 U
4-Chlorophenyl phenyl ether					75 U	200 U	190 U	180 U
4-Nitroaniline					190 U	200 U	190 U	180 U
4-Nitrophenol					380 U	280 U	270 U	260 U
Acenaphthene	20000	100000	98000		38 U	160 U	150 U	150 U
Acenaphthylene	100000	100000	107000		38 U	160 U	150 U	150 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Somple Designation:		SDS 2	BDS 2	
	Lucation 1	Destricted	Protection of	Sample Designation.	A/26/2012	1/10/2014	1/12/2014	1/12/2014
Parameter (Concentrations in walks)	Unrestricted	Restricted	Protection of	Sample Date:	4/26/2013	1/10/2014	1/13/2014	1/13/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (It bils):	4-0	10-14	10-14	10-14
Acetophenone					190 U	200 U	190 U	180 U
Anthracene	100000	100000	1000000		107	120 U	60 J	59 J
Atrazine					190 U	NA	NA	NA
Benzaldehyde					190 U	NA	NA	NA
Benzo[a]anthracene	1000	1000	1000		309	69 J	210	280
Benzo[a]pyrene	1000	1000	22000		304	65 J	220	240
Benzo[b]fluoranthene	1000	1000	1700		403	85 J	300	320
Benzo[g,h,i]perylene	100000	100000	1000000		216	46 J	160	170
Benzo[k]fluoranthene	800	3900	1700		135	47 J	130	140
Benzoic Acid					NA	640 U	620 U	600 U
Benzyl Alcohol					NA	200 U	190 U	180 U
Bis(2-chloroethoxy)methane					75 U	210 U	210 U	200 U
Bis(2-chloroethyl) ether					75 U	180 U	170 U	170 U
Bis(2-ethylhexyl) phthalate					58.4 J	200 U	150 J	430
Butylbenzyl phthalate					75 U	200 U	190 U	180 U
Caprolactam					75 U	NA	NA	NA
Carbazole					45.3 J	200 U	190 U	180 U
Chrysene	1000	3900	1000		313	75 J	240	280
Dibenzo[a,h]anthracene	330	330	1000000		40.8	120 U	110 U	110 U
Dibenzofuran	7000	59000	210000		75 U	200 U	190 U	180 U
Diethyl phthalate					75 U	200 U	190 U	180 U
Dimethyl phthalate					75 U	200 U	190 U	180 U
Di-n-butyl phthalate					75 U	200 U	190 U	180 U
Di-n-octyl phthalate					75 U	200 U	190 U	180 U
Fluoranthene	100000	100000	1000000		694	120	370	460
Fluorene	30000	100000	386000		38 U	200 U	190 U	180 U
Hexachlorobenzene	330	1200	3200		75 U	120 U	110 U	110 U
Hexachlorobutadiene					38 U	200 U	190 U	180 U
Hexachlorocyclopentadiene					380 U	570 U	550 U	530 U
Hexachloroethane					190 U	160 U	150 U	150 U
Indeno[1,2,3-cd]pyrene	500	500	8200		227	47 J	150	170
Isophorone					75 U	180 U	170 U	170 U
Naphthalene	12000	100000	12000		38 U	200 U	190 U	180 U

NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-32 DUP	SDS-2	BDS-2	BDS-2DUP
Unrestricted	Restricted	Protection of	Sample Date:	4/26/2013	1/10/2014	1/13/2014	1/13/2014
Use	Residential	Groundwater	Sample Depth (ft bffs):	4-6	10-14	10-14	10-14
 800	 6700	 800		75 U 75 U 190 U 380 U	180 U 200 U 160 U 160 U	170 U 190 U 150 U 150 U	170 U 180 U 150 U 150 U
100000 330 100000	100000 100000 100000	1000000 330 1000000		472 75 U 580 1130 J	68 J 200 U 110 J NA	200 190 U 330 NA	210 180 U 420 NA
	NYSDEC Part 375 Unrestricted Use 800 100000 330 100000 	NYSDEC NYSDEC Part 375 Part 375 Unrestricted Restricted Use Residential 800 6700 100000 100000 330 100000 100000 100000	NYSDEC NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Part 375 Unrestricted Restricted Protection of Groundwater 800 6700 800 100000 100000 330 100000 100000 330 100000 100000 1000000	NYSDECNYSDECNYSDECPart 375Part 375Part 375Sample Designation:UnrestrictedRestrictedProtection ofSample Date:UseResidentialGroundwaterSample Depth (ft bffs):80067008001000001000003301000001000003301000001000001000000	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-32 DUP Unrestricted Restricted Protection of Sample Date: 4/26/2013 Use Residential Groundwater Sample Depth (ft bffs): 4-6 75 U 75 U 75 U 75 U 75 U 190 U 800 6700 800 380 U 100000 1000000 1000000 472 330 100000 330 75 U 100000 1000000 580 1130 J	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-32 DUP SDS-2 Unrestricted Restricted Protection of Sample Date: 4/26/2013 1/10/2014 Use Residential Groundwater Sample Depth (ft bffs): 4-6 10-14 75 U 180 U 75 U 200 U 75 U 200 U 190 U 160 U 800 6700 800 380 U 160 U 100000 100000 330 75 U 200 U 100000 100000 580 110 J 1130 J NA	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-32 DUP SDS-2 BDS-2 Unrestricted Restricted Protection of Sample Date: 4/26/2013 1/10/2014 1/13/2014 Use Residential Groundwater Sample Depth (ft bffs): 4-6 10-14 10-14 75 U 180 U 170 U 75 U 200 U 190 U 190 U 160 U 150 U 800 6700 800 380 U 160 U 150 U 100000 100000 330 75 U 200 U 190 U 100000 100000 330 75 U 200 U 190 U 100000 1000000 330 75 U 200 U 190 U 100000 1000000 330 75 U 200 U 190 U 100000 1000000 1000000 580

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-14	RA-20	RA-23	RA-13
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/13/2013	2/13/2013	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	11-13	11-13	11-13
1 1' Rinhanyl					21 I	00 U	74 U	84 I I
1,2,4,5-Tetrachlorobenzene					210 U	230 U	180 U	210 U
1.2.4.5-Tetrachlorobenzene					NA	230 U NA	NA	NA
1.2.4 memorobenzene					NA	NA	NA	NA
1 3-Dichlorobenzene					NA	NA	NA	NA
1 4-Dichlorobenzene					NA	NA	NA	NA
2 2'-oxybis (1-chloropropane)					83 U	90 U	74 U	84 U
2 3 4 6-Tetrachlorophenol					210 U	230 U	180 U	210 U
2 4 5-Trichlorophenol					210 U	230 U	180 U	210 U
2.4.6-Trichlorophenol					210 U	230 U	180 U	210 U
2.4-Dichlorophenol					210 U	230 U	180 U	210 U
2.4-Dimethylphenol					210 U	230 U	180 U	210 U
2.4-Dinitrophenol					830 RV	900 U	740 U	840 U
2.4-Dinitrotoluene					83 U	90 U	74 U	84 U
2.6-Dinitrotoluene					83 U	90 U	74 U	84 U
2-Chloronaphthalene					83 U	90 U	74 U	84 U
2-Chlorophenol					210 U	230 U	180 U	210 U
2-Methylnaphthalene					56.1 J	90 U	74 U	84 U
2-Methylphenol	330	100000	330		83 U	90 U	74 U	84 U
2-Nitroaniline					210 U	230 U	180 U	210 U
2-Nitrophenol					210 U	230 U	180 U	210 U
3&4-Methylphenol	330	100000	330		83 U	90 U	74 U	84 U
3,3'-Dichlorobenzidine					210 U	230 U	180 U	210 U
3-Nitroaniline					210 U	230 U	180 U	210 U
4,6-Dinitro-2-methylphenol					830 RV	900 U	740 U	840 U
4-Bromophenyl phenyl ether					83 U	90 U	74 U	84 U
4-Chloro-3-methylphenol					210 U	230 U	180 U	210 U
4-Chloroaniline					210 U	230 U	180 U	210 U
4-Chlorophenyl phenyl ether					83 U	90 U	74 U	84 U
4-Nitroaniline					210 U	230 U	180 U	210 U
4-Nitrophenol					420 U	450 U	370 U	420 U
Acenaphthene	20000	100000	98000		466	45 U	37 U	42 U
Acenaphthylene	100000	100000	107000		288	45 U	37 U	42 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-14	RA-20	RA-23	RA-13
Deremeter	Unrestricted	Destricted	Protection of	Sample Designation:	/12/2012	2/12/2012	2/12/2012	2/14/2012
(Concentrations in ug/kg)	Uniesuicieu	Residential	Groundwater	Sample Date: 2/	11_13	2/15/2015	2/15/2015	2/14/2015
(Concentrations in µg/kg)	Use	Residential	Gloundwater	Sample Deptil (It bills).	11-15	11-15	11-15	11-15
Acetophenone					210 U	230 U	180 U	210 U
Anthracene	100000	100000	1000000		1790	45 U	37 U	42 U
Atrazine					210 U	230 U	180 U	210 U
Benzaldehyde					210 U	230 U	180 U	210 U
Benzo[a]anthracene	1000	1000	1000	2	2970 JV	45 U	37 U	42 U
Benzo[a]pyrene	1000	1000	22000	2	2620 JV	45 U	37 U	42 U
Benzo[b]fluoranthene	1000	1000	1700		2140	45 U	37 U	42 U
Benzo[g,h,i]perylene	100000	100000	1000000		1470	45 U	37 U	42 U
Benzo[k]fluoranthene	800	3900	1700	1	1930 JV	45 U	37 U	42 U
Benzoic Acid					NA	NA	NA	NA
Benzyl Alcohol					NA	NA	NA	NA
Bis(2-chloroethoxy)methane					83 U	90 U	74 U	84 U
Bis(2-chloroethyl) ether					83 U	90 U	74 U	84 U
Bis(2-ethylhexyl) phthalate					96.9	139	50.1 J	54.5 J
Butylbenzyl phthalate					83 U	90 U	74 U	84 U
Caprolactam					83 U	90 U	74 U	84 U
Carbazole					356	90 U	74 U	84 U
Chrysene	1000	3900	1000	2	2830 JV	45 U	37 U	42 U
Dibenzo[a,h]anthracene	330	330	1000000		632	45 U	37 U	42 U
Dibenzofuran	7000	59000	210000		388	90 U	74 U	84 U
Diethyl phthalate					83 U	90 U	74 U	84 U
Dimethyl phthalate					83 U	90 U	74 U	84 U
Di-n-butyl phthalate					83 U	90 U	74 U	84 U
Di-n-octyl phthalate					83 U	90 U	74 U	84 U
Fluoranthene	100000	100000	1000000		7930	45 U	37 U	42 U
Fluorene	30000	100000	386000		594	45 U	37 U	42 U
Hexachlorobenzene	330	1200	3200		83 U	90 U	74 U	84 U
Hexachlorobutadiene					42 U	45 U	37 U	42 U
Hexachlorocyclopentadiene					420 U	450 U	370 U	420 U
Hexachloroethane					210 U	230 U	180 U	210 U
Indeno[1,2,3-cd]pyrene	500	500	8200		1370	45 U	37 U	42 U
Isophorone					83 U	90 U	74 U	84 U
Naphthalene	12000	100000	12000		51.3	45 U	37 U	42 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-14	RA-20	RA-23	RA-13
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/13/2013	2/13/2013	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	11-13	11-13	11-13
Nitrobenzene n-Nitrosodi-n-propylamine n-Nitrosodiphenylamine Pentachlorophenol	 800	 6700	 800		83 U 83 U 210 U 420 U	90 U 90 U 230 U 450 U	74 U 74 U 180 U 370 U	84 U 84 U 210 U 420 U
Phenanthrene	100000	100000	1000000		6330 JV	45 U	37 U	42 U
Phenol	330	100000	330		83 U	90 U	74 U	84 U
Pyrene	100000	100000	1000000		6580 JV	45 U	37 U	42 U
Total TIC, Semi-Volatile					17890 J	700 J	710 J	240 J

J - Estimated value

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DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-17	RA-17 DUP	B-IW2	B-1W3
Deremeter	Unrestricted	Pastriated	Protection of	Sample Designation:	2/12/2012	2/12/2012	2/12/2014	2/14/2014
(Concentrations in ug/kg)	Unestricted	Residential	Groundwater	Sample Date.	10-12	10-12	2/12/2014	2/14/2014
(concentrations in $\mu_{\mathcal{G}}$, $\kappa_{\mathcal{G}}$)	0.50	Residential	Groundwater	Sample Deptil (it bils):	10 12	10 12	25 50	25 50
1,1'-Biphenyl					81 U	74 UJV	440 U	430 U
1,2,4,5-Tetrachlorobenzene					200 U	190 UJV	190 U	190 U
1,2,4-Trichlorobenzene					NA	NA	190 U	190 U
1,2-Dichlorobenzene					NA	NA	190 U	190 U
1,3-Dichlorobenzene					NA	NA	190 U	190 U
1,4-Dichlorobenzene					NA	NA	190 U	190 U
2,2'-oxybis (1-chloropropane)					81 U	74 UJV	230 U	230 U
2,3,4,6-Tetrachlorophenol					200 U	190 U	NA	NA
2,4,5-Trichlorophenol					200 U	190 U	190 U	190 U
2,4,6-Trichlorophenol					200 U	190 U	120 U	110 U
2,4-Dichlorophenol					200 U	190 U	170 U	170 U
2,4-Dimethylphenol					200 U	190 U	190 U	190 U
2,4-Dinitrophenol					810 U	740 U	930 U	910 U
2,4-Dinitrotoluene					81 U	74 UJV	190 U	190 U
2,6-Dinitrotoluene					81 U	74 UJV	190 U	190 U
2-Chloronaphthalene					81 U	74 UJV	190 U	190 U
2-Chlorophenol					200 U	190 U	190 U	190 U
2-Methylnaphthalene					81 U	74 UJV	230 U	230 U
2-Methylphenol	330	100000	330		81 U	74 U	190 U	190 U
2-Nitroaniline					200 U	190 UJV	190 U	190 U
2-Nitrophenol					200 U	190 U	420 U	410 U
3&4-Methylphenol	330	100000	330		81 U	74 U	280 U	270 U
3,3'-Dichlorobenzidine					200 U	190 UJV	190 U	190 U
3-Nitroaniline					200 U	190 UJV	190 U	190 U
4,6-Dinitro-2-methylphenol					810 U	740 U	500 U	490 U
4-Bromophenyl phenyl ether					81 U	74 UJV	190 U	190 U
4-Chloro-3-methylphenol					200 U	190 U	190 U	190 U
4-Chloroaniline					200 U	190 UJV	190 U	190 U
4-Chlorophenyl phenyl ether					81 U	74 UJV	190 U	190 U
4-Nitroaniline					200 U	190 UJV	190 U	190 U
4-Nitrophenol					410 U	370 U	270 U	260 U
Acenaphthene	20000	100000	98000		41 U	37 UJV	150 U	150 U
Acenaphthylene	100000	100000	107000		41 U	37 UJV	150 U	150 U

	NYSDEC Port 375	NYSDEC Port 375	NYSDEC Port 375	Somula Designation.	DA 17			D 1W2
D				Sample Designation.	KA-17	RA-17 DUP	D-1 W 2	D-1 W 3
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/12/2013	2/12/2014	2/14/2014
(Concentrations in $\mu g/kg$)	Use	Residential	Groundwater	Sample Depth (It bils):	10-12	10-12	25-30	25-30
Acetophenone					200 U	190 UJV	190 U	190 U
Anthracene	100000	100000	1000000		97.9 JV	37 UJV	120 U	110 U
Atrazine					200 U	190 UJV	NA	NA
Benzaldehyde					200 U	190 UJV	NA	NA
Benzo[a]anthracene	1000	1000	1000		386 JV	37 UJV	120 U	110 U
Benzo[a]pyrene	1000	1000	22000		370 JV	37 UJV	150 U	150 U
Benzo[b]fluoranthene	1000	1000	1700		361 JV	37 UJV	120 U	110 U
Benzo[g,h,i]perylene	100000	100000	1000000		217 JV	37 UJV	150 U	150 U
Benzo[k]fluoranthene	800	3900	1700		223 JV	37 UJV	120 U	110 U
Benzoic Acid					NA	NA	630 U	620 U
Benzyl Alcohol					NA	NA	190 U	190 U
Bis(2-chloroethoxy)methane					81 U	74 UJV	210 U	200 U
Bis(2-chloroethyl) ether					81 U	74 UJV	170 U	170 U
Bis(2-ethylhexyl) phthalate					81 U	74 UJV	190 U	190 U
Butylbenzyl phthalate					81 U	74 UJV	190 U	190 U
Caprolactam					81 U	74 UJV	NA	NA
Carbazole					25.9 J	74 UJV	190 U	190 U
Chrysene	1000	3900	1000		368 JV	37 UJV	120 U	110 U
Dibenzo[a,h]anthracene	330	330	1000000		81	37 UJV	120 U	110 U
Dibenzofuran	7000	59000	210000		81 U	74 UJV	190 U	190 U
Diethyl phthalate					81 U	74 UJV	190 U	190 U
Dimethyl phthalate					65 J	74 UJV	190 U	190 U
Di-n-butyl phthalate					81 U	74 UJV	190 U	190 U
Di-n-octyl phthalate					81 U	74 UJV	190 U	190 U
Fluoranthene	100000	100000	1000000		818 JV	37 UJV	120 U	110 U
Fluorene	30000	100000	386000		41 U	37 UJV	190 U	190 U
Hexachlorobenzene	330	1200	3200		81 U	74 UJV	120 U	110 U
Hexachlorobutadiene					41 U	37 UJV	190 U	190 U
Hexachlorocyclopentadiene					410 U	370 UJV	550 U	540 U
Hexachloroethane					200 U	190 UJV	150 U	150 U
Indeno[1,2,3-cd]pyrene	500	500	8200		195 JV	37 UJV	150 U	150 U
Isophorone					81 U	74 UJV	170 U	170 U
Naphthalene	12000	100000	12000		41 U	37 UJV	190 U	190 U

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-17	RA-17 DUP	B-IW2	B-1W3
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/12/2013	2/12/2014	2/14/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (It bils):	10-12	10-12	25-30	25-30
Nitrobenzene					81 U	74 UJV	170 U	170 U
n-Nitrosodi-n-propylamine					81 U	74 UJV	190 U	190 U
n-Nitrosodiphenylamine					200 U	190 UJV	150 U	150 U
Pentachlorophenol	800	6700	800		410 U	370 U	150 U	150 U
Phenanthrene	100000	100000	1000000		344 JV	37 UJV	120 U	110 U
Phenol	330	100000	330		81 U	74 U	190 U	190 U
Pyrene	100000	100000	1000000		752 JV	37 UJV	120 U	110 U
Total TIC, Semi-Volatile					240 J	270 J	NA	NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

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DUP - Duplicate sample

µg/kg - Micrograms per kilogram

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-21	BDS-1	RA-15	RA-22
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/15/2013	1/9/2014	2/14/2013	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	10-14	11-13	7-9
1 1'-Binhenyl					75 RV	410 U	77 I I	74 11
1 2 4 5-Tetrachlorobenzene					190 RV	180 U	190 U	190 U
1 2 4-Trichlorobenzene					NA	180 U	NA	NA
1 2-Dichlorobenzene					NA	180 U	NA	NA
1.3-Dichlorobenzene					NA	180 U	NA	NA
1.4-Dichlorobenzene					NA	180 U	NA	NA
2.2'-oxybis (1-chloropropane)					75 RV	220 U	77 U	74 U
2.3.4.6-Tetrachlorophenol					190 RV	NA	190 U	190 U
2.4.5-Trichlorophenol					190 RV	180 U	190 U	190 U
2.4.6-Trichlorophenol					190 RV	110 U	190 U	190 U
2.4-Dichlorophenol					190 RV	160 U	190 U	190 U
2.4-Dimethylphenol					190 RV	180 U	190 U	190 U
2.4-Dinitrophenol					750 RV	870 U	770 U	740 U
2.4-Dinitrotoluene					75 RV	180 U	77 U	74 U
2.6-Dinitrotoluene					75 RV	180 U	77 U	74 U
2-Chloronaphthalene					75 RV	180 U	77 U	74 U
2-Chlorophenol					190 RV	180 U	190 U	190 U
2-Methylnaphthalene					75 RV	220 U	77 U	74 U
2-Methylphenol	330	100000	330		75 RV	180 U	77 U	74 U
2-Nitroaniline					190 RV	180 U	190 U	190 U
2-Nitrophenol					190 RV	390 U	190 U	190 U
3&4-Methylphenol	330	100000	330		75 RV	260 U	77 U	74 U
3,3'-Dichlorobenzidine					190 RV	180 U	190 U	190 U
3-Nitroaniline					190 RV	180 U	190 U	190 U
4,6-Dinitro-2-methylphenol					750 RV	470 U	770 U	740 U
4-Bromophenyl phenyl ether					75 RV	180 U	77 U	74 U
4-Chloro-3-methylphenol					190 RV	180 U	190 U	190 U
4-Chloroaniline					190 RV	180 U	190 U	190 U
4-Chlorophenyl phenyl ether					75 RV	180 U	77 U	74 U
4-Nitroaniline					190 RV	180 U	190 U	190 U
4-Nitrophenol					370 RV	250 U	380 U	370 U
Acenaphthene	20000	100000	98000		37 RV	140 U	38 U	37 U
Acenaphthylene	100000	100000	107000		37 RV	140 U	38 U	37 U
Table 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples, 149 Kent Avenue, Brooklyn, New York

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-21	BDS-1	RA-15	RA-22
Daramatar	Unrestricted	Restricted	Protection of	Sample Designation:	3/15/2013	1/0/2014	2/14/2013	2/15/2013
(Concentrations in ug/kg)	Use	Residential	Groundwater	Sample Depth (ft hffs):	10-12	10-14	11-13	2/13/2013 7-9
	0.00	1001001111			10 12	10 11		
Acetophenone					190 RV	180 U	190 U	190 U
Anthracene	100000	100000	1000000		37 RV	110 U	38 U	37 U
Atrazine					190 RV	NA	190 U	190 U
Benzaldehyde					190 RV	NA	190 U	190 U
Benzo[a]anthracene	1000	1000	1000		37 RV	110 U	37.9 J	37 U
Benzo[a]pyrene	1000	1000	22000		37 RV	140 U	41.2	37 U
Benzo[b]fluoranthene	1000	1000	1700		37 RV	110 U	46.6	37 U
Benzo[g,h,i]perylene	100000	100000	1000000		37 RV	140 U	36.3 J	37 U
Benzo[k]fluoranthene	800	3900	1700		37 RV	110 U	36.7 J	37 U
Benzoic Acid					NA	590 U	NA	NA
Benzyl Alcohol					NA	180 U	NA	NA
Bis(2-chloroethoxy)methane					75 RV	200 U	77 U	74 U
Bis(2-chloroethyl) ether					75 RV	160 U	77 U	74 U
Bis(2-ethylhexyl) phthalate					75 RV	180 U	123	74 U
Butylbenzyl phthalate					75 RV	180 U	77 U	74 U
Caprolactam					75 RV	NA	77 U	74 U
Carbazole					75 RV	180 U	77 U	74 U
Chrysene	1000	3900	1000		37 RV	110 U	42.5	37 U
Dibenzo[a,h]anthracene	330	330	1000000		37 RV	110 U	38 U	37 U
Dibenzofuran	7000	59000	210000		75 RV	180 U	77 U	74 U
Diethyl phthalate					75 RV	180 U	77 U	74 U
Dimethyl phthalate					75 RV	180 U	77 U	74 U
Di-n-butyl phthalate					75 RV	180 U	77 U	74 U
Di-n-octyl phthalate					75 RV	180 U	77 U	74 U
Fluoranthene	100000	100000	1000000		37 RV	110 U	65.9	37 U
Fluorene	30000	100000	386000		37 RV	180 U	38 U	37 U
Hexachlorobenzene	330	1200	3200		75 RV	110 U	77 U	74 U
Hexachlorobutadiene					37 RV	180 U	38 U	37 U
Hexachlorocyclopentadiene					370 RV	520 U	380 U	370 U
Hexachloroethane					190 RV	140 U	190 U	190 U
Indeno[1,2,3-cd]pyrene	500	500	8200		37 RV	140 U	29.5 J	37 U
Isophorone					75 RV	160 U	77 U	74 U
Naphthalene	12000	100000	12000		37 RV	180 U	38 U	37 U

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Table 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples, 149 Kent Avenue, Brooklyn, New York

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-21	BDS-1	RA-15	RA-22
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/15/2013	1/9/2014	2/14/2013	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	10-14	11-13	7-9
Nitrobenzene n-Nitrosodi-n-propylamine n-Nitrosodiphenylamine Pentachlorophenol Phenanthrene Phenol	 800 100000 330	 6700 100000	 800 1000000 330		75 RV 75 RV 190 RV 370 RV 37 RV 75 RV	160 U 180 U 140 U 140 U 110 U 180 U	77 U 77 U 190 U 380 U 36.2 J 77 U	74 U 74 U 190 U 370 U 37 U 74 U
Purene	330 100000	100000	330 100000		75 KV 37 RV	180 U 110 U	77 U 62 1	74 U 37 U
Total TIC, Semi-Volatile					0	NA	320 J	740 J

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC

Part 375 Protection of Groundwater Standards

Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-19 BDS-3 RA-18 Parameter Unrestricted Restricted Protection of Sample Date: 2/12/2013 1/10/2014 2/15/2013 (Concentrations in $\mu g/kg$) Use Residential Groundwater Sample Depth (ft bffs): 12-14 10-14 11-13 1,1'-Biphenyl 73 U 410 U 76 U ------1,2,4,5-Tetrachlorobenzene 180 U 180 U 190 U --------1,2,4-Trichlorobenzene NA 180 U NA ------1,2-Dichlorobenzene NA 180 U NA ----1.3-Dichlorobenzene NA 180 U NA ------1,4-Dichlorobenzene NA 180 U NA ------2,2'-oxybis (1-chloropropane) 73 U 220 U 76 U ------180 U 2,3,4,6-Tetrachlorophenol NA 190 U -------2,4,5-Trichlorophenol 180 U 180 U 190 U ------2,4,6-Trichlorophenol 180 U 110 U 190 U ------2,4-Dichlorophenol 180 U 160 U 190 U ----2,4-Dimethylphenol 180 U 180 U 190 U -------2,4-Dinitrophenol 730 U 870 U 760 U ------2,4-Dinitrotoluene 73 U 180 U 76 U ------2,6-Dinitrotoluene 73 U 180 U 76 U ----2-Chloronaphthalene 73 U 180 U 76 U -------2-Chlorophenol 180 U 180 U 190 U ------2-Methylnaphthalene 73 U 220 U 76 U ---------2-Methylphenol 73 U 180 U 76 U 330 100000 330 2-Nitroaniline 180 U 180 U 190 U ------2-Nitrophenol 180 U 390 U 190 U ------3&4-Methylphenol 330 100000 330 73 U 260 U 76 U 3,3'-Dichlorobenzidine 180 U 180 U 190 U --------3-Nitroaniline 180 U 180 U 190 U -------4,6-Dinitro-2-methylphenol 730 U 470 U 760 U ------4-Bromophenyl phenyl ether 73 U 180 U 76 U ---------4-Chloro-3-methylphenol 180 U 180 U 190 U ---------4-Chloroaniline 180 U 180 U 190 U -------4-Chlorophenyl phenyl ether 180 U 73 U 76 U ------4-Nitroaniline 180 U 180 U 190 U ------4-Nitrophenol 370 U 250 U 380 U ------Acenaphthene 98000 37 U 38 U 20000 100000 140 U 100000 100000 107000 37 U 140 U 38 U Acenaphthylene

Table 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples, 149 Kent Avenue, Brooklyn, New York

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Table 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples, 149 Kent Avenue, Brooklyn, New York

	NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-19	BDS-3	RA-18
Paramatar	Unrestricted	Postricted	Protection of	Sample Designation	2/12/2013	1/10/2014	2/15/2013
(Concentrations in $\mu\sigma/k\sigma$)	Use	Residential	Groundwater	Sample Denth (ft hffs).	12-14	10-14	11-13
(concentrations in $\mu g/\kappa g$)	0.50	Residentia	Groundwater	Sumple Depth (it bills):	12 11	10 11	11 15
Acetophenone					180 U	180 U	190 U
Anthracene	100000	100000	1000000		37 U	110 U	38 U
Atrazine					180 U	NA	190 U
Benzaldehyde					180 U	NA	190 U
Benzo[a]anthracene	1000	1000	1000		21.6 J	110 U	21.9 J
Benzo[a]pyrene	1000	1000	22000		37 U	140 U	17.9 J
Benzo[b]fluoranthene	1000	1000	1700		37 U	110 U	38 U
Benzo[g,h,i]perylene	100000	100000	1000000		37 U	140 U	38 U
Benzo[k]fluoranthene	800	3900	1700		37 U	110 U	15.6 J
Benzoic Acid					NA	590 U	NA
Benzyl Alcohol					NA	180 U	NA
Bis(2-chloroethoxy)methane					73 U	200 U	76 U
Bis(2-chloroethyl) ether					73 U	160 U	76 U
Bis(2-ethylhexyl) phthalate					73 U	180 U	76 U
Butylbenzyl phthalate					73 U	180 U	76 U
Caprolactam					73 U	NA	76 U
Carbazole					73 U	180 U	76 U
Chrysene	1000	3900	1000		20.8 J	110 U	19.9 J
Dibenzo[a,h]anthracene	330	330	1000000		37 U	110 U	38 U
Dibenzofuran	7000	59000	210000		73 U	180 U	76 U
Diethyl phthalate					73 U	180 U	76 U
Dimethyl phthalate					38.2 J	180 U	76 U
Di-n-butyl phthalate					73 U	180 U	76 U
Di-n-octyl phthalate					73 U	180 U	76 U
Fluoranthene	100000	100000	1000000		47.6	110 U	46.1
Fluorene	30000	100000	386000		37 U	180 U	38 U
Hexachlorobenzene	330	1200	3200		73 U	110 U	76 U
Hexachlorobutadiene					37 U	180 U	38 U
Hexachlorocyclopentadiene					370 U	520 U	380 U
Hexachloroethane					180 U	140 U	190 U
Indeno[1,2,3-cd]pyrene	500	500	8200		37 U	140 U	38 U
Isophorone					73 U	160 U	76 U
Naphthalene	12000	100000	12000		37 U	180 U	38 U

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Table 5. Summary of Semivolatile Organic Compounds in Post-Remediation Soil Samples, 149 Kent Avenue, Brooklyn, New York

NYSDEC Part 375	NYSDEC Part 375	NYSDEC Part 375	Sample Designation:	RA-19	BDS-3	RA-18
Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	1/10/2014	2/15/2013
Use	Residential	Groundwater	Sample Depth (ft bffs):	12-14	10-14	11-13
				73 U	160 U	76 U
				73 U	180 U	76 U
				180 U	140 U	190 U
800	6700	800		370 U	140 U	380 U
100000	100000	1000000		31.6 J	110 U	40.4
330	100000	330		73 U	180 U	76 U
100000	100000	1000000		37.4	110 U	39.2
				380 J	NA	460 J
	NYSDEC Part 375 Unrestricted Use 800 100000 330 100000 	NYSDEC NYSDEC Part 375 Part 375 Unrestricted Restricted Use Residential 800 6700 100000 100000 330 100000 100000 100000	NYSDEC NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Part 375 Unrestricted Restricted Protection of Groundwater Protection of 800 6700 800 100000 100000 100000 330 100000 330 100000 330 100000	NYSDECNYSDECNYSDECPart 375Part 375Part 375Sample Designation:UnrestrictedRestrictedProtection ofSample Date:UseResidentialGroundwaterSample Depth (ft bffs):80067008001000001000003301000001000003301000003301000001000000	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-19 Unrestricted Restricted Protection of Sample Date: 2/12/2013 Use Residential Groundwater Sample Depth (ft bffs): 12-14 73 U 180 U 800 6700 800 370 U 100000 1000000 330 73 U 100000 1000000 37.4 380 J	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: RA-19 BDS-3 Unrestricted Restricted Protection of Sample Date: 2/12/2013 1/10/2014 Use Residential Groundwater Sample Depth (ft bffs): 12-14 10-14 73 U 160 U 73 U 180 U 73 U 180 U 180 U 140 U 800 6700 800 370 U 140 U 100000 100000 1000000 31.6 J 110 U 330 100000 330 73 U 180 U 100000 100000 37.4 110 U - 380 J NA

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

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DUP - Duplicate sample

µg/kg - Micrograms per kilogram

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Part 375 Protection of Groundwater Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

NYSDEC	NYSDEC	NYSDEC										
Part 375	Part 375	Part 375	Sample Designation:	HA-1B	RA-5	RA-5 DUP	RA-10	RA-10	RA-11A	RA-11B	RA-11B DUP	RA-12
Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	2/26/2013	2/26/2013	2/26/2013	2/26/2013	3/18/2013	3/21/2013	3/21/2013	2/21/2013
Use	Residential	Groundwater	Sample Depth (ft bffs):	20-30	7-9	7-9	10-12	23-25	10-12	23-25	23-25	11-12.5
				2100	10500	9730	9700	2150	6180 JV	3550 JV	3710 JV	12100
				4.4 U	2.3 U	2.2 U	2.4 U	2.3 U	2.2 UJV	1.9 UJV	2 UJV	2.5 UJV
13	16	16		2.1	5	4.7	3.7	2.5	2.2 U	1.9 U	2 U	3.6
350	400	820		11	41.8	38.3	58.4	23 U	47	21.1	20 U	82.5
7.2	72	47		0.44 U	0.38	0.23	0.41	0.23 U	0.51	0.19 U	0.2 U	0.39
2.5	4.3	7.5		0.18 J	0.57 U	0.56 U	0.6 U	0.57 U	0.54 U	0.48 U	0.5 U	0.62 U
				220	674	643	1750	570 U	821	658	665	4470
1		19		NA	0.46 U	0.61	0.84	0.49 U	0.89	0.48 U	0.47 U	1.5
30	180			10	17.2	13.9	28.5	10	18.8	8.8	9.9	43.9
				1.2 J	6	5.6 U	7.5	5.7 U	5.4 U	4.8 U	5 U	10.2
50	270	1720		3.7	15.8	14.8	23.5	3.1	12.9	7.1	6.7	24.8
				6300	23600	21500	24100	5720	27800	8690	9780	32000
63	400	450		1.7 J	7.9	6.8	16.5	2.3 U	7	2.5	2.5	30.1
				330	2490	2320	2360	570 U	1500	1230	1270	3360
1600	2000	2000		56	456	384	508	42.4	572	128	162	650
0.18	0.81	0.73		0.08 U	0.038 U	0.033 U	0.036 U	0.036 U	0.036 U	0.034 U	0.036 U	0.036 U
30	310	130		2.7	13.4	12.4	15.7	4.6 U	11.2	6	6	18.9
				200 J	1420	1370	1510	1100 U	1300 JV	970 UJV	1000 UJV	2650
3.9	180	4		1.8 U	2.3 U	2.2 U	2.4 U	2.3 U	2.2 U	1.9 U	2 U	2.5 U
2	180	8.3		0.88 U	0.57 U	0.56 U	0.6 U	0.57 U	0.54 U	0.48 U	0.5 U	0.62 U
				52 J	1100 U	1100 U	1200 U	1100 U	1100 U	970 U	1000 U	1200 U
				1.8 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	0.97 U	1 U	1.2 U
				12	29	22.2	38.8	10.5	37.3	13.8	15.3	48.4
109	10000	2480		7.4	37.2	39.6	41.3	7.7	31.4	15.3	14.8	77.3
	NYSDEC Part 375 Unrestricted Use 13 350 7.2 2.5 1 30 50 63 63 63 63 63 1600 0.18 30 3.9 2 109	NYSDEC NYSDEC Part 375 Part 375 Unrestricted Restricted Use Restricted 13 16 350 400 7.2 72 2.5 4.3 1 1 30 180 50 270 63 400 0 180 63 400 0 270 1600 2000 0.18 0.81 30 310 3.9 180 2 180 1.09 10000	NYSDEC NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Part 375 Unrestricted Restricted Protection of Groundwater 13 16 16 350 400 820 7.2 72 47 2.5 4.3 7.5 1 19 30 30 180 50 270 1720 53 400 450 1600 2000 2000 0.18 0.81 0.73 30 310 130 3.9 180 4 2 180 8.3	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: Unrestricted Restricted Protection of Sample Designation: Use Residential Groundwater Sample Depth (ft bffs): 13 16 16 350 400 820 7.2 72 47 2.5 4.3 7.5 1 19 30 180 50 270 1720 1600 2000 2000 2000 0.18 0.81 0.73 3.9 180 4 </td <td>NYSDEC NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: HA-1B Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 2100 4.4 U 13 16 16 2.1 350 400 820 11 7.2 72 47 0.44 U 2.5 4.3 7.5 0.18 J 220 1 10 1.2 J 3.7 10 6300 1.7 J 3.7 1.7 J 6300 1.7 J 3.0 1600 2.7 3.0 1.8 U 2.7 13.9 18</td> <td>NYSDEC NYSDEC NYSDEC NYSDEC Sample Designation: HA-1B RA-5 Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 7-9 Sample Depth (ft bffs): 20-30 7-9 4.4 U 2.3 U 13 16 16 2.1 5 350 400 820 11 41.8 7.2 5 350 400 820 11 41.8 0.57 U 220 674 1 19 NA 0.46 U 0.38 2.5 4.3 7.5 0.18 J 0.57 U 220 674 1 19 NA 0.46 U 0.38 30 180 10 17.2 1.2 J 6 50 270 1720 1.330 2490 1600 <t< td=""><td>NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: HA-1B RA-5 NR-5 Dup Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 7-9 7-9 2100 10500 9730 4.4 U 2.3 U 2.2 U 13 16 16 2.1 5 4.7 350 400 820 11 418 38.3 7.2 72 47 0.44 U 0.38 0.23 2.5 4.3 7.5 0.18 J 0.57 U 0.56 U 1.2 J 6 5.6 U 30 180 1.2 J 6 5.6 U 50 270 1720 3.7 15.8 14.8 - - 6300 23600 21500 <</td><td>NYSDECNYSDECNYSDECPart 375Part 375Part 375Sample Designation: Sample Date:HA-18RA-5RA-5 DUPRA-10UnrestrictedRestrictedProtection of GroundwaterSample Date:$1/13/2014$$2/26/2013$$2/26/2013$$2/26/2013$$Use$ResidentialGroundwaterSample Depth (ft bffs):$20-30$$7-9$$7-9$$10-12$$$$$$$$2100$$10500$$9730$$9700$$$$$$$$4.4$ U2.3 U2.2 U2.4 U$13$$16$$16$$2.1$$5$$4.7$$3.7$$350$$400$$820$$11$$41.8$$38.3$$58.4$$7.2$$72$$47$$0.44$ U$0.38$$0.23$$0.41$$2.5$$4.3$$7.5$$0.18$ J0.57 U0.66 U0.6 U$$$$$$$220$$674$$643$$1750$$1$$19NA0.46$ U$0.61$$0.84$$30$$180$$$$10$$17.2$$13.9$$28.5$$$$6300$$23600$$21500$$24100$$63$$400$$450$$1.71$$7.9$$6.8$$16.5$$$$330$$2490$$2320$$2360$$1600$$2000$$2000$$2000$$56$$456$$384$$508$$0.18$<td>NYSDEC NYSDEC NA <th< td=""><td>NYSDEC NYSDEC Sample Designation: HA-1B RA-5 RA-5 DUP RA-10 RA-10 RA-11A Unrestricted Restidential Groundwater Sample Date: 1/13/2014 2/26/2013 2/</td><td>NYSDEC NYSDEC NYSDEC Sample Designation: HA-1B RA-5 RA-5 UP RA-10 RA-11A RA-11B Unrestricted Restricted Protection of Sample Detit 1/13/2014 2/26/2013 2/26/2013 2/26/2013 2/26/2013 2/26/2013 3/18/2013 3/21/2013 Use Residential Groundwater Sample Depth (ft bffs): 20-30 7-9 7-9 10-12 23-25 10-12 23-25 4.4 U 2.3 U 2.2 U 2.4 U 2.3 U 2.2 UJV 1.9 UJV 13 16 16 2.1 5 4.7 3.7 2.5 2.2 U 1.9 U 250 4.00 820 11 41.8 83.3 58.4 2.3 U 47 2.1.1 7.2 72 47 0.44 U 0.38 0.23 0.41 0.23 U 0.51 0.19 U 2.5 4.3 7.5 0.18 J 0.61 0.84 0.49 U 0.89 0.48 U 30 180 10 17</td><td>NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Part 375 Part 375 Part 375 RA-110 RA-110 RA-110 RA-11B RA-11B</td></th<></td></td></t<></td>	NYSDEC NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: HA-1B Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 2100 4.4 U 13 16 16 2.1 350 400 820 11 7.2 72 47 0.44 U 2.5 4.3 7.5 0.18 J 220 1 10 1.2 J 3.7 10 6300 1.7 J 3.7 1.7 J 6300 1.7 J 3.0 1600 2.7 3.0 1.8 U 2.7 13.9 18	NYSDEC NYSDEC NYSDEC NYSDEC Sample Designation: HA-1B RA-5 Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 7-9 Sample Depth (ft bffs): 20-30 7-9 4.4 U 2.3 U 13 16 16 2.1 5 350 400 820 11 41.8 7.2 5 350 400 820 11 41.8 0.57 U 220 674 1 19 NA 0.46 U 0.38 2.5 4.3 7.5 0.18 J 0.57 U 220 674 1 19 NA 0.46 U 0.38 30 180 10 17.2 1.2 J 6 50 270 1720 1.330 2490 1600 <t< td=""><td>NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: HA-1B RA-5 NR-5 Dup Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 7-9 7-9 2100 10500 9730 4.4 U 2.3 U 2.2 U 13 16 16 2.1 5 4.7 350 400 820 11 418 38.3 7.2 72 47 0.44 U 0.38 0.23 2.5 4.3 7.5 0.18 J 0.57 U 0.56 U 1.2 J 6 5.6 U 30 180 1.2 J 6 5.6 U 50 270 1720 3.7 15.8 14.8 - - 6300 23600 21500 <</td><td>NYSDECNYSDECNYSDECPart 375Part 375Part 375Sample Designation: Sample Date:HA-18RA-5RA-5 DUPRA-10UnrestrictedRestrictedProtection of GroundwaterSample Date:$1/13/2014$$2/26/2013$$2/26/2013$$2/26/2013$$Use$ResidentialGroundwaterSample Depth (ft bffs):$20-30$$7-9$$7-9$$10-12$$$$$$$$2100$$10500$$9730$$9700$$$$$$$$4.4$ U2.3 U2.2 U2.4 U$13$$16$$16$$2.1$$5$$4.7$$3.7$$350$$400$$820$$11$$41.8$$38.3$$58.4$$7.2$$72$$47$$0.44$ U$0.38$$0.23$$0.41$$2.5$$4.3$$7.5$$0.18$ J0.57 U0.66 U0.6 U$$$$$$$220$$674$$643$$1750$$1$$19NA0.46$ U$0.61$$0.84$$30$$180$$$$10$$17.2$$13.9$$28.5$$$$6300$$23600$$21500$$24100$$63$$400$$450$$1.71$$7.9$$6.8$$16.5$$$$330$$2490$$2320$$2360$$1600$$2000$$2000$$2000$$56$$456$$384$$508$$0.18$<td>NYSDEC NYSDEC NA <th< td=""><td>NYSDEC NYSDEC Sample Designation: HA-1B RA-5 RA-5 DUP RA-10 RA-10 RA-11A Unrestricted Restidential Groundwater Sample Date: 1/13/2014 2/26/2013 2/</td><td>NYSDEC NYSDEC NYSDEC Sample Designation: HA-1B RA-5 RA-5 UP RA-10 RA-11A RA-11B Unrestricted Restricted Protection of Sample Detit 1/13/2014 2/26/2013 2/26/2013 2/26/2013 2/26/2013 2/26/2013 3/18/2013 3/21/2013 Use Residential Groundwater Sample Depth (ft bffs): 20-30 7-9 7-9 10-12 23-25 10-12 23-25 4.4 U 2.3 U 2.2 U 2.4 U 2.3 U 2.2 UJV 1.9 UJV 13 16 16 2.1 5 4.7 3.7 2.5 2.2 U 1.9 U 250 4.00 820 11 41.8 83.3 58.4 2.3 U 47 2.1.1 7.2 72 47 0.44 U 0.38 0.23 0.41 0.23 U 0.51 0.19 U 2.5 4.3 7.5 0.18 J 0.61 0.84 0.49 U 0.89 0.48 U 30 180 10 17</td><td>NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Part 375 Part 375 Part 375 RA-110 RA-110 RA-110 RA-11B RA-11B</td></th<></td></td></t<>	NYSDEC NYSDEC NYSDEC Part 375 Part 375 Part 375 Sample Designation: HA-1B RA-5 NR-5 Dup Unrestricted Restricted Protection of Sample Depth (ft bffs): 20-30 7-9 7-9 2100 10500 9730 4.4 U 2.3 U 2.2 U 13 16 16 2.1 5 4.7 350 400 820 11 418 38.3 7.2 72 47 0.44 U 0.38 0.23 2.5 4.3 7.5 0.18 J 0.57 U 0.56 U 1.2 J 6 5.6 U 30 180 1.2 J 6 5.6 U 50 270 1720 3.7 15.8 14.8 - 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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC											
	Part 375	Part 375	Part 375	Sample Designation:	RA-12	RA-12 DUP	RA-35	RA-35	A-2	RA-36	RA-36	RA-36 DUP	SDS-1	BDS-2
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/21/2013	2/21/2013	8/5/2013	8/5/2013	1/9/2014	8/5/2013	8/5/2013	8/5/2013	1/9/2014	1/13/2014
(Concentrations in mg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	23-25	4 - 6	6 - 8	10-15	8 - 10	10 - 12	10 - 12	10-14	10-14
Aluminum					7820	5890	9180	12200	6800	13500	5540	5340	6800	6400
Antimony					2 UJV	2.5 UJV	2.3 U	2.5 U	2.1 J	2.5 U	2.3 U	2.4 U	2.2 J	2.5 J
Arsenic	13	16	16		2.1	2.5 U	2.3 U	2.5 U	6.5	6.4	2.3 U	2.4 U	6.6	21
Barium	350	400	820		40.2	32.1	70.7	76.3	65	81.5	51.5	33.4	60	93
Beryllium	7.2	72	47		0.25	0.25 U	0.65	0.75	0.51	0.63	0.33	0.38	0.47	0.42 J
Cadmium	2.5	4.3	7.5		0.5 U	0.64 U	0.58 U	0.62 U	0.87 U	1.3	0.57 U	0.6 U	0.86 U	0.42 J
Calcium					1620	1270	6270	1550	7300	2340	2810	1880	4900	9200
Chromium, Hexavalent	1		19		0.51 U	0.5 U	0.47 U	0.62	NA	1.1	0.45 U	0.46 U	0.92 U	0.93 U
Chromium	30	180			16.4	15.3	28.2	33.4	26	27	13.8	14.5	22	39
Cobalt					6.1	6.4 U	9.7	9.7	6.5	9.6	7.6	6 U	6.7	6.3
Copper	50	270	1720		11.6	9.7	20	24.1	48	32.8	13.4	12.9	32	51
Iron					14700	14800	29800	32600	22000	25800	14900	16300	25000	20000
Lead	63	400	450		4.6	4.2	9.8	12.2	71	69.8	5.6	5.3	55	53
Magnesium					2680	1960	3740	3330	2700	3380	2340	2030	2200	2100
Manganese	1600	2000	2000		227	150	632	466	410	618	776	391	400	250
Mercury	0.18	0.81	0.73		0.042 U	0.037 U	0.038 U	0.038 U	0.19	0.23	0.034 U	0.037 U	0.19	0.44
Nickel	30	310	130		13.8	9.6	19.7	18.8	14	27.1	12	10.2	13	20
Potassium					1740	1300 U	1800	2330	1200	1680	1100 U	1200 U	1100	1200
Selenium	3.9	180	4		2 U	2.5 U	2.3 U	2.5 U	1.7 U	2.5 U	2.3 U	2.4 U	1.7 U	1.8 U
Silver	2	180	8.3		0.5 U	0.64 U	0.58 U	0.82	0.87 U	0.61 U	0.57 U	0.6 U	0.86 U	0.23 J
Sodium					1000 U	1300 U	1200 U	1200 U	140 J	1200 U	1100 U	1200 U	73 J	390
Thallium					1 U	1.3 U	1.2 U	1.2 U	1.7 U	1.2 U	1.1 U	1.2 U	1.7 U	1.8 U
Vanadium					24.1	25.6	43.8	49.1	31	41.2	26.1	25	29	28
Zinc	109	10000	2480		27.9	24	45.4	59.3	110	289	25.5	25.3	87	100

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Part 375 Unrestricted Use Standards

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Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Protection of Groundwater	Sample Designation: Sample Date: Sample Depth (ft bffs):	BDS-2DUP 1/13/2014 10-14	RA-16 2/13/2013 11-13	RA-32 4/26/2013 4-6	RA-32 DUP 4/26/2013 4-6	SDS-2 1/10/2014 10-14	RA-14 2/12/2013 11-13	RA-20 2/13/2013 11-13	RA-23 2/13/2013 11-13	RA-13 2/14/2013 11-13
Aluminum					7200	16700 JV	8580	10000	8900	11100 JV	20400 JV	19400 JV	21400 JV
Antimony					2.4 J	2 UJV	2.4 UJV	2.3 UJV	7.2	2.6 UJV	2 UJV	2 UJV	2 UJV
Arsenic	13	16	16		16	3.2	10.4	13.4	9.6	8.5	3.6	4.3	4.5
Barium	350	400	820		99	114	129	112	94	70.9	154	126	180
Beryllium	7.2	72	47		0.54	0.42	0.55	0.62	0.55	0.85	0.49	0.57	0.8
Cadmium	2.5	4.3	7.5		0.09 J	0.5 U	0.76	0.59	0.17 J	0.65 U	0.5 U	0.5 U	0.49 U
Calcium					7800	1130	5790	5660	2600	3830	660	1560	1330
Chromium, Hexavalent	1		19		0.92 U	0.54 U	0.47 U	0.93	0.96 U	3.6	0.54 U	0.53 U	0.82
Chromium	30	180		ſ	37	42.3	43.9	50.1	31	78.2	46.6	50	49.7
Cobalt				Let a set	7.2	11.8	7.4	8.1	6.8	12.2	15.2	18.7	11.3
Copper	50	270	1720		49	26.2	36.1	38.1	30	33	39.1	30.2	42.2
Iron					27000	32000 JV	21100 JV	23600 JV	21000	42400 JV	35500 JV	33500 JV	32300 JV
Lead	63	400	450		43	13	112	70	71	24.9	12.2	13	13.6
Magnesium					2300	5270	2530	3100	2400	2370	8350	6660	7570
Manganese	1600	2000	2000		420	609	300	330	260	662	492	720	291
Mercury	0.18	0.81	0.73		0.57	0.043 U	0.26	0.24	0.38	0.13	0.04 U	0.042 U	0.041 U
Nickel	30	310	130	-	20	25.1	20.1	21.2	23	22.7	31.7	33.9	33.8
Potassium					1600	4380	1410	1660	820	1860	6280	4930	5630
Selenium	3.9	180	4		1.7 U	2 U	2.4 U	2.3 U	1.9 U	2.6 U	2 U	2 U	2 U
Silver	2	180	8.3		0.22 J	0.89	0.61 U	0.59 U	0.94 U	0.65 U	0.86	0.97	0.61
Sodium					460	1000 U	1200 U	1200 U	100 J	1300 U	1000 U	1000 U	980 U
Thallium					1.7 U	1 U	1.2 U	1.2 U	1.9 U	1.3 U	1 U	1 U	0.98 U
Vanadium					35	55.6	28.2	31.5	26	54.4	67.1	64.3	61.3
Zinc	109	10000	2480		98	71.3	122	110	97	68.1	116	107	100

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Parameter (Concentrations in mg/kg)	NYSDEC Part 375 Unrestricted Use	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Protection of Groundwater	Sample Designation: Sample Date: Sample Depth (ft bffs):	RA-17 2/12/2013 10-12	RA-17 DUP 2/12/2013 10-12	B-IW2 2/12/2014 25-30	B-1W3 2/14/2014 25-30	RA-21 3/15/2013 10-12	BDS-1 1/9/2014 10-14	RA-15 2/14/2013 11-13	RA-22 2/15/2013 7-9	RA-19 2/12/2013 12-14
Aluminum					15900 IV	3060 IV	2800	2500	17400 IV	4900	9580 IV	9350	8560 IV
Antimony					2.5 UIV	2.3 UIV	16J	46U	2.2 UIV	4 3 U	2.2 UIV	2.3 UIV	2.2.UIV
Arsenic	13	16	16		3.8	2.3 U	17	2.5	39	19	8.8	3.8	75
Barium	350	400	820		98 7 JV	23 UIV	15	15	58.2	39	58.7	43.7	22 U
Beryllium	72	72	47		0 87 JV	0.23 UIV	0 14 J	0 14 J	0.57	0.21 J	0 33	0.62	0.39
Cadmium	2.5	43	7.5		0.63 U	0.57 U	0.92 U	0.92 U	0 55 U	0.85 U	0 55 U	0.58 U	0 54 U
Calcium					2330 JV	710 JV	490	420	1350	380	1260	580 U	540 U
Chromium, Hexavalent	1		19		0.49 U	0.45 U	9.4	7.3	0.52	0.34 J	1.1	0.45	0.83
Chromium	30	180			37 JV	8.6 JV	NA	NA	24.8	14	32.6	28.8	14.3
Cobalt					11.9 JV	5.7 UJV	3.2	2.6	7.7	6.2	9.5	8.4	5.4 U
Copper	50	270	1720		37.9 JV	7.3 JV	6.8	5.4	13.1	9.3	34.4	19.7	11.3
Iron					28000 JV	7610 JV	7600	9700	21500	12000	23300 JV	26800	11600 JV
Lead	63	400	450		15 JV	2.3 JV	1.8 J	5.1	9.3	3.2 J	32.3	8.2	8.4
Magnesium					5030 JV	989 JV	1100	970	3160	1800	3110	2730	2210
Manganese	1600	2000	2000		523 JV	94.6 JV	130	120	468	450	397	376	87.2
Mercury	0.18	0.81	0.73		0.041 U	0.034 U	0.08 U	0.09 U	0.034	0.08 U	0.037 U	0.034 U	0.035 U
Nickel	30	310	130		28.7 JV	6.1 JV	5.4	4.6	13.1	8	19.9	17.1	11.7
Potassium					3580 JV	1100 UJV	320	320	1520 JV	1400	1440	1620	1100 U
Selenium	3.9	180	4		2.5 U	2.3 U	1.8 U	1.8 U	2.2 U	1.7 U	2.2 U	2.3 U	2.2 U
Silver	2	180	8.3		0.63 U	0.57 U	0.92 U	0.92 U	0.55 U	0.85 U	0.8	0.58 U	0.54 U
Sodium					1300 U	1100 U	74 J	70 J	1100 U	120 J	1100 U	1200 U	1100 U
Thallium					1.3 U	1.1 U	1.8 U	1.8 U	1.1 U	1.7 U	1.1 U	1.2 U	1.1 U
Vanadium					45.9 JV	13.2 JV	13	9.5	29.8	20	36.1	37	21.6
Zinc	109	10000	2480		74 JV	11.4 JV	12	11	48.3	18	64.1	45.7	31.5

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V - Value altered or qualifier added during data validation

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

-- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Protection of Groundwater Standards

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Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

Table 6.	Summary	of Metals in	Post-Remedi	ation Soil	Samples, 14	9 Kent A	Avenue, I	Brooklyn,	New	York
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	NYSDEC	NYSDEC	NYSDEC			
	Part 375	Part 375	Part 375	Sample Designation:	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/10/2014	2/15/2013
(Concentrations in mg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	11-13
Aluminum					5600	10100
Antimony					4.3 U	2.3 UJV
Arsenic	13	16	16		3.2	6.8
Barium	350	400	820		26	50.9
Beryllium	7.2	72	47		0.34 J	0.64
Cadmium	2.5	4.3	7.5		0.86 U	0.57 U
Calcium					420	2920
Chromium, Hexavalent	1		19		0.89 U	0.76 JV
Chromium	30	180			15	27.4
Cobalt					4.9	8
Copper	50	270	1720		13	21.8
Iron					16000	24900
Lead	63	400	450		4.0 J	15.8
Magnesium					1600	3180
Manganese	1600	2000	2000		130	297
Mercury	0.18	0.81	0.73		0.09 U	0.035 U
Nickel	30	310	130		9.1	21.2
Potassium					830	1590
Selenium	3.9	180	4		1.7 U	2.3 U
Silver	2	180	8.3		0.86 U	0.57 U
Sodium					78 J	1100 U
Thallium					1.7 U	1.1 U
Vanadium					21	40.1
Zinc	109	10000	2480		28	44.6

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

NA - Compound was not analyzed for by laboratory

UJ - The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise

R - The data are unusable. The analyte may or may not be present

V - Value altered or qualifier added during data validation

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	HA-1B	RA-5	RA-5 DUP	RA-10	RA-10
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	2/26/2013	2/26/2013	2/26/2013	2/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	20-30	7-9	7-9	10-12	23-25
Aroclor-1016					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1221					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1232					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1242					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1248					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1254					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1260					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1262					36.6 U	36 U	37 U	37 U	37 U
Aroclor-1268					36.6 U	36 U	37 U	37 U	37 U
Total PCBs	100	1000	3200		0	0	0	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

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Part 375 Protection of Groundwater Standards

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-11A	RA-11B	RA-11B DUP	RA-12	RA-12
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/18/2013	3/21/2013	3/21/2013	2/21/2013	2/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	23-25	23-25	11-12.5	23-25
Aroclor-1016					33 U	39 U	38 U	41 U	46 U
Aroclor-1221					33 U	39 U	38 U	41 U	46 U
Aroclor-1232					33 U	39 U	38 U	41 U	46 U
Aroclor-1242					33 U	39 U	38 U	41 U	46 U
Aroclor-1248					33 U	39 U	38 U	41 U	46 U
Aroclor-1254					33 U	39 U	38 U	41 U	46 U
Aroclor-1260					33 U	39 U	38 U	41 U	46 U
Aroclor-1262					33 U	39 U	38 U	41 U	46 U
Aroclor-1268					33 U	39 U	38 U	41 U	46 U
Total PCBs	100	1000	3200		0	0	0	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

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Part 375 Protection of Groundwater Standards

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-12 DUP	RA-35	RA-35	A-2	RA-36	RA-36
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/21/2013	8/5/2013	8/5/2013	1/9/2014	8/5/2013	8/5/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	4 - 6	6 - 8	10-15	8 - 10	10 - 12
Aroclor-1016					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1221					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1232					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1242					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1248					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1254					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1260					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1262					41 U	37 U	35 U	38.4 U	40 U	35 U
Aroclor-1268					41 U	37 U	35 U	38.4 U	40 U	35 U
Total PCBs	100	1000	3200		0	0	0	0	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-36 DUP	SDS-1	BDS-2	BDS-2DUP	RA-16
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	1/9/2014	1/13/2014	1/13/2014	2/13/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10 - 12	10-14	10-14	10-14	11-13
Aroclor-1016					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1221					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1232					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1242					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1248					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1254					37 U	37.9 U	45.5	79.4	43 U
Aroclor-1260					37 U	37.9 U	59.8	49.9	43 U
Aroclor-1262					37 U	37.9 U	36.6 U	36.6 U	43 U
Aroclor-1268					37 U	37.9 U	36.6 U	36.6 U	43 U
Total PCBs	100	1000	3200		0	0	105.3	129.3	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

NYSDEC - New York State Department of Environmental Conservation

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-32	RA-32 DUP	SDS-2	RA-14	RA-20
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	4/26/2013	4/26/2013	1/10/2014	2/12/2013	2/13/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	4-6	4-6	10-14	11-13	11-13
Aroclor-1016					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1221					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1232					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1242					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1248					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1254					38 U	39 U	17.7 J	45 U	48 U
Aroclor-1260					38 U	39 U	55.2	45 U	48 U
Aroclor-1262					38 U	39 U	38.0 U	45 U	48 U
Aroclor-1268					38 U	39 U	38.0 U	45 U	48 U
Total PCBs	100	1000	3200		0	0	72.9	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-23	RA-13	RA-17	RA-17 DUP	B-IW2
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/13/2013	2/14/2013	2/12/2013	2/12/2013	2/12/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	11-13	11-13	10-12	10-12	25-30
Aroclor-1016					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1221					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1232					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1242					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1248					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1254					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1260					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1262					46 U	42 U	42 U	33 U	39.2 U
Aroclor-1268					46 U	42 U	42 U	33 U	39.2 U
Total PCBs	100	1000	3200		0	0	0	0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	B-1W3	RA-21	BDS-1	RA-15	RA-22	RA-19
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/14/2014	3/15/2013	1/9/2014	2/14/2013	2/15/2013	2/12/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	25-30	10-12	10-14	11-13	7-9	12-14
Aroclor-1016					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1221					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1232					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1242					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1248					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1254					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1260					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1262					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Aroclor-1268					37.4 U	37 U	36.7 U	37 U	37 U	37 U
Total PCBs	100	1000	3200		0	0	0	0	0	0

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC			
	Part 375	Part 375	Part 375	Sample Designation:	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/10/2014	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	11-13
Aroclor-1016					36.7 U	37 U
Aroclor-1221					36.7 U	37 U
Aroclor-1232					36.7 U	37 U
Aroclor-1242					36.7 U	37 U
Aroclor-1248					36.7 U	37 U
Aroclor-1254					36.7 U	37 U
Aroclor-1260					36.7 U	37 U
Aroclor-1262					36.7 U	37 U
Aroclor-1268					36.7 U	37 U
Total PCBs	100	1000	3200		0	0

J - Estimated value

U - Indicates that the compound was analyzed for but not detected

DUP - Duplicate sample

µg/kg - Micrograms per kilogram

ft bffs - Feet below former floor slab

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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-5	RA-5 DUP	RA-10	RA-10	RA-11A
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	2/26/2013	2/26/2013	2/26/2013	3/18/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	7-9	10-12	23-25	10-12
2,4,5-T					3.7 U	3.3 U	3.5 U	3.7 U	3.8 U
2,4,5-TP	3800	100000	3800		3.7 U	3.3 U	3.5 U	3.7 U	3.8 U
2,4-D					19 U	17 U	18 U	18 U	19 U
2,4-DB					19 U	17 U	18 U	18 U	19 U
4,4'-DDD	3.3	13000	14000		0.73 U	0.73 U	5.7 JV	0.75 U	1.1
4,4'-DDE	3.3	8900	17000		0.73 U	0.73 U	7.8	0.75 U	1
4,4'-DDT	3.3	7900	136000		0.73 U	0.73 U	181	0.75 U	7.2
Aldrin	5	97	190		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
alpha-BHC	20	480	20		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
alpha-Chlordane	94	4200	2900		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
beta-BHC	36	360	90		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Chlordane					NA	NA	NA	NA	NA
Dalapon					3.7 U	3.3 U	3.5 U	3.7 U	3.8 U
delta-BHC	40	100000	250		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Dicamba					3.7 U	3.3 U	3.5 U	3.7 U	3.8 U
Dichloroprop					19 U	17 U	18 U	18 U	19 U
Dieldrin	5	200	100		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Dinoseb					19 U	17 U	18 U	18 U	19 U
Endosulfan I	2400	24000	102000		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Endosulfan II	2400	24000	102000		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Endosulfan sulfate	2400	24000	1000000		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Endrin aldehyde					0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Endrin ketone					0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Endrin	14	11000	60		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
gamma-BHC (Lindane)	100	1300	100		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
gamma-Chlordane					0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Heptachlor epoxide					0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
Heptachlor	42	2100	380		0.73 U	0.73 U	0.73 U	0.75 U	0.67 U
MCPA					1900 U	1700 U	1800 U	1800 U	1900 U
MCPP					1900 U	1700 U	1800 U	1800 U	1900 U

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-5	RA-5 DUP	RA-10	RA-10	RA-11A
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/26/2013	2/26/2013	2/26/2013	2/26/2013	3/18/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	7-9	10-12	23-25	10-12
Methoxychlor					1.5 U	1.5 U	1.5 U	1.5 U	1.3 U
Pentachlorophenol	800	6700	800		1.9 U	1.7 U	1.8 U	1.8 U	1.9 U
Toxaphene					18 U	18 U	18 U	19 U	17 U

J - Estimated value

- U Indicates that the compound was analyzed for but not detected
- PI The RPD between the results for the two columns exceeds the method-specified criteria. The lower value for the two columns has been reported
- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC

- Part 375 Protection of Groundwater Standards
- Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-11B	RA-11B DUP	RA-12	RA-12	RA-12 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/21/2013	3/21/2013	2/21/2013	2/21/2013	2/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	23-25	11-12.5	23-25	23-25
2,4,5-T					3.8 U	3.5 U	3.8 U	3.7 U	3.8 U
2,4,5-TP	3800	100000	3800		3.8 U	3.5 U	3.8 U	3.7 U	3.8 U
2,4-D					19 U	18 U	19 U	18 U	19 U
2,4-DB					19 U	18 U	19 U	18 U	19 U
4,4'-DDD	3.3	13000	14000		0.78 U	0.76 U	4.4 NJV	0.86 U	0.79 U
4,4'-DDE	3.3	8900	17000		0.78 U	0.76 U	5	0.86 U	0.79 U
4,4'-DDT	3.3	7900	136000		0.78 U	0.76 U	38.3	0.86 U	0.79 U
Aldrin	5	97	190		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
alpha-BHC	20	480	20		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
alpha-Chlordane	94	4200	2900		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
beta-BHC	36	360	90		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Chlordane					NA	NA	NA	NA	NA
Dalapon					3.8 U	3.5 U	3.8 U	3.7 U	3.8 U
delta-BHC	40	100000	250		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Dicamba					3.8 U	3.5 U	3.8 U	3.7 U	3.8 U
Dichloroprop					19 U	18 U	19 U	18 U	19 U
Dieldrin	5	200	100		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Dinoseb					19 U	18 U	19 U	18 U	19 U
Endosulfan I	2400	24000	102000		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Endosulfan II	2400	24000	102000		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Endosulfan sulfate	2400	24000	1000000		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Endrin aldehyde					0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Endrin ketone					0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Endrin	14	11000	60		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
gamma-BHC (Lindane)	100	1300	100		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
gamma-Chlordane					0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Heptachlor epoxide					0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
Heptachlor	42	2100	380		0.78 U	0.76 U	0.8 U	0.86 U	0.79 U
MCPA					1900 U	1800 U	1900 U	1800 U	1900 U
MCPP					1900 U	1800 U	1900 U	1800 U	1900 U

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-11B	RA-11B DUP	RA-12	RA-12	RA-12 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	3/21/2013	3/21/2013	2/21/2013	2/21/2013	2/21/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	23-25	23-25	11-12.5	23-25	23-25
Methoxychlor					1.6 U	1.5 U	1.6 U	1.7 U	1.6 U
Pentachlorophenol	800	6700	800		1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
Toxaphene					19 U	19 U	20 U	21 U	20 U

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- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
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Part 375 Restricted Residential Standards

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Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-35	RA-35	RA-36	RA-36	RA-36 DUP	SDS-1
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	8/5/2013	8/5/2013	8/5/2013	8/5/2013	1/9/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	4 - 6	6 - 8	8 - 10	10 - 12	10 - 12	10-14
2.4.5-T					3.5 U	4 U	3.7 U	3.5 U	3.6 U	188. U
2.4.5-TP	3800	100000	3800		3.5 U	4 U	3.7 U	3.5 U	3.6 U	188. U
2.4-D					18 U	20 U	19 U	17 U	18 U	188. U
2.4-DB					NA	NA	NA	NA	NA	NA
4.4'-DDD	3.3	13000	14000		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	3.32
4.4'-DDE	3.3	8900	17000		0.74 U	3	2.6	0.71 U	0.71 U	3.33 P
4,4'-DDT	3.3	7900	136000		0.74 U	25.2	17.5	0.71 U	0.71 U	16.1
Aldrin	5	97	190		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
alpha-BHC	20	480	20		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	0.740 U
alpha-Chlordane	94	4200	2900		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	2.22 U
beta-BHC	36	360	90		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
Chlordane					NA	NA	NA	NA	NA	14.4 U
Dalapon					NA	NA	NA	NA	NA	NA
delta-BHC	40	100000	250		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
Dicamba					NA	NA	NA	NA	NA	NA
Dichloroprop					NA	NA	NA	NA	NA	NA
Dieldrin	5	200	100		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.11 U
Dinoseb					NA	NA	NA	NA	NA	NA
Endosulfan I	2400	24000	102000		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
Endosulfan II	2400	24000	102000		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
Endosulfan sulfate	2400	24000	1000000		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	0.740 U
Endrin aldehyde					0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	NA
Endrin ketone					0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	1.78 U
Endrin	14	11000	60		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	0.740 U
gamma-BHC (Lindane)	100	1300	100		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	0.740 U
gamma-Chlordane					0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	2.22 U
Heptachlor epoxide					0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	3.33 U
Heptachlor	42	2100	380		0.74 U	0.71 U	0.81 U	0.71 U	0.71 U	0.888 U
MCPA					NA	NA	NA	NA	NA	NA
MCPP					NA	NA	NA	NA	NA	NA

	NYSDEC	NYSDEC	NYSDEC							
	Part 375	Part 375	Part 375	Sample Designation:	RA-35	RA-35	RA-36	RA-36	RA-36 DUP	SDS-1
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	8/5/2013	8/5/2013	8/5/2013	8/5/2013	8/5/2013	1/9/2014
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	4 - 6	6 - 8	8 - 10	10 - 12	10 - 12	10-14
Methoxychlor					1.5 U	1.4 U	1.6 U	1.4 U	1.4 U	3.33 U
Pentachlorophenol	800	6700	800		NA	NA	NA	NA	NA	NA
Toxaphene					18 U	18 U	20 U	18 U	18 U	33.3 U

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Part 375 Unrestricted Use Standards

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	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	BDS-2	BDS-2DUP	RA-16	RA-32	RA-32 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	1/13/2014	2/13/2013	4/26/2013	4/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	10-14	11-13	4-6	4-6
2,4,5-T					193. U	186. U	4 U	3.9 U	3.5 U
2,4,5-TP	3800	100000	3800		193. U	186. U	4 U	3.9 U	3.5 U
2,4-D					193. U	186. U	20 U	19 U	18 U
2,4-DB					NA	NA	20 U	19 U	18 U
4,4'-DDD	3.3	13000	14000		24.8	22.9	0.86 U	23.2	14.2 JV
4,4'-DDE	3.3	8900	17000		8.31	6.32	0.86 U	6.1 JV	3.8 NJV
4,4'-DDT	3.3	7900	136000		9.02 PI	10.6 PI	0.86 U	6.6 JV	4.4 NJV
Aldrin	5	97	190		1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
alpha-BHC	20	480	20		0.747 U	0.750 U	0.86 U	0.75 U	0.78 U
alpha-Chlordane	94	4200	2900		2.24 U	2.25 U	0.86 U	0.75 U	0.9 NJV
beta-BHC	36	360	90		1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
Chlordane					14.6 U	14.6 U	NA	NA	NA
Dalapon					NA	NA	4 U	3.9 U	3.5 U
delta-BHC	40	100000	250		1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
Dicamba					NA	NA	4 U	3.9 U	3.5 U
Dichloroprop					NA	NA	20 U	19 U	18 U
Dieldrin	5	200	100		1.12 U	1.12 U	0.86 U	0.75 U	0.78 U
Dinoseb					NA	NA	20 U	19 U	18 U
Endosulfan I	2400	24000	102000		1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
Endosulfan II	2400	24000	102000		1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
Endosulfan sulfate	2400	24000	1000000		0.747 U	0.750 U	0.86 U	0.75 U	0.78 U
Endrin aldehyde					NA	NA	0.86 U	0.75 U	0.78 U
Endrin ketone					1.79 U	1.80 U	0.86 U	0.75 U	0.78 U
Endrin	14	11000	60		0.747 U	0.750 U	0.86 U	0.75 U	0.78 U
gamma-BHC (Lindane)	100	1300	100		3.91 PI	7.78 PI	0.86 U	0.75 U	0.78 U
gamma-Chlordane					2.24 U	2.25 U	0.86 U	0.75 U	0.83 NJV
Heptachlor epoxide					3.36 U	3.37 U	0.86 U	0.75 U	1 JV
Heptachlor	42	2100	380		0.896 U	0.900 U	0.86 U	0.75 U	0.78 U
MCPA					NA	NA	2000 U	1900 U	1800 U
MCPP					NA	NA	2000 U	1900 U	1800 U

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	BDS-2	BDS-2DUP	RA-16	RA-32	RA-32 DUP
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/13/2014	1/13/2014	2/13/2013	4/26/2013	4/26/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	10-14	11-13	4-6	4-6
Methoxychlor					3.36 U	3.37 U	1.7 U	1.5 U	1.6 U
Pentachlorophenol	800	6700	800		NA	NA	2 U	2.1	2.2
Toxaphene					33.6 U	33.7 U	22 U	19 U	20 U

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Part 375 Unrestricted Use Standards

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	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	SDS-2	RA-14	RA-20	RA-23	RA-13
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/10/2014	2/12/2013	2/13/2013	2/13/2013	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	11-13	11-13	11-13	11-13
2,4,5-T					196. U	3.6 U	4.4 U	4.1 U	4.1 U
2,4,5-TP	3800	100000	3800		196. U	3.6 U	4.4 U	4.1 U	4.1 U
2,4-D					196. U	18 U	22 U	20 U	20 U
2,4-DB					NA	18 U	22 U	20 U	20 U
4,4'-DDD	3.3	13000	14000		31.4	2.4	0.96 U	0.92 U	0.84 U
4,4'-DDE	3.3	8900	17000		12.9	2.8 UV	0.96 U	0.92 U	0.84 U
4,4'-DDT	3.3	7900	136000		15.2	14.2	0.96 U	0.92 U	0.84 U
Aldrin	5	97	190		1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
alpha-BHC	20	480	20		0.784 U	0.91 U	0.96 U	0.92 U	0.84 U
alpha-Chlordane	94	4200	2900		2.35 U	0.91 U	0.96 U	0.92 U	0.84 U
beta-BHC	36	360	90		1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
Chlordane					15.3 U	NA	NA	NA	NA
Dalapon					NA	3.6 U	4.4 U	4.1 U	4.1 U
delta-BHC	40	100000	250		1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
Dicamba					NA	3.6 U	4.4 U	4.1 U	4.1 U
Dichloroprop					NA	18 U	22 U	20 U	20 U
Dieldrin	5	200	100		1.18 U	0.91 U	0.96 U	0.92 U	0.84 U
Dinoseb					NA	18 U	22 U	20 U	20 U
Endosulfan I	2400	24000	102000		1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
Endosulfan II	2400	24000	102000		1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
Endosulfan sulfate	2400	24000	1000000		0.784 U	0.91 U	0.96 U	0.92 U	0.84 U
Endrin aldehyde					NA	0.91 U	0.96 U	0.92 U	0.84 U
Endrin ketone					1.88 U	0.91 U	0.96 U	0.92 U	0.84 U
Endrin	14	11000	60		0.784 U	0.91 U	0.96 U	0.92 U	0.84 U
gamma-BHC (Lindane)	100	1300	100		1.44 PI	0.91 U	0.96 U	0.92 U	0.84 U
gamma-Chlordane					2.35 U	0.91 U	0.96 U	0.92 U	0.84 U
Heptachlor epoxide					3.43 J	0.91 U	0.96 U	0.92 U	0.84 U
Heptachlor	42	2100	380		0.940 U	0.91 U	0.96 U	0.92 U	0.84 U
MCPA					NA	1800 U	2200 U	2000 U	2000 U
MCPP					NA	1800 U	2200 U	2000 U	2000 U

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	SDS-2	RA-14	RA-20	RA-23	RA-13
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	1/10/2014	2/12/2013	2/13/2013	2/13/2013	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-14	11-13	11-13	11-13	11-13
Methoxychlor					3.52 U	1.8 U	1.9 U	1.8 U	1.7 U
Pentachlorophenol	800	6700	800		NA	1.8 U	2.2 U	2 U	2 U
Toxaphene					35.2 U	23 U	24 U	23 U	21 U

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Part 375 Unrestricted Use Standards

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	Part 375	Part 375	Part 375	Sample Designation:	RA-17	RA-17 DUP	RA-21	BDS-1	RA-15
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/12/2013	3/15/2013	1/9/2014	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	10-12	10-12	10-14	11-13
2,4,5-T					3.6 U	3.3 U	3.4 U	186. U	3.4 U
2,4,5-TP	3800	100000	3800		3.6 U	3.3 U	3.4 U	186. U	3.4 U
2,4-D					18 U	17 U	17 U	186. U	17 U
2,4-DB					18 U	17 U	17 U	NA	17 U
4,4'-DDD	3.3	13000	14000		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
4,4'-DDE	3.3	8900	17000		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
4,4'-DDT	3.3	7900	136000		0.85 U	0.67 U	0.75 U	3.20 U	2.9
Aldrin	5	97	190		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
alpha-BHC	20	480	20		0.85 U	0.67 U	0.75 U	0.711 U	0.74 U
alpha-Chlordane	94	4200	2900		0.85 U	0.67 U	0.75 U	2.13 U	0.74 U
beta-BHC	36	360	90		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
Chlordane					NA	NA	NA	13.9 U	NA
Dalapon					3.6 U	3.3 U	3.4 U	NA	3.4 U
delta-BHC	40	100000	250		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
Dicamba					3.6 U	3.3 U	3.4 U	NA	3.4 U
Dichloroprop					18 U	17 U	17 U	NA	17 U
Dieldrin	5	200	100		0.85 U	0.67 U	0.75 U	1.07 U	0.74 U
Dinoseb					18 U	17 U	17 U	NA	17 U
Endosulfan I	2400	24000	102000		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
Endosulfan II	2400	24000	102000		0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
Endosulfan sulfate	2400	24000	1000000		0.85 U	0.67 U	0.75 U	0.711 U	0.74 U
Endrin aldehyde					0.85 U	0.67 U	0.75 U	NA	0.74 U
Endrin ketone					0.85 U	0.67 U	0.75 U	1.71 U	0.74 U
Endrin	14	11000	60		0.85 U	0.67 U	0.75 U	0.711 U	0.74 U
gamma-BHC (Lindane)	100	1300	100		0.85 U	0.67 U	0.75 U	0.711 U	0.74 U
gamma-Chlordane					0.85 U	0.67 U	0.75 U	2.13 U	0.74 U
Heptachlor epoxide					0.85 U	0.67 U	0.75 U	3.20 U	0.74 U
Heptachlor	42	2100	380		0.85 U	0.67 U	0.75 U	0.854 U	0.74 U
MCPA					1800 U	1700 U	1700 U	NA	1700 U
MCPP					1800 U	1700 U	1700 U	NA	1700 U

	NYSDEC	NYSDEC	NYSDEC						
	Part 375	Part 375	Part 375	Sample Designation:	RA-17	RA-17 DUP	RA-21	BDS-1	RA-15
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/12/2013	2/12/2013	3/15/2013	1/9/2014	2/14/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	10-12	10-12	10-12	10-14	11-13
Methoxychlor					1.7 U	1.3 U	1.5 U	3.20 U	1.5 U
Pentachlorophenol	800	6700	800		1.8 U	1.7 U	1.7 U	NA	1.7 U
Toxaphene					21 U	17 U	19 U	32.0 U	19 U

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	Part 375	Part 375	Part 375	Sample Designation:	RA-22	RA-19	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/15/2013	2/12/2013	1/10/2014	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	12-14	10-14	11-13
2,4,5-T					3.4 U	3.7 U	184. U	3.8 U
2,4,5-TP	3800	100000	3800		3.4 U	3.7 U	184. U	3.8 U
2,4-D					17 U	19 U	184. U	19 U
2,4-DB					17 U	19 U	NA	19 U
4,4'-DDD	3.3	13000	14000		0.74 U	0.74 U	1.71 U	0.75 U
4,4'-DDE	3.3	8900	17000		0.74 U	0.74 U	1.71 U	0.75 U
4,4'-DDT	3.3	7900	136000		0.74 U	0.74 U	3.21 U	0.75 U
Aldrin	5	97	190		0.74 U	0.74 U	1.71 U	0.75 U
alpha-BHC	20	480	20		0.74 U	0.74 U	0.714 U	0.75 U
alpha-Chlordane	94	4200	2900		0.74 U	0.74 U	2.14 U	0.75 U
beta-BHC	36	360	90		0.74 U	0.74 U	1.71 U	0.75 U
Chlordane					NA	NA	13.9 U	NA
Dalapon					3.4 U	3.7 U	NA	3.8 U
delta-BHC	40	100000	250		0.74 U	0.74 U	1.71 U	0.75 U
Dicamba					3.4 U	3.7 U	NA	3.8 U
Dichloroprop					17 U	19 U	NA	19 U
Dieldrin	5	200	100		0.74 U	0.74 U	1.07 U	0.75 U
Dinoseb					17 U	19 U	NA	19 U
Endosulfan I	2400	24000	102000		0.74 U	0.74 U	1.71 U	0.75 U
Endosulfan II	2400	24000	102000		0.74 U	0.74 U	1.71 U	0.75 U
Endosulfan sulfate	2400	24000	1000000		0.74 U	0.74 U	0.714 U	0.75 U
Endrin aldehyde					0.74 U	0.74 U	NA	0.75 U
Endrin ketone					0.74 U	0.74 U	1.71 U	0.75 U
Endrin	14	11000	60		0.74 U	0.74 U	0.714 U	0.75 U
gamma-BHC (Lindane)	100	1300	100		0.74 U	0.74 U	0.714 U	0.75 U
gamma-Chlordane					0.74 U	0.74 U	2.14 U	0.75 U
Heptachlor epoxide					0.74 U	0.74 U	3.21 U	0.75 U
Heptachlor	42	2100	380		0.74 U	0.74 U	0.856 U	0.75 U
MCPA					1700 U	1900 U	NA	1900 U
MCPP					1700 U	1900 U	NA	1900 U

	NYSDEC	NYSDEC	NYSDEC					
	Part 375	Part 375	Part 375	Sample Designation:	RA-22	RA-19	BDS-3	RA-18
Parameter	Unrestricted	Restricted	Protection of	Sample Date:	2/15/2013	2/12/2013	1/10/2014	2/15/2013
(Concentrations in µg/kg)	Use	Residential	Groundwater	Sample Depth (ft bffs):	7-9	12-14	10-14	11-13
Methoxychlor					1.5 U	1.5 U	3.21 U	1.5 U
Pentachlorophenol	800	6700	800		1.7 U	1.9 U	NA	1.9 U
Toxaphene					18 U	19 U	32.1 U	19 U

J - Estimated value

- U Indicates that the compound was analyzed for but not detected
- PI The RPD between the results for the two columns exceeds the method-specified criteria. The lower value for the two columns has been reported
- NA Compound was not analyzed for by laboratory
- NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value
- V Value altered or qualifier added during data validation
- DUP Duplicate sample
- µg/kg Micrograms per kilogram
- ft bffs Feet below former floor slab
- NYSDEC New York State Department of Environmental Conservation
- -- No NYSDEC Part 375 Standards available

Bold data indicates that parameter was detected above the NYSDEC

- Part 375 Protection of Groundwater Standards
- Shaded data indicates that parameter was detected above the NYSDEC

Part 375 Restricted Residential Standards

Boxed data indicates that parameter was detected above the NYSDEC

Part 375 Unrestricted Use Standards

The former floor slab was located at +16 feet elevation as referenced to the Brooklyn

	NYSDEC Part 375
Parameter	Restricted
i arameter	Residential
	Residential
Valatila Organia Compounds (Concentr	otions in ug/kg)
1 1 1 Trichloroothana	10000
1,1,1,1-Inchloroethane	26000
1,1 Dichloroethane	10000
1,2 / Trimethylbenzene	52000
1.3.5 Trimethylbenzene	52000
1.2-Dichlorobenzene	10000
1.2 Dichloroethane	3100
1.3-Dichlorobenzene	49000
1 4-Dichlorobenzene	13000
1.4-Diovane	13000
2-Butanone (MFK)	10000
A cetone	100000
Benzene	4800
Carbon tetrachloride	2400
Chlorobenzene	10000
Chloroform	49000
cis-1 2-Dichloroethene	10000
Fthylbenzene	41000
Methylene chloride	10000
MTBF	100000
Tetrachloroethene	19000
Toluene	10000
trans-1 2-Dichloroethene	100000
Trichloroethene	21000
Vinyl chloride	900
Xylenes (total)	100000
Semivolatile Organic Compounds (Conc	entrations in µg/kg)
2-Methylphenol	100000
3&4-Methylphenol	100000
Acenaphthene	100000
Acenaphthylene	100000
Anthracene	100000
Benzo[a]anthracene	1000
Benzo[a]pyrene	1000
Benzo[b]fluoranthene	1000
Benzo[g,h,i]perylene	100000
Benzo[k]fluoranthene	3900
Chrysene	3900
Dibenzo[a,h]anthracene	330
Dibenzofuran	59000
Fluoranthene	100000
Fluorene	100000
Hexachlorobenzene	1200
Indeno[1,2,3-cd]pyrene	500
Naphthalene	100000
Pentachlorophenol	6700
Phenanthrene	100000
Phenol	100000
Pyrene	100000

Table 9. Backfill Criteria, 149 Kent Avenue, Brooklyn, New York

	NYSDEC Part 375
Parameter	Restricted
	Residential
Metals (Concentrations in mg/kg)	
Antimony	1.6
Arsenic	16
Barium	400
Beryllium	12
Cadmium	4.3
Chromium, Hexavalent	110
Chromium	180
Copper	270
Lead	400
Manganese	2000
Mercury	0.81
Nickel	310
Selenium	180
Silver	180
Zinc	10000
Pesticides (Concentrations in 119/kg)	
2 4 5-TP	100000
4 4'-DDD	13000
4 4'-DDF	8900
4,4 DDL 4.4'-DDT	7900
Aldrin	97
alpha BHC	480
alpha-Chlordane	4200
beta BHC	360
dalta BUC	10000
Dieldrin	200
Endogulfon I	200
Endosultan I	24000
Endosultan II Endosultan sultata	24000
Endosunan sunate	24000
Eliuliii	11000
gamma-BHC (Lindane)	1300
Heptachior Deute-shlaren hen el	2100
rentachiorophenoi	6700

Table 9. Backfill Criteria, 149 Kent Avenue, Brooklyn, New York

Total Polychlorinated Biphenyls (Concentrations in $\mu g/kg$)

Total Polychlorinated Biphenyls	1000
---------------------------------	------

 $\mu g/kg$ - Micrograms per kilogram

mg/kg - Milligrams per kilogram

NYSDEC - New York State Department of Environmental Conservation

	NYSDEC	Sample Designation:	OW-3	OW-3	OW-3 DUP	OW-3	OW-3	OW-3	OW-3
Parameter	AWQSGVs	Sample Date:	1/23/2014	3/10/2014	3/10/2014	4/14/2014	7/23/2014	10/30/2014	1/29/2015
(Concentrations in µg/L)	(µg/L)								
1,1-Dichloroethene	5		0.5 U	0.5 U					
1,2-Dichloroethene (total)	5		NA	NA	NA	NA	NA	2.5 U	2.5 U
1,2-Dichloropropane	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane			RV	RV	RV	RV	RV	RV	RV
2-Butanone (MEK)	50		5 UJV	5 U	5 U	5 UJV	5 U	5 U	5 U
Acetone	50		5 UJV	5 UJV	5 UJV	5 UJV	2.9 J	1.8 J	5 UJV
Benzene	1		0.5 U	0.5 U					
Chloroform	7		2.5 U	2.5 U					
cis-1,2-Dichloroethene	5		2.5 U	2.5 U					
m+p-Xylene	5		2.5 U	2.5 U					
Tetrachloroethene	5		2.9	0.5 U	0.5 U	0.5 U	0.64	0.76	2.4
trans-1,2-Dichloroethene	5		2.5 U	2.5 U					
Trichloroethene	5		0.63	0.5 U	0.5 U	0.5 U	0.5 U	0.58	0.5 U
Trichlorofluoromethane	5		2.5 U	4.7	4.7	3.5	2.5 U	2.5 UJV	2.5 U
Vinyl chloride	2		1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5		NA	NA	NA	NA	2.5 U	2.5 U	2.5 U

Table 10. Summary of Baseline and Post-Remediation Volatile Organic Compounds in Groundwater, 149 Kent Avenue, New York, New York

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

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NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

REMEDIAL ENGINEERING, P.C.

	NYSDEC	Sample Designation:	OW-3	OW-3	OW-4	OW-4 DUP	OW-4	OW-4 DUP	OW-4
Parameter	AWQSGVs	Sample Date:	4/30/2015	7/6/2015	4/14/2014	4/14/2014	5/14/2014	5/14/2014	7/23/2014
(Concentrations in $\mu g/L$)	(µg/L)								
1,1-Dichloroethene	5		0.50 U	0.50 U	250 UD	250 UD	200 UD	200 UD	120 UD
1,2-Dichloroethene (total)	5		2.5 U	2.5 U	NA	NA	340 JD	350 JD	NA
1,2-Dichloropropane	1		1.0 U	1.0 U	500 UD	500 UD	400 UD	400 UD	250 UD
1,4-Dioxane			250 U	250 U	RVD	RVD	RVD	RVD	RVD
2-Butanone (MEK)	50		5.0 U	5.0 U	2500 UJVD	2500 UJVD	2000 UD	2000 UD	1200 UD
Acetone	50		5.0 U	2.4 J	2500 UJVD	2500 UJVD	2000 UVD	2000 UVD	1200 UD
Benzene	1		0.50 U	0.28 J	250 UD	250 UD	200 UD	260 D	120 UD
Chloroform	7		2.5 U	2.5 U	1200 UD	1200 UD	1000 UD	1000 UD	620 UD
cis-1,2-Dichloroethene	5		2.5 U	2.5 U	1200 UD	1200 UD	340 JD	350 JD	240 JD
m+p-Xylene	5		2.5 U	0.80 J	1200 UD	1200 UD	1000 UD	1000 UD	620 UD
Tetrachloroethene	5		1.5	1.9	23000 D	31000 D	37000 D	38000 D	32000 D
trans-1,2-Dichloroethene	5		2.5 U	2.5 U	1200 UD	1200 UD	1000 UD	1000 UD	620 UD
Trichloroethene	5		0.50 U	0.40 J	250 UD	250 UD	170 JD	160 JD	130 D
Trichlorofluoromethane	5		2.5 U	2.5 U	1200 UD	1200 UD	1000 UD	1000 UD	620 UD
Vinyl chloride	2		1.0 U	1.0 U	500 UD	500 UD	400 UJVD	400 UJVD	250 UD
Xylenes (total)	5		2.5 U	0.80 J	NA	NA	1000 UD	1000 UD	620 UD

Table 10. Summary of Baseline and Post-Remediation Volatile Organic Compounds in Groundwater, 149 Kent Avenue, New York, New York

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample
	NYSDEC	Sample Designation:	OW-4	OW-4	OW-4	OW-4 DUP	OW-4	OW-4 DUP	OW-4
Parameter	AWQSGVs	Sample Date:	10/30/2014	1/29/2015	3/6/2015	3/6/2015	4/30/2015	4/30/2015	7/6/2015
(Concentrations in µg/L)	(µg/L)								
1,1-Dichloroethene	5		25 UD	12 UD	10 UD	10 UD	50 UD	100 UD	1.4 J
1,2-Dichloroethene (total)	5		670 D	590 D	650 D	650 D	360 D	460 JD	670
1,2-Dichloropropane	1		50 UD	25 UD	20 UD	20 UD	100 UD	200 UD	9.7
1,4-Dioxane			RVD	RVD	5000 UD	5000 UD	25000 UD	50000 UD	1200 U
2-Butanone (MEK)	50		250 UD	120 UD	100 UD	100 UD	500 UD	1000 UD	20 J
Acetone	50		250 UD	120 UJVD	30 JD	100 UD	500 UD	1000 UD	17 J
Benzene	1		25 UD	12 UD	10 UD	10 UD	50 UD	100 UD	2.5 U
Chloroform	7		120 UD	62 UD	50 UD	50 UD	250 UD	500 UD	12 U
cis-1,2-Dichloroethene	5		670 D	590 D	650 D	650 D	360 D	460 JD	670
m+p-Xylene	5		120 UD	62 UD	50 UD	50 UD	250 UD	500 UD	12 U
Tetrachloroethene	5		2000 D	1600 D	1300 D	1500 D	10000 D	12000 D	190
trans-1,2-Dichloroethene	5		120 UD	62 UD	50 UD	50 UD	250 UD	500 UD	12 U
Trichloroethene	5		99 D	130 D	150 D	130 D	200 D	250 D	150
Trichlorofluoromethane	5		120 UJVD	62 UD	50 UD	50 UD	250 UD	500 UD	12 U
Vinyl chloride	2		50 UD	16 JD	10 JD	6.7 JD	100 UD	200 UD	1.6 J
Xylenes (total)	5		120 UD	62 UD	50 UD	50 UD	250 UD	500 UD	12 U

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

	NYSDEC	Sample Designation:	OW-4 DUP	OW-5	OW-5	OW-5	OW-5 DUP	OW-5	OW-5 DUP
Parameter	AWQSGVs	Sample Date:	7/6/2015	4/14/2014	5/14/2014	7/23/2014	7/23/2014	10/30/2014	10/30/2014
(Concentrations in µg/L)	(µg/L)								
1,1-Dichloroethene	5		2.5 U	2 UD	2.5 UD	10 UD	10 UD	20 UD	20 UD
1,2-Dichloroethene (total)	5		710	NA	12 UD	NA	NA	120 D	120 D
1,2-Dichloropropane	1		5.0 U	4 UD	9.9 D	80 D	89 D	40 UD	40 UD
1,4-Dioxane			1200 U	RVD	RVD	RVD	RVD	RVD	RVD
2-Butanone (MEK)	50		20 J	20 UJVD	25 UD	100 UD	100 UJVD	200 UD	200 UD
Acetone	50		25 U	20 UJVD	25 UVD	24 JD	100 UJVD	200 UD	200 UD
Benzene	1		2.5 U	2 UD	2.5 UD	10 UD	10 UD	20 UD	20 UD
Chloroform	7		12 U	10 UD	3.8 JD	50 UD	50 UD	100 UD	100 UD
cis-1,2-Dichloroethene	5		710	10 UD	12 UD	310 D	290 D	120 D	120 D
m+p-Xylene	5		12 U	10 UD	12 UD	50 UD	50 UD	100 UD	100 UD
Tetrachloroethene	5		240	200 D	670 D	1600 D	1600 D	1300 D	1500 D
trans-1,2-Dichloroethene	5		12 U	10 UD	12 UD	50 UD	50 UD	100 UD	100 UD
Trichloroethene	5		36	7.2 D	7.7 D	120 D	110 D	52 D	56 D
Trichlorofluoromethane	5		12 U	10 UD	12 UD	50 UD	50 UD	100 UD	100 UD
Vinyl chloride	2		1.9 J	4 UD	5 UJVD	20 UD	20 UD	40 UD	40 UD
Xylenes (total)	5		12 U	NA	12 UD	50 UD	50 UD	100 UD	100 UD

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

	NYSDEC	Sample Designation:	OW-5	OW-5 DUP	OW-5	OW-5	OW-5	FB_01232014	FB-011314
Parameter	AWQSGVs	Sample Date:	1/29/2015	1/29/2015	3/6/2015	4/30/2015	7/6/2015	1/23/2014	1/13/2014
(Concentrations in $\mu g/L$)	(µg/L)								
1,1-Dichloroethene	5		25 UD	50 UD	25 UD	10 UD	2.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	5		350 D	400 D	370 D	1700 D	470 J	NA	NA
1,2-Dichloropropane	1		50 UD	100 UD	50 UD	20 UD	5.0 U	1 U	NA
1,4-Dioxane			RVD	RVD	12000 UD	5000 UD	1200 U	250 U	250 U
2-Butanone (MEK)	50		250 UD	500 UD	250 UD	120 D	280	5 U	5 U
Acetone	50		250 UJVD	500 UJVD	250 UD	100 UD	190	1.9 J	9.5
Benzene	1		25 UD	50 UD	25 UD	10 UD	2.5 U	0.5 U	0.5 U
Chloroform	7		120 UD	250 UD	120 UD	50 UD	12 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	5		350 D	400 D	370 D	1700 D	470	2.5 U	2.5 U
m+p-Xylene	5		120 UD	250 UD	120 UD	50 UD	12 U	2.5 U	2.5 U
Tetrachloroethene	5		3100 D	4200 D	5200 D	420 D	200	0.5 U	0.5 U
trans-1,2-Dichloroethene	5		120 UD	250 UD	120 UD	50 UD	4.2 J	2.5 U	2.5 U
Trichloroethene	5		110 D	140 D	140 D	24 D	16	0.5 U	0.5 U
Trichlorofluoromethane	5		120 UD	250 UD	120 UD	50 UD	12 U	2.5 U	NA
Vinyl chloride	2		50 UD	100 UD	50 UD	77 D	98	1 U	1 U
Xylenes (total)	5		120 UD	250 UD	120 UD	50 UD	12 U	NA	NA

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

	NYSDEC	Sample Designation:	FB103014	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK
Parameter	AWQSGVs	Sample Date:	10/30/2014	2/11/2014	2/12/2014	3/10/2014	4/14/2014
(Concentrations in µg/L)	(µg/L)						
1,1-Dichloroethene	5		0.5 U	NA	NA	0.5 U	0.5 U
1,2-Dichloroethene (total)	5		2.5 U	NA	NA	NA	NA
1,2-Dichloropropane	1		1 U	NA	NA	1 U	1 U
1,4-Dioxane			RV	NA	NA	RV	RV
2-Butanone (MEK)	50		5 U	5 U	NA	5 U	5 U
Acetone	50		5 UJV	NA	NA	5 UJV	6.2 JV
Benzene	1		0.5 U	NA	NA	0.5 U	0.5 U
Chloroform	7		2.5 U	NA	NA	2.5 U	2.5 U
cis-1,2-Dichloroethene	5		2.5 U	NA	2.5 U	2.5 U	2.5 U
m+p-Xylene	5		2.5 U	NA	NA	2.5 U	2.5 U
Tetrachloroethene	5		0.5 U	NA	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	5		2.5 U	NA	2.5 U	2.5 U	2.5 U
Trichloroethene	5		0.5 U	0.5 U	NA	0.5 U	0.5 U
Trichlorofluoromethane	5		2.5 U	NA	NA	2.5 U	2.5 U
Vinyl chloride	2		1 U	NA	NA	1 U	1 U
Xylenes (total)	5		2.5 U	NA	NA	NA	NA

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

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V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

	NYSDEC	Sample Designation:	FIELD BLANK				
Parameter	AWQSGVs	Sample Date:	5/14/2014	7/23/2014	1/29/2015	3/6/2015	4/30/2015
(Concentrations in µg/L)	(µg/L)						
1,1-Dichloroethene	5		0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
1,2-Dichloroethene (total)	5		2.5 U	NA	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	1		1 U	1 U	1 U	1.0 U	1.0 U
1,4-Dioxane			RV	RV	RV	250 U	250 U
2-Butanone (MEK)	50		5 U	5 UJV	5 U	5.0 U	5.0 U
Acetone	50		1.4 J	1.6 JV	5 UJV	4.1 J	5.0 U
Benzene	1		0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
Chloroform	7		2.5 U				
cis-1,2-Dichloroethene	5		2.5 U				
m+p-Xylene	5		2.5 U				
Tetrachloroethene	5		0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	5		2.5 U				
Trichloroethene	5		0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
Trichlorofluoromethane	5		2.5 U				
Vinyl chloride	2		1 UJV	1 U	1 U	1.0 U	1.0 U
Xylenes (total)	5		2.5 U				

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AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

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V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

	NYSDEC	Sample Designation:	FIELD BLANK	TB	TRIP BLANK	TRIP BLANK	TRIP BLANK
Parameter	AWQSGVs	Sample Date:	7/6/2015	1/9/2014	3/6/2015	4/30/2015	7/6/2015
(Concentrations in µg/L)	$(\mu g/L)$						
1,1-Dichloroethene	5		0.50 U	0.5 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethene (total)	5		2.5 U	NA	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	1		1.0 U	NA	1.0 U	1.0 U	1.0 U
1,4-Dioxane			250 U	RV	250 U	250 U	250 U
2-Butanone (MEK)	50		5.0 U	1.6 J	5.0 U	5.0 U	5.0 U
Acetone	50		5.0 U	4 JV	4.6 J	5.0 U	5.0 U
Benzene	1		0.50 U	0.5 U	0.50 U	0.50 U	0.50 U
Chloroform	7		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	5		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
m+p-Xylene	5		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene	5		0.50 U	0.5 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	5		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Trichloroethene	5		0.50 U	0.5 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	5		2.5 U	NA	2.5 U	2.5 U	2.5 U
Vinyl chloride	2		1.0 U	1 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	5		2.5 U	NA	2.5 U	2.5 U	2.5 U

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

 μ g/L -Micrograms per liter

J - Estimated Value

U - Compound was analyzed for but not detected

DUP - Duplicate

- - No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

NA - Compound was not analyzed by laboratory

V - Value altered or qualifier added during data validation

R - Sample results rejected by validator

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

D - A secondary analysis after dilution due to exceedance

of the calibration range in the original sample

Table 11.	Summary	v of Field Para	meters in B	aseline and	Post-Reme	ediation G	roundwater.	Kent Wy	wthe Owner	s LLC, 1	49 Kent A	venue,	Brookly	n, New	/ York
										,			•/		

Parameter	Units	Sample Designation: Sample Date:	OW-3 1/23/2014	OW-3 2/21/2014	OW-3 3/10/2014	OW-3 4/14/2014	OW-3 7/23/2014	OW-3 10/13/2014
Field Parameters								
pН	SU		7.22	7.13	6.83	6.50	7.1	6.11
ORP	mV		-12	196	10	23	151	142
Conductivity	mS/cm		3.34	3.20	3.54	4.00	1.80	2.38
Temperature	°C		13.62	11.04	11.35	12.71	23.85	17.12
Turbidity	NTU		147	8	21.3	531	0.0	1000.0
Dissolved Oxygen	mg/L		3.94	0.03	5.23	0.61	2.15	2.45

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

	Table 11. Summ	ary of Field Paramet	ters in Baseline and Pos	st-Remediation Gr	oundwater, Kent V	Vythe Owners LLC	, 149 Kent Avenue	, Brooklyn, New	York
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Parameter	Units	Sample Designation: Sample Date:	OW-3 10/30/2014	OW-3 1/29/2015	OW-3 4/30/2015	OW-3 7/6/2015	OW-4 4/14/2014	OW-4 5/14/2014
Field Parameters								
рН	SU		6.11	6.65	6.95	6.23	6.83	6.71
ORP	mV		142	124	163	160	-13	10
Conductivity	mS/cm		2.38	3.00	2.76	2.47	1.28	1.66
Temperature	°C		17.12	8.58	10.17	15.36	16.55	16.42
Turbidity	NTU		1000	78.5	70.0	6.7	51.3	243.0
Dissolved Oxygen	mg/L		2.45	3.05	2.65	1.51	0.72	0.65

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

	Table 11. Summ	ary of Field Paramet	ters in Baseline and Pos	st-Remediation Gr	oundwater, Kent V	Vythe Owners LLC	, 149 Kent Avenue	, Brooklyn, New	York
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Parameter	Units	Sample Designation: Sample Date:	OW-4 6/16/2014	OW-4 6/20/2014	OW-4 7/15/2014	OW-4 7/23/2014	OW-4 10/13/2014	OW-4 10/30/2014
Field Parameters								
pH	SU		6.62	6.78	7.07	7.29	7.09	6.35
ORP	mV		-54	-48	-15	-22	1	25
Conductivity	mS/cm		1.86	1.86	1.83	1.88	1.78	1.38
Temperature	°C		20.22	19.02	17.64	17.87	20.02	20.00
Turbidity	NTU		47.3	3.4	58.4	220.0	0.0	218.0
Dissolved Oxygen	mg/L		1.07	4.66	1.10	0.96	1.26	0.85

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

Table 11.	Summary	v of Field Para	meters in Ba	aseline and I	Post-Reme	diation Gr	oundwater.	Kent Wv	the Owners	LLC, 14	49 Kent A	venue,	Brookly	n, Nev	v York
										- /			•/	,	

Parameter	Units	Sample Designation: Sample Date:	OW-4 1/29/2015	OW-4 3/6/2015	OW-4 4/24/2015	OW-4 4/30/2015	OW-4 7/6/2015	OW-5 4/14/2014
Field Parameters								
pH	SU		6.9	6.88	6.85	7.36	6.50	6.29
ORP	mV		-27	-20	-180	-179	-112	107
Conductivity	mS/cm		1.54	3.39	2.69	2.87	1.97	1.03
Temperature	°C		15.94	14.74	14.15	14.50	15.29	16.62
Turbidity	NTU		24.4	9.7	23.4	37.0	40.1	117.0
Dissolved Oxygen	mg/L		1.40	0.37	0.73	2.54	1.21	1.06

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

Table 11. Sur	nmary of Field Pa	arameters in Baseline	e and Post-Remediatio	n Groundwater, I	Kent Wythe O	wners LLC, 149	Kent Avenue, Br	ooklyn, N	ew York
	•								

Parameter	Units	Sample Designation: Sample Date:	OW-5 5/14/2014	OW-5 6/16/2014	OW-5 6/20/2014	OW-5 7/15/2014	OW-5 7/23/2014	OW-5 10/13/2014
Field Parameters								
pН	SU		6.38	6.12	6.16	6.72	6.62	6.78
ORP	mV		52	119	106	187	164	143
Conductivity	mS/cm		0.805	1.07	0.917	0.951	0.993	1.13
Temperature	°C		16.28	18.53	18.20	16.48	16.98	18.88
Turbidity	NTU		177.0	8.6	5.0	78.1	500.0	107.0
Dissolved Oxygen	mg/L		0.68	0.61	4.01	0.82	0.81	0.78

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

Table 11. Sur	nmary of Field Pa	arameters in Baseline	e and Post-Remediatio	n Groundwater, I	Kent Wythe O	wners LLC, 149	Kent Avenue, Br	ooklyn, N	ew York
	•								

Parameter	Units	Sample Designation: Sample Date:	OW-5 10/30/2014	OW-5 1/29/2015	OW-5 3/6/2015	OW-5 4/24/2015	OW-5 4/30/2015	OW-5 7/6/2015
Field Parameters								
pH	SU		5.84	6.42	6.35	6.38	6.8	6.61
ORP	mV		199	156	175	-40	-13	-115
Conductivity	mS/cm		1.2	1.8	1.5	1.69	1.86	1.99
Temperature	°C		16.97	13.11	12.62	11.20	11.66	16.54
Turbidity	NTU		365.0	67.3	90.0	292.0	168.0	8.7
Dissolved Oxygen	mg/L		0.93	1.4	0.5	0.94	0.54	1.30

ORP - Oxygen Reduction Potential

mV - Millivolts

mS/cm - Millisiemens per centimeter

^oC - degrees Celsius

NTU - Nephelometric turbidity units

FIGURES

- 1. Site Location Map
- 2. Site Plan
- 3. Groundwater Elevation Contours
- 4. Groundwater Quality Data Compared to "Contained-In" Action Levels for Chlorinated Volatile Organic Compounds
- 5. Hospital Route Map (Embedded in Text in Section 2.5.2)





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APPENDICES

- A. Environmental Easement including Metes and Bounds
- B. Sub-Slab Depressurization System As-built Drawings
- C. Excavation Work Plan
- D. Community Air Monitoring Plan
- E. Health and Safety Plan
- F. Quality Assurance Project Plan
- G. Site Inspection Checklist
- H. Sub-Slab Depressurization System Operations and Maintenance Log
- I. Monitoring Well Construction Logs
- J. Groundwater Sampling Log
- K. Sub-Slab Depressurization System Component Specifications

APPENDIX A

Environmental Easement including Metes and Bounds Description

NYC DEPARTMENT OF OFFICE OF THE CITY R This page is part of the instrumen Register will rely on the informat by you on this page for purposes this instrument. The information of will control for indexing purpose of any conflict with the rest of th	FINANCE EGISTER at. The City tion provided of indexing on this page as in the event e document.			5001001EB49			
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		PROPER	ГҮ ДАТА				
Borough Block	Lot	Unit A	ddress				
BROOKLYN 2333	1 Entire	Lot 14	49 KENT AVENUE				
CROSS REFERENCE DATA CRFNOr DocumentIDOr or YearReelPageor PARTIES GRANTOR/SELLER: KENT & WYTHE OWNERS LLC 1865 PALMER AVENUE , SUITE 203 COMMISSIONER LARCHMONT , NY 10538 DEPT OF ENVIRONMENTAL CONSERVATION , 625							
			ALBANY, NY 12253)			
		FEES A	ND TAXES				
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County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this $5 \frac{44}{5}$ day of MAY, 2015, between Owner(s) Kent & Wythe Owners LLC, having an office at 1865 Palmer Ave., Ste. 203, Larchmont, NY 10538, County of Westchester, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 149 Kent Avenue, a/k/a/ 45-65 North 5th Street, a/k/a/ 202 Wythe Avenue in the City of New York, Borough of Brooklyn, County of Kings and State of New York, known and designated on the tax map of the County Clerk of Kings as tax map parcel numbers: Section 8 Block 2333 Lot 1, being the same as that property conveyed to Grantor by deed dated July 31, 2012 and recorded in the City Register of the City of New York in Instrument No. 2012080100286001. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.920 +/- acres, and is hereinafter more fully described in the Land Title Survey dated February 3rd, 2015 prepared by Saeid Jalilvand L.S., C.S., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C224159-06-12, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. <u>Purposes</u>. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. <u>Institutional and Engineering Controls</u>. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

Environmental Easement Page 2

County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in $6NYCRR\ 375-1.8(g)(2)(i)$, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section Division of Environmental Remediation NYSDEC 625 Broadway Albany, New York 12233 Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

pursuant to Title 36 of Article 71 of the Environmental Conservation

Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. <u>Right to Enter and Inspect</u>. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. <u>Reserved Grantor's Rights</u>. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. <u>Enforcement</u>

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. <u>Notice</u>. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C224159 Office of General Counsel NYSDEC 625 Broadway Albany New York 12233-5500

With a copy to:

u. See

> Site Control Section Division of Environmental Remediation NYSDEC 625 Broadway Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

Environmental Easement Page 5

County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

communicating notices and responses to requests for approval.

Recordation. Grantor shall record this instrument, within thirty (30) days of execution of 7. this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

Amendment. Any amendment to this Environmental Easement may only be executed by 8. the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

Extinguishment. This Environmental Easement may be extinguished only by a release by 9. the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

Joint Obligation. If there are two or more parties identified as Grantor herein, the 10. obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Kent & Wythe Owners LLC 1 & wythe Owner's LLC: by: Kent 200 Wythe MANAGERS LLC By: L+K Kent + Wythe Owner's LLC By:

Print Name: Dubra Kenyon Title: <u>Laffornico</u> Signato Date: 2-113/15

County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

Grantor's Acknowledgment

STATE OF NEW YORK) COUNTY OF westchister) ss:

On the 13^{th} day of 13^{th} day of 13^{th} day of 13^{th} , in the year 20 15, before me, the undersigned, personally appeared <u>Debra 10000</u>, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York



THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By:

Robert W. Schick, Director Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)) ss: COUNTY OF ALBANY)

On the 5^{11} day of 11^{11} , in the year 2015, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

State of New York Notary Public

David J. Chiusano Notary Public, State of New York No. 01CH5032146 Qualified in Schenectady County Commission Expires August 22, 2010 County: Kings Site No: C224159 Brownfield Cleanup Agreement Index : C224159-06-12

SCHEDULE "A" PROPERTY DESCRIPTION

ALL THAT CERTAIN plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING at the corner formed by the intersection of the easterly side of Kent Avenue with the northerly side of North Fifth Street;

RUNNING THENCE easterly 400 feet along the northerly side of North Fifth Street, to the corner formed by the intersection of the northerly side of North Fifth Street and the westerly side of Wythe Avenue;

THENCE northerly along the westerly side of Wythe Avenue, 100 feet;

THENCE westerly 400 feet along a line parallel to the northerly side of North Fifth Street to the easterly side of Kent Avenue;

THENCE southerly along the easterly side of Kent Avenue, 100 feet to the corner formed by the intersection of the easterly side of Kent Avenue with the northerly side of North Fifth Street, the point or place of BEGINNING.

For Information Only: Said premises are known as 149 Kent Avenue a/k/a/45-65 North 5th Street a/k/a/202 Wythe Avenue, Brooklyn, New York and designated as Section 8 Block 2333 Lot 1 as shown on the Tax Map of the City of New York, County of Kings.



NOT TO SCALE

LEGAL DESCRIPTION

ALL THAT CERTAIN plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

TITLE NO. 904683

BEGINNING at the corner formed by the intersection of the easterly side of Kent Avenue with the northerly side of North Fifth Street;

RUNNING THENCE easterly 400 feet along the northerly side of North Fifth Street, to the corner formed by the intersection of the northerly side cf North Fifth Street and the westerly side of Wythe Avenue;

THENCE northerly along the westerly side of Wythe Avenue, 100 feet;

THENCE westerly 400 feet along a line parallel to the northerly side of North Fifth Street to the easterly side of Kent Avenue;

THENCE southerly along the easterly side of Kent Avenue, 100 feet to the corner formed by the intersection of the easterly side of Kent Avenue with the northerly side of North Fifth Street, the point or place of BEGINNING.

For Information Only: Said premises are known as 149 Kent Avenue a/k/a/ 45-65 North 5th Street a/k/a/ 202 Wythe Avenue, Brooklyn, New York and designated as Section 8 Block 2333 Lot 1 as shown on the Tax Map of the City of New York, County of Kings.

NOTES:

- 1. BELOW GRADE ENCROACHMENTS AND VAULTS IF ANY NOT LOCATED.
- 2. THERE ARE NO PARKING SPACES ON THE PREMISES.
- 3. THE PREMISES IS SERVED BY GAS, WATER, ELECTRICITY, TELEPHONE AND SANITARY SEWER LINES INSTALLED IN STREET.
- 4. PROFESSIONAL LIABILITY INSURANCE POLICY OBTAINED BY THE SURVEYOR IN THE MINIMUM AMOUNT OF \$ 2,000,000.00 TO BE IN EFFECT THROUGHOUT THE
- CONTRACT TERM. CERTIFICATE OF INSURANCE TO BE FURNISHED UPON REQUEST. 5. THE PERMISES HAS ACCESS TO KENT AVENUE, NORTH 5th STREET & WYTHE AVENUE.
- 6. THERE IS EVIDENCE OF CONSTRUCTION OR EARTH MOVING. 7. THERE IS NO EVIDENCE OF USE OF PREMISES AS SOLID WASTE DUMP.
- 8. NO EVIDENCE OF WETLANDS OBSERVED.
- 9. THE PROPERTY DESCRIBED HEREIN IS THE SAME PROPERTY DESCRIBED IN STEWART TITLE INSURANCE COMPANY COMMITMENT NO. 904683, OF SEPTEMBER 30, 2013.

10. THE STREET ADDRESS OF THE SUBJECT PROPERTY IS 149 KENT AVENUE, BROOKLYN, NY.

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

THE ENGINEERING AND INSTITUTIONAL CONTROLS for the Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

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STANDARD: LOCAL MAP STANDARD EXCEPT WHERE NOTED U.S. WHICH DENOTES UNITED STATES STANDARD OF MEASUREMENT.

ESTABLISHED 1876 * SUCCESSOR TO:

B.G. MEINIKHEIM C.S.*C.U. POWELL C.E., C.S.*L.C.L. SMITH C.S.*NATHAN CAMPBELL C.E., C.S.*A.U. WHITSON C.E., C.S.* WILLIAM L. SAVACOOL C.E., L.S., C.S. * A.U. WHITSON INC. C.E., C.S. * G. WEBER L.S., C.S. * C. STIDOLPH R.A., L.S. * WHITSON &

POWELL INC. P.E., L.S., C.S. * KELLER & POWELL P.E., L.S., C.S. * LOUIS MONTROSE C.E., L.S., C.S. * FRED J. POWELL P.E., L.S., C.S. *



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								SURVEY IS PREPARED AND ON HIS TO THE TITLE COMPANY. GOVERNMI AGENCY AND LENDING INSTITUTION I
								HEREON, AND TO THE ASSIGNEES O LENDING INSTITUTION, CERTIFICATION ARE NOT TRANSFERABLE TO ADDITION
								INSTITUTIONS OR SUBSEQUENT OWNE

APPENDIX B

Sub-Slab Depressurization System As-built Drawings







GACE CONSULTING ENGINEERS, P.C.)



APPENDIX C

Excavation Work Plan

August 13, 2015

EXCAVATION WORK PLAN

149 Kent Avenue Site Number C224159

Prepared for:

KENT & WYTHE OWNERS LLC 149 Kent Avenue Williamsburg Kings County, New York

ROUX ASSOCIATES, INC.

Environmental Consulting & Management



and REMEDIAL ENGINEERING, P.C.

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FIGURES

- C-1. Inbound Truck Route Map C-2. Outbound Truck Route Map
1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates) and Remedial Engineering, P.C. (Remedial Engineering) have developed this Excavation Work Plan (EWP) for the property owned by Kent & Wythe Owners LLC located at 149 Kent Avenue in Brooklyn, New York (site). The location of the site is shown on Figures 1 and 2 of the Site Management Plan (SMP). Kent & Wythe Owners LLC has entered the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to complete subsequent remediation activities under a Brownfield Site Cleanup Agreement with the NYSDEC dated August 21, 2012 (BCP Site No. C224159).

1.1 Purpose

The site has been remediated for restricted residential use (and less restricted uses defined in 6 NYCRR Part 375). The site has been redeveloped with a building that encompasses the entire site footprint. As such, large-scale excavation in the future at this site is highly unlikely.

In the unlikely event that intrusive work is completed onsite during the site management phase and such work penetrates the site cover system and exposes underlying "remaining contamination," the work will be performed in compliance with this EWP. Simple excavations may only require compliance with a portion of the EWP. For example, excavation of a small volume of soil from above the water table that is directly loaded for offsite disposal would not require the stockpiling or fluids management provisions of this section.

Any work conducted pursuant to this EWP must also be conducted, at a minimum, in accordance with the following plans:

- Procedures defined in the site-specific Community Air Monitoring Plan (CAMP) provided in Appendix D of the SMP;
- Procedures defined in a project-specific Health and Safety Plan (HASP) provided in Appendix E of the SMP; and
- Procedures defined in the Quality Assurance Project Plan (QAPP) provided in Appendix F of the SMP.

The above documents must be prepared and submitted as part of the notification described in Section 2.0 of this EWP.

The owner of the site will ensure that site construction activities will not interfere with, or otherwise impair or compromise, the engineering controls described in the SMP for the site, or will be responsible for the repair of the affected engineering control.

2.0 IMPLEMENTATION OF EXCAVATION WORK PLAN

This section describes, in detail, how this EWP will be implemented.

2.1 Notification

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Ms. Jane O'Connell (jane.oconnell@dec.ny.gov) Region 2 Hazardous Waste Remediation Engineer 1 Hunter's Point Plaza, 47-40 21st Street Long Island City, New York 11101-5407

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control.
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling.
- A schedule for the work, detailing the start and completion of all intrusive work.
- A summary of the applicable components of this EWP.
- A statement that the work will be performed in compliance with this EWP and applicable requirements in 29 CFR 1910.120.
- A copy of the contractor's site-specific HASP (and QAPP, if required to be modified from the QAPP in Appendix F of the SMP), in electronic format.
- Amendments/revisions to the site-specific CAMP in electronic format.
- Identification of disposal facilities for potential waste streams.
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

2.2 Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires offsite disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

2.3 Stockpile Methods

The need for stockpiling significant amounts of soil outdoors at this site in the future is highly unlikely; therefore, many of the stockpile requirements do not apply. If small amounts of soil are generated from a localized excavation within the basement of the building, it will be staged on and covered with plastic until it can be removed from the site.

In the unlikely event that a significant outdoor stockpile is generated, soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points in the vicinity of the stockpile staging areas and the work in general.

Stockpiles will be kept covered at all times with appropriately anchored tarps when not being actively managed. Outdoor stockpiles will be routinely inspected and maintained daily and after every storm event. Damaged tarp covers will be promptly replaced. An adequate supply of polyethylene sheeting will be available to cover stockpiles when not being actively managed.

Outdoor stockpiles will be designed to drain water toward a collection area. The collected water will be disposed in an appropriate manner.

Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

2.4 Materials Excavation and Load Out

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this EWP.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements) and be accompanied with a bill of lading or similar document.

For future work at this site, it is highly unlikely that trucks will be driving on or otherwise contacting remaining contamination since the building covers the entire site. In the unlikely event that this occurs, the qualified environmental professional will be responsible for ensuring that all outbound trucks that have come in contact with remaining contamination will be decontaminated before leaving the site until the activities performed under this section are complete. It is likely that dry brushing of trucks will suffice as a means of decontamination at this site. However, if any is generated, equipment decontamination water will be collected and disposed in an appropriate manner.

If applicable, locations where vehicles enter or exit the site shall be inspected daily for evidence of offsite soil tracking.

In the unlikely event that large scale excavation occurs at the site in the future, the qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

2.5 Materials Transport Offsite

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be decontaminated prior to leaving the site, as described above. If any are generated, decontamination waters will be collected and disposed of offsite in an appropriate manner.

The inbound truck transport route starting at the Lincoln Tunnel is as follows (Figure C-1):

- Depart RT-495 E/ Lincoln Tunnel toward W 36th Street
- Keep straight onto Dyer Avenue
- Turn right onto W. 34th Street
- Turn left onto RT-9A S/ 12th Avenue/ West Side Highway
- Turn left onto Canal Street
- Turn left onto Centre Street
- Road name changes to Cleveland Place
- Turn right onto Kenmare Street
- Bear right onto Delancey Street
- Keep right onto Williamsburg Bridge
- Take ramp right for Broadway West toward Staten Island
- Turn right onto Broadway

- Keep left to stay on Broadway
- Turn right onto Kent Avenue
- Arrive at 149 Kent Avenue, Brooklyn, New York 11249

The outbound truck transport route to the Lincoln Tunnel is as follows (Figure C-2):

- Head southeast on North 5th Street toward Wythe Avenue
- Take the first right onto Wythe Avenue
- Turn left at the third cross street onto Metropolitan Avenue
- Turn right onto Roebling Street
- Take the ramp onto Williamsburg Bridge
- Slight left to stay on Williamsburg Bridge
- Continue onto Delancey Street
- Turn left onto Bowery
- Turn right onto Canal Street
- Turn right onto West Street
- Continue onto 11th Avenue
- Turn right onto West 40th Street
- Merge onto NY-495 W/ Lincoln Tunnel via the map to New Jersey

All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting offsite queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

In the unlikely event that large-scale excavation occurs at the site in the future, egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed onsite in order to minimize offsite disturbance. Offsite queuing will be prohibited.

2.6 Materials Disposal Offsite

Soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated offsite disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated offsite management of materials from this site will not occur without formal NYSDEC approval.

Offsite disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Nonhazardous historic fill and contaminated soils taken offsite will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

2.7 Materials Reuse Onsite

Only materials meeting the lower of the restricted residential use criteria for human health or the criteria for protection of groundwater presented in Table 6.8(b) of the latest revision of Title 6 of New York Code of Rules and Regulations Part 375 (Part 375) can be reused onsite. Chemical criteria for onsite reuse of material have been approved by NYSDEC and are listed in Table 9 of

the SMP. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated onsite material, including historic fill and contaminated soil, that is acceptable for re-use onsite will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Concrete crushing or processing onsite will not be performed without prior NYSDEC approval.

2.8 Fluids Management

The need for significant dewatering or other types of water generation on the site during future work is highly unlikely since the building covers the entire site footprint. In the unlikely event that water is generated during excavation activities, all liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. If generated, dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be treated in accordance with the New York City Department of Environmental Protection (NYCDEP) sewer discharge limits by an onsite water treatment system with discharge to the New York City sewer system. Alternatively, if onsite treatment is not warranted due to limited volume (i.e., volumes that could be reasonably drummed or trucked offsite), groundwater generated from within the "limits of groundwater to be handled as listed hazardous waste if not treated onsite" shown on Figure 4 of the SMP will be disposed of as U210 listed hazardous waste. Groundwater generated from all other location onsite would be handled in accordance with the results of waste characterization samples.

2.9 Site Cover System Restoration

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP. The demarcation layer, consisting of the underside of the sub-base beneath the concrete slab, footings or foundation and the underside of the cement-bentonite slurry in Hot Spots 1 and 2 will be replaced to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan.

If the type of site cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination Zone.' A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

2.10 Backfill From Off-Site Sources

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the lower of the restricted residential use criteria for human health or the criteria for protection of groundwater presented in Table 6.8(b) of the latest revision of Part 375. Fill certification will include information regarding past use, confirmation that the source area background has been checked, and confirmation of its New York State Department of Transportation (NYSDOT) certification, if applicable. Sampling of offsite fill material will be performed in accordance with the requirements of the QAPP to be provided by the performing party prior to any work. The qualified environmental professional, with the concurrence of the NYSDEC, will review results of pre- and post-qualification testing of offsite fill materials and will be the sole judge as to acceptability of the material.

In accordance with DER-10, the following material may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final site cover, provided that it contains less than 10% by weight material which would pass through a size 80 sieve and consists of:

- gravel, rock or stone, consisting of virgin material from a permitted mine or quarry; or
- recycled concrete or brick from a DEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002).

Lean concrete (flowable fill) or bentonite slurry mix may be used as backfill in some locations onsite, to be determined by the Contractor's means and methods. Sampling of this material will not be required.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

2.11 Stormwater Pollution Prevention

The site has been redeveloped with a building that encompasses the entire site footprint. As such, large-scale excavation in the future at this site is highly unlikely, and thus the need for erosion control practices will be very limited. In the unlikely event that intrusive work is completed onsite during the site management phase and such work has the potential for generating sediment laden storm water, the following procedures will apply. In general, for smaller excavations (i.e., less than 1 acre), procedures for stormwater pollution prevention should, at a minimum, include the following:

- Erosion and sediment control measures discussed herein and will be employed, where applicable, during all construction activities performed during the site management phase.
- Silt fencing or hay bales will be installed around the construction area, as necessary based on the proposed work.
- All erosion and sedimentation controls installed will be inspected once a week and after every storm event. Results of inspections will be recorded in a logbook or form and maintained at the Site and available for inspection by NYSDEC. All necessary repairs will be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- All undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials.

- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures discussed herein will be observed to ensure that they are operating correctly, where applicable. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Since the entire site is less than one acre in size and, a site specific Stormwater Pollution Prevention Plan is not required.

2.12 Contingency Plan

Due to the fact that the entire site was excavated to at least 10 feet below the former floor slab elevation, it is highly unlikely that any unknown sources of contamination will be identified during the site management phase. In the unlikely event that underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

2.13 Community Air Monitoring Plan

A site-specific Community Air Monitoring Plan is provided in Appendix E of the SMP.

2.14 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors offsite and onsite. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's qualified environmental professional, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and offsite nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to onsite conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

2.15 Dust Control Plan

Due to the fact that the building covers the entire site, it is highly unlikely large-scale excavation in outdoor areas with the potential to generate dust will occur. In the unlikely event that there is the potential to generate dust during outdoor intrusive activities, a dust suppression plan that addresses dust management during invasive outdoor onsite work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated onsite water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Gravel will be used on roadways to provide a clean and dust-free road surface.

• Onsite roads will be limited in total area to minimize the area required for water truck sprinkling.

2.16 Other Nuisances

A plan will be developed and utilized by the contractor for all work to ensure compliance with local noise control ordinances.

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APPENDIX D

Community Air Monitoring Plan

December 7, 2013

COMMUNITY AIR MONITORING PLAN

149 Kent Avenue Site Number C224159

Prepared for

KENT & WYTHE OWNERS LLC 149 Kent Avenue Williamsburg Kings County, New York

ROUX ASSOCIATES, INC.

Environmental Consulting & Management



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1.2 Particulate Monitoring, Response Levels and Actions	3
1.3 Meteorological Monitoring	4
1.4 Available Suppression Techniques	4
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TABLE

1. Action Limit Summary for VOCs and Particulates

APPENDICES

- A. Action Limit Report
- B. Daily CAMP Monitoring Location Plan

1.0 INTRODUCTION

Remedial Engineering, P.C and Roux Associates, Inc. (collectively referred to herein as Roux Associates), on behalf of KENT& WYTHE OWNERS LLC, (the "Volunteer"), have developed a project specific Community Air Monitoring Plan (CAMP) to implement real time monitoring at 149 Kent Avenue (Site) during soil excavation/foundation construction activities. Based on the results of previous investigations conducted, volatile organic compounds (VOCs) and particulates have been identified as contaminants of potential concern. The monitoring program will screen and analyze ambient air for total VOCs and particulate concentrations at the downwind perimeter of the Site. The monitoring program will be implemented at all times during which earth disturbance activities are occurring and/or the potential for exposure to environmental contaminants in onsite and/or immediately adjacent offsite soil, groundwater and soil vapor exists. The CAMP is designed to provide a measure of protection for the downwind community and onsite workers not directly involved with the subject work activities from potential airborne contaminant releases as a direct result of remedial and construction activities. This plan is consistent with the New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan guidance document.

A portion of the intrusive activities will be conducted in a relatively deep excavation with work below the water table in moist soil. This high moisture content will provide for "natural" dust suppression in these areas. The implementation of direct loading and offsite transport of excavated soils will also minimize particulate issues.

The specifics of the CAMP are presented in the following four (4) sections:

- 1.1 VOC Monitoring Approach
- 1.2 Particulate Monitoring Approach
- 1.3 Meteorological Monitoring Approach
- 1.4 Available Suppression Techniques

1.1 VOC Monitoring Approach

Due to the relatively small size of the Site, it is not practical to monitor individual work areas within the Site. Thus, total VOC concentrations in air will be monitored continuously at the

upwind and downwind perimeters of the Site during all ground intrusive activities and/or when the potential for exposure to environmental contaminants in onsite and/or immediately adjacent offsite soil, groundwater and soil vapor exists. The VOC monitoring equipment will be located at temporary monitoring stations that will be established daily based on Site logistics and weather conditions. The monitoring work will be conducted using MiniRAE 3000 (or equivalent) portable VOC monitors, or similar type monitors, for all VOC monitoring. The equipment will be calibrated at least once daily using isobutylene as the calibration gas. One (1) upwind and one (1) downwind monitor will be deployed each day. Each monitoring unit is equipped with an audible alarm to indicate exceedance of the action levels (as defined below and summarized in Table 1).

The equipment is capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total VOCs at the downwind perimeter of the Site 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.
- If the ambient air concentration of total VOCs at the downwind perimeter of the Site persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of VOCs identified, suppression techniques employed to abate emissions, and monitoring continued. After these steps, work activities can resume if the total organic vapor level at the Site perimeter is below 5 ppm over the background concentration for the 15-minute average. If levels are in excess of 25 ppm above background, identified contributing ground-intrusive activities will be halted and vapor suppression techniques will be evaluated and modified until monitoring indicates VOC levels at the Site perimeter are below 5 ppm over background. Once VOC levels are below 5 ppm at the Site perimeter, work will resume with continued monitoring.

All 15-minute readings will be recorded and be available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an Action Limit Report (ALR) will be completed, identifying the monitoring device location, the measured VOC level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Additionally, the NYSDEC and NYSDOH will be notified within 24 hours of the VOC ALR generation. Daily monitoring equipment locations and meteorological conditions will

also be documented on the daily CAMP Monitoring Location Plan, as shown in Appendix B. All documentation will be kept on file at the Site.

1.2 Particulate Monitoring, Response Levels and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the Site at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action levels (as defined below and summarized in Table 1). Monitoring equipment will be MIE Data Ram monitors or equivalent. A minimum of one (1) upwind and one (1) downwind monitor will be deployed each day, equipped with an omni-directional sampling inlet and a PM-10 sample head. The data logging averaging period will be set to 15-minutes with time and date stamp recording. Alarm averaging will be set at 90 micrograms per cubic meter (μ g/m³) per 15-minute period. This setting will allow proactive evaluation of Site conditions prior to reaching Action Levels of 100 μ g/m³ above background. The equipment will be outfitted with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. The monitoring will be used to compare values to the following:

- If the downwind PM-10 particulate level is $100 \,\mu g/m^3$ greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the Site, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \,\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the Site.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \,\mu g/m^3$ above the upwind level, work must be stopped, a re-evaluation of activities initiated, and dust suppression techniques modified. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \,\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All 15-minute readings will be recorded and be available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an ALR will be completed, identifying the monitoring device location, the measured particulate concentration, the activity causing the

exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Daily monitoring equipment locations and meteorological conditions will also be documented on the daily CAMP Monitoring Location Plan, as shown in Appendix B. All documentation will be kept on file at the Site.

1.3 Meteorological Monitoring

Meteorological data consisting of wind speed, wind direction, temperature, barometric pressure, and relative humidity will be collected. At a minimum, a full set of meteorological parameters will be measured and recorded at the start of each workday, noon of each workday, and the end of each workday. Wind direction readings will be utilized to position the VOC and particulate monitoring equipment in appropriate upwind and downwind locations. A Davis Corporation wireless instrument station or equivalent will be used to measure and log the meteorological monitoring data.

1.4 Available Suppression Techniques

During all intrusive activities, vapor suppression foam will be applied, as needed, to areas where there is active excavation and/or the potential for exposure to environmental contaminants in onsite and/or immediately adjacent offsite soil, groundwater and soil vapor exists. Water misting via controlled fire hose and/or water truck will be utilized, as necessary, to mitigate the potential for particulate/dust release in non-contaminated Site work areas and roadways. Excavation methods and material staging and loading methods will be continually evaluated and modified (as necessary) to alleviate the potential for odor, VOCs, and particulate releases.

1.5 Reporting

All recorded monitoring data will be downloaded and field logged periodically, including action limit reports (if any) and daily CAMP monitoring location plans. All records will be maintained onsite for NYSDEC/NYSDOH review. A summary of CAMP findings, including excursions, will be provided in the Daily and Monthly Reports. All CAMP monitoring records will be included in the overall Final Engineering Report that will be submitted to the NYSDEC and NYSDOH and will include all of the CAMP data collected, daily monitoring station location maps, and copies of the ALRs (if any). If an ALR is generated due to VOC exceedances, the NYSDEC and NYSDOH will be notified within 24 hours of the exceedance.

ROUX ASSOCIATES, INC.

Table 1. Action Limit Summary for VOCs and Particulates, 149 Kent Avenue, Brooklyn, New York

Contaminant	Downwind Action Levels*	Action/Response
	< 5 ppm	1. Resume work with continuing monitoring.
Volatile Organic Compounds (VOCs) (Monitoring Via Photoionization	5 ppm < level < 25 ppm	 Work activities must be temporarily halted, source vapors must be identified, suppression techniques employed to abate emissions and monitoring continued. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to
		the nearest potential receptor or structure, whichever is less) is below 5 ppm over background, resume work.
Detector and Odor Observation)		1. Identified contributing ground intrusive activities must be halted and vapor suppression techniques must be evaluated and modified until monitoring indicates VOC levels below the action level.
> 25 ppm		2. After these steps, if VOC levels (half the distance to the nearest potential receptor or structure) are below 5 ppm over background, resume work.
< 100 ug/m ³		1. If dust is observed leaving the work area, then dust control techniques must be implemented or additional controls used.
		1. Employ dust suppression techniques.
Particulates (Monitoring Via Particulate Meter and Observation)	100 ug/m3 < level < 150 ug/m ³	2. Work may continue with dust suppression techniques provided that downwind PM-10 particulate concentration do not exceed 150 ug/m ³ above the upwind level and provided that no visible dust is migrating from the work area.
	> 150 ug/m ³	1. STOP work
		2. Re-evaluate activities, modify dust suppression techniques. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m ³ of the upwind level and in preventing visible dust migration.

* 15-minute running time-weighted average (twa) above background. Particulate readings are based on the respirable (PM-10) fraction. Background readings are taken at upwind locations relative to Work Areas or Exclusion Zones.

Community Air Monitoring Plan

APPENDIX A

Action Limit Report

ACTION LIMIT REPORT

Project Location: 149 Kent Avenue, Brooklyn, New York				
Date:	Time:			
Name:				
Contaminant: PM-10:	VOC:			
Wind Speed:	Wind Direction:			
Temperature:	Barometric Pressure:			
DOWNWIND DATA				
Monitor ID #:	Location:	Level Reported:		
Monitor ID#:	Location:	Level Reported:		
UPWIND DATA				
Monitor ID #:	Location:	Level Reported:		
Monitor ID#:	Location:	Level Reported:		
BACKGROUND CORRECTED LEVE	LS			
Monitor ID #:	Location:	Level Reported:		
Monitor ID#:	Location:	Level Reported:		
ACTIVITY DESCRIPTION				
CORRECTIVE ACTION TAKEN				

Community Air Monitoring Plan

APPENDIX B

Daily CAMP Monitoring Location Plan



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APPENDIX E

Health and Safety Plan

January 31, 2013

HEALTH AND SAFETY PLAN

149 Kent Avenue Site Number C224159

Prepared for

KENT & WYTHE OWNERS LLC 149 Kent Avenue Williamsburg Kings County, New York

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

ROUX

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- E-1. Activity Hazard Analysis
- E-2. Heat and Cold Stress Guidelines
- E-3. Medical Data Form
- E-4. Community Air Monitoring Plan
- E-5. Health and Safety Briefing/Tailgate Meeting Form
- E-6. Accident Report and Investigation Form
- E-7. Acord Form
- E-8. OSHA 300
- E-9. Job Safety and Health Protection Poster

APPROVALS

By their signature, the undersigned certify that this Health and Safety Plan (HASP) is approved and will be utilized at the project site located at 149 Kent Avenue, Brooklyn, New York.

Joseph Gentile Corporate Health and Safety Manager Roux Associates, Inc.

Date

Date

David Bligh, P.E. Site Health and Safety Officer Roux Associates, Inc.

Date

Joseph Duminuco Project Principal Roux Associates, Inc.

1.0 INTRODUCTION

This Site-specific and Safety Plan (HASP) has been prepared in accordance with 29 CFR 1910.120 Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) and Roux Associates, Inc. (Roux Associates) Standard Operating Procedures (SOPs). It addresses all activities to be performed during the implementation of Remedial Investigation (RI) activities at 149 Kent Avenue, Brooklyn, New York (Site) (Figure E-1). The HASP will be implemented by the designated Site Health and Safety Officer (SSO) during RI work at the Site. The HASP attempts to identify all potential hazards at the Site; however, Site conditions are dynamic and new hazards may appear constantly. Personnel must remain alert to existing and potential hazards as Site conditions change and protect themselves accordingly.

Compliance with this HASP is required of all persons and subcontractors who perform RI fieldwork or enter the Site. The contents of this HASP may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the technical scope of work. Any changes proposed must be reviewed and approved by the Corporate Health and Safety Manager (CHSM), with the SSO implementing the changes to the HASP.

Upon entering the Site, all visitors are required to sign in. All visitors entering the Contamination Reduction Zone (CRZ) (defined in Section 8.1.2), the Contamination Reduction Corridor (CRC) (defined in Section 8.1.2), or the Exclusion Zone (EZ) (defined in Section 8.1.3) will be required to read and comply with the provisions of this HASP. Visitors will be required to comply with applicable OSHA requirements such as training, medical monitoring, and respiratory protection.

In the event that a visitor does not adhere to the provisions of this HASP, he or she will be required to leave the Site. Mobilization activities not requiring intrusive activities (e.g., survey, equipment staging, etc.) or exposure to potentially impacted areas may only be performed if supervised by a competent Roux Associates employee.

1.1 Scope of Work

The Scope of Work activities will include the implementation of RI activities.

The Scope of Work activities are as follows:

- 1. Obtain necessary permits and approvals.
- 2. Preparation and implementation of an approved Health and Safety Plan (HASP).
- 3. Implementation of RI activities, consisting of site inspection/reconnaissance, drilling, soil boring and sampling, groundwater sampling, and soil vapor sampling.
- 4. Implementation of the approved Field Sampling Plan (FSP).
- 5. Mobilization and demobilization.
- 6. Maintain good site housekeeping procedures at all times.
- 7. Identification, protection, and/or relocation of any utilities within the work area.
- 8. Construct a decontamination pad with proper containment and collection system, if necessary.

1.2 Emergency Numbers

1.2.1 Emergency Phone Numbers

Emergency Medical Service	911
Police: New York City Police Department (NYPD)	911
Fire:	911
Hospital: Woodhull Medical Center	718-963-8101
National Response Center	800-424-8802
Poison Control Center	800-222-1222
Chemtrec	800-262-8200
<u>Fire</u> :	911
Center for Disease Control	800-311-3435
USEPA (Region II)	212-637-5000
NYSDEC Emergency Spill Response	800-457-7362
1.2.2 Project Management/Health and Safety Personnel

Title	Contact	Telephone
Roux Associates		
Project Director	Joseph Duminuco	631-232-2600
Site Health and Safety Officer	David Bligh	631-232-2600
Corporate Health and Safety Manager	Joseph Gentile	856-423-8800

1.2.3 Directions to Woodhull Medical Center

760 Broadway Brooklyn, New York 11206

See Figure E-2 for street map

- Start at 149 Kent Avenue, Brooklyn, New York
- Head northeast on Kent Avenue toward North 6th Street
- Turn Right onto North 7th Street
- Turn Right onto Wythe Avenue
- Turn Left onto Metropolitan Avenue
- Turn Right onto Union Avenue
- Turn Left onto Broadway
- Arrive at Woodhull Medical Center on your right

2.0 HEALTH AND SAFETY STAFF

This section briefly describes all site personnel and their health and safety responsibilities for the RI work to be implemented at the Site. All personnel are responsible for ensuring compliance with the HASP.

2.1 Project Principal (PP) – Joseph Duminuco – Roux Associates

- Has the overall responsibility for the health and safety of Site personnel.
- Ensures that adequate resources are provided to the field health and safety staff to carry out their responsibilities as outlined below.

2.2 Corporate Health and Safety Manager (CHSM) – Joe Gentile – Roux Associates

- Implements the HASP.
- Performs or oversees site-specific training and approves revised or new safety protocols or field operations.
- Coordinates revisions of this HASP with Project Principal.
- Responsible for the development of new task safety protocols and procedures and resolution of any outstanding safety issues which may arise during the conduction of site work.
- Review and approve all health and safety training and medical surveillance records for personnel and subcontractors.

2.3 Site Safety and Health Officer (SSO) – David Bligh – Roux Associates

- Directs and coordinates health and safety monitoring activities.
- Ensures that field teams utilize proper personal protective equipment.
- Conducts initial onsite specific training prior to personnel and/or subcontractors commencing work.
- Conducts and documents periodic safety briefings.
- Ensures that field team members comply with this HASP.
- Completes and maintains Accident Report and Investigation Forms.
- Notifies PP and CHSM of all accident/incidents.

- Notifies PP of daily field operations and work progress, who will then communicate at the end of the day to the designated representative the following:
 - 1. End of day tasks completed
 - 2. Next day's planned activities
 - 3. Third party issues
 - 4. Change of Plans approvals
- Change in level of personal protective equipment (PPE).
- Maintains contact with Contractors.
- Determines upgrade or downgrade of personal protective equipment (PPE) based on Site conditions and/or real time monitoring results.
- Ensures that monitoring instruments are calibrated daily or as manufacturer's suggested instructions determine.
- Submits and maintains health and safety field log books, daily safety logs, training logs, air monitoring result reports, weekly safety report.

2.4 Field Personnel and Subcontractors

- Report any unsafe or potentially hazardous conditions to the SSO.
- Maintain knowledge of the information, instructions, and emergency response actions contained in the HASP.
- Comply with rules, regulations, and procedures as set forth in this HASP and any revisions, which are instituted.
- Prevent admittance to work Site by unauthorized personnel.

3.0 SITE LOCATION, DESCRIPTION, AND HISTORY

Descriptions of the Site and surrounding property usage are included in the following sections. The location of the Site is presented in Figure E-1.

3.1 Property Location and Description

The Site is located at 149 Kent Avenue, Brooklyn, New York. The Site is comprised of a 0.92-acre parcel located on the north side of North 5^{th} Street, between Wythe Avenue and Kent Avenue. The entire site is occupied by a one story former carpet warehouse building. The building is constructed with concrete block and brick walls, steel frame, and roof on a concrete slab. Two loading and unloading bays are located along the building, one on the west side of the building and one along the south side of the building. The building is surrounded by concrete public sidewalks along Kent Avenue, North 5th Street and Wythe Avenue. To the north the building is bordered by several businesses including a coffee bar, a deli, several clothing stress and several vacant buildings.

The Site is currently owned by Kent & Wythe Owners LLC.

4.0 WASTE DESCRIPTION/CHARACTERIZATION

4.1 General

The following information is presented in order to identify the types of materials that may be encountered at the Site. The detailed information on these materials was obtained from:

- SAX's Dangerous Properties of Industrial Materials Lewis Eight Edition
- Chemical Hazards of the Workplace Proctor/Hughes
- Condensed Chemical Dictionary Hawley
- Rapid Guide to Hazardous Chemical in the Workplace Lewis 1990
- NIOSH Pocket Guide to Chemical Hazards 2005
- ACGIH TLV Values and Biological Exposure Indices
- OSHA 29 CFR 1910.1000

4.2 Chemical Data Sheets

Several chemicals that may potentially be present in soils and groundwater at the Site, based on previous soil, soil vapor and groundwater sampling results and historic operations conducted at the Site that have been identified. The Summary of Toxicological Data is found in Table E-1 and is provided for review of chemicals that may be encountered. The Summary of Toxicological Data Sheets provides information such as the chemicals characteristics, health hazards, protection, and exposure limits.

4.2.1 Contaminants of Concern

Soil and groundwater contaminants that may be encountered during drilling and sampling activities include both organic and inorganic compounds. Prior investigations at the site have indicated detection of Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs).

The toxicological, physical, and chemical properties of potential contaminants are presented in Table E-1.

5.0 HAZARD ASSESSMENT

The potential to encounter chemical hazards is dependent upon the work activity performed (intrusive versus non-intrusive), and the duration and location of the work activity. Such hazards could include inhalation and/or skin contact with chemicals/gases that could cause: dermatitis, skin burns, being overcome by vapors or asphyxiation.

Physical hazards that may be encountered during Site work include; heat and cold stress, exposure to excessive noise, loss of limbs, being crushed, head injuries, punctures, cuts, falls, electrocution, and bruises, structural integrity of buildings, asbestos and lead paint exposure, and other physical hazards due to motor vehicle operation, heavy equipment and power tools.

Biological hazards may exist during Site activities. These hazards include exposure to insect bites/stings, animals and animal wastes, mold and bloodborne pathogens.

Prior to the beginning of each new phase of RI work, an activity hazard analysis will be prepared by the SSO with assistance from the CHSM. The analysis will address the hazards for each activity performed in the phase and will present the procedures and safeguards necessary to eliminate the hazards or reduce the risk. The Activity Hazard Analysis Sheets are located in Attachment E-1.

5.1 Chemical Hazards

The potential for personnel and subcontractors to come in contact with chemical hazards may occur during the following tasks:

- Drilling Activities
- Sampling activities
- Decontamination Activities

For chronic and acute toxicity data, refer to Summary of Toxicological Data Sheets in Table E-1 for further details on compound characteristics.

5.1.1 Exposure Pathways

Exposure to these compounds during ongoing activities may occur through inhalation of contaminated dust particles, inhalation of VOCs and SVOCs, dermal absorption, and accidental ingestion of the contaminant by either direct or indirect cross-contamination activities.

Inhalation of contaminated dust particles (VOCs, SVOCs, and inorganics) can occur during adverse weather conditions (high or changing wind directions) or during operations that may generate airborne dust such as excavation and loading of contaminated soils. Dust control measures such as applying water to roadways and excavations will be implemented where visible dust is generated. Where dust control measures are not feasible or effective, respiratory protection will be used when necessary (see Section 9.2.2 for monitoring procedures and action levels).

5.1.2 Operational Action Levels

A decision-making protocol for an upgrade in levels of protection and/or withdrawal of personnel from an area based on atmospheric hazards is outlined in Table E-2.

5.1.3 Additional Precautions

Dermal absorption or skin contact with chemical compounds is possible during intrusive activities at the Site. The use of PPE in accordance with Section 8.2 and strict adherence to proper decontamination procedures should significantly reduce the risk of skin contact.

The potential for accidental ingestion of potentially hazardous chemicals is expected to be remote, when good hygiene practices are used.

5.2 Physical Hazards

A variety of physical hazards may be present during Site activities. These hazards include typical construction activities: operation of motor vehicles and heavy equipment operation, the use of power and hand tools, roping and rigging of steel sheeting, walking on objects, tripping over objects, working on surfaces which have the potential to promote falling, skin burns, crushing of fingers, toes, limbs, head injuries caused by falling objects, temporary loss of one's hearing and/or eyesight. The referenced hazards are not unique and are generally familiar to most hazardous waste site workers at construction sites. Task specific safety requirements for each phase

will be covered during safety briefings. Activity Hazard Analysis summaries are contained in Attachment E-1.

5.2.1 Noise

Noise is a potential hazard associated with operation of heavy equipment, power tools, pumps, and generators. High noise equipment operators will be evaluated at the discretion of the SSO. Employees with an 8-hour time weighted average exposure exceeding 85 dBA will be included in the hearing conservation program in accordance with 29 CFR 1910.95 and 1926.52.

It is mandated that employees working around heavy equipment or using power tools that produce noise levels exceeding 90 dBA are to wear hearing protection that shall consist of earplugs or protective earmuffs.

5.2.2 Heat Stress

Heat stress is a significant potential hazard, associated with the use of protective equipment in a hot weather environment. The human body is designed to function at a certain internal temperature. When metabolism or external sources (fire or hot summer day) cause the body temperature to rise, the body seeks to protect itself by triggering cooling mechanisms. The SSO will monitor the air temperature (as described later in this section) to determine potential adverse effects the weather can cause onsite personnel. Excess heat is dissipated by two means:

- Changes in blood flow to dissipate heat by convection, which can be seen as "flushing" or reddening of the skin in extreme cases.
- Perspiration is the release of water through skin and sweat glands. While working in hot environments, evaporation of perspiration is the primary cooling mechanism.

Protective clothing worn to guard against chemical contact effectively stops the evaporation of perspiration. Thus the use of protective clothing increases heat stress problems.

The major disorders due to heat stress are heat cramps, heat exhaustion, and heat stroke. Heat cramps are painful spasms, which occur in the skeletal muscles of workers who sweat profusely in the heat and drink large quantities of water, but fail to replace the bodies lost salts or electrolytes. Drinking water while continuing to lose salt tends to dilute the body's extracellular fluids.

Soon water seeps by osmosis into active muscles and causes pain. Muscles fatigued from work are usually most susceptible to cramps.

Extreme weakness or fatigue, dizziness, nausea, and headache characterize heat exhaustion. In serious cases, a person may vomit or lose consciousness. The skin is clammy and moist, complexion pale or flushed, and body temperature normal or slightly higher than normal. Treatment is rest in a cool place and replacement of body water lost by perspiration. Mild cases may recover spontaneously with this treatment; severe cases may require care for several days. There are no permanent effects.

Heat stroke is a very serious condition caused by the breakdown of the body's regulating mechanisms. The skin is very dry and hot with red mottled or bluish appearance. Unconsciousness, mental confusion, or convulsions may occur. Without quick and adequate treatment, the result can be death or permanent brain damage. As first aid treatment, the person should be moved to a cool place. Body heat should be reduced artificially, but not too rapidly, by soaking the person's clothes in water and fanning them.

Steps that can be taken to reduce heat stress are:

- Acclimate the body. Allow a period of adjustment to make further heat exposure endurable.
- Drink more liquids to replace the body water lost during sweating.
- Rest is necessary and should be conducted under the direction of the SSO.
- Wear personal cooling devices. These are two basic designs; units with pockets for holding frozen packets and units that circulate fluid from a reservoir through tubes to different parts of the body. Both designs can be in the form of a vest, jacket, or coverall. Some circulating units also have a cap for cooling the head.
- Wear long cotton underwear under chemical protective clothing. The cotton will absorb perspiration and will hold it close to the skin. This will provide the body with the maximum cooling available from the limited evaporation that takes place beneath chemical resistant clothing. It also allows for rapid cooling of the body when the protective clothing is removed.

Heat stress is a significant hazard associated with using protective equipment in hot weather environments. Local weather conditions may produce conditions, which will require restricted work schedules in order to protect employees.

Attachment E-2 contains procedures for heat stress; these will be used as a guideline and to provide additional information.

5.2.3 Cold Stress

Cold temperatures are a significant potential hazard. Examples of cold temperature hazards are frostbite and hypothermia.

Frostbite is the most common injury resulting from exposure to cold. The extremities of the body are most often affected. The signs of frostbite are:

- The skin turns white or grayish-yellow.
- Pain is sometimes felt early but subsides later. Often there is no pain.
- The affected parts feel intensely cold and numb.

Hypothermia is characterized by shivering, numbness, drowsiness, muscular weakness, and a low internal body temperature when the body feels extremely warm. This can lead to unconsciousness and death. With both frostbite and hypothermia, the affected areas need to be warmed quickly. Immersion in warm water is an effective means of warming the affected areas quickly. In such cases, medical assistance will be sought.

To prevent these effects from occurring, persons working in the cold should wear adequate clothing and reduce the time spent in the cold area. The field SSO is responsible for determining appropriate time personnel should spend in adverse weather conditions and will monitor this.

Attachment E-2, which contains the Heat and Cold Stress Guidelines, provides additional information.

5.2.4 Asbestos

Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. Depending on the chemical composition, fibers may range from course to silky. The properties that make asbestos fibers to valuable to industry are its high-tensile strength, flexibility, heat and chemical resistance, and good frictional properties. Asbestos is a common naturally occurring group of fibrous minerals. Asbestos fibers have been used in a variety of building materials; generally, most asbestos is found in pipe insulation, doors, textures paints and plasters, structural fireproofing, and floor tiles. Friable asbestos (that is, material that contains more than 0.1% asbestos by weight and can be crumbled by hand) is a potential hazard because it can release fibers into the air if damaged. Roux Associates' personnel will not disturb any suspected asbestos material.

5.2.5 Structural Integrity

The structural integrity of a building and the safety of the individuals inside depend on meeting and maintaining national and local building codes. Structural integrity can range from minor defects such as loose floorboards and roof leaks to major defects such as floors and walls sagging and collapsed roofs. Numerous other structural defects can exist with or without consequence to the occupants. If Roux Associates personnel detect a problem, they should notify their supervisor, who in turn, should seek the opinion of a qualified structural engineer to offer and opinion regarding the integrity of the building. If in the opinion of the qualified engineer it is unsafe, no work can proceed until a solution to rectify the situation has been performed.

5.2.6 Lockout/Tagout

Roux Associates and all Site contractors will develop a lockout/tagout plan in the event of the repair of electrical, pneumatic, hydraulic, mechanical systems, per OSHA requirements under 29 CFR 1910.147.

5.3 Biological Hazards

The biological hazards, which have the potential to cause adverse health effects, are from exposure to domestic flies, mosquitoes, insects, animals and animal wastes, mold and bloodborne pathogens. The Activity Hazard Analysis (Attachment E-1) suggests controls for various hazards to be potentially encountered onsite.

5.3.1 Insect Stings

Stings from insects are often painful, cause swelling and can be fatal if a severe allergic reaction such as anaphylactic shock occurs. If a sting occurs, the stinger should be scraped out of the skin, opposite of the sting direction. The area should be washed with soap and water followed by application of an ice pack.

If the victim has a history of allergic reaction, he should be taken to the nearest medical facility. If the victim has medication to reverse the effects of the sting, it should be taken immediately.

If the victim experiences a severe reaction, a constricting band should be placed between the sting and the heart. The bitten area should be kept below the heart if possible. A physician should be contacted immediately for further instructions.

5.3.2 Animals and Animal Wastes

Due to most of the onsite structures being abandoned for several years, there lies the potential for various wildlife to reside within the structures, including, but not limited to, pigeons, bats, mice, rats, squirrels, raccoons, and feral cats. Certain animals can represent significant sources (vectors) of disease transmission. Precautions to avoid or minimize potential contact with (biting) animals (such as some of the above listed) or animal waste and/or deceased animals should be considered prior to all field activities. Rats, squirrels, raccoons, feral cats, and other wild animals can inflict painful bites which can also cause disease (as in the case of rabid animals). Site personnel should avoid contact with any of the above.

If contact occurs, be sure to clean the area thoroughly with soap and water as soon as possible. If a bite occurs, the area should be cleaned thoroughly immediately with soap and water and medical attention should be sought.

5.3.3 Mold

Although mold affects individuals differently and to different degrees, the following are some of the most common adverse health effects:

- Respiratory problems wheezing, difficulty breathing;
- Nasal and sinus congestion;

- Eyes burning, watery, reddened, blurry vision, light sensitivity;
- Dry, hacking cough;
- Sore throat;
- Nose and throat irritation;
- Shortness of breath and lung disease;
- Chronic fatigue;
- Skin irritation;
- Central nervous system (headaches, loss of memory, and mood changes);
- Aches and pains;
- Fever;
- Headaches;
- Diarrhea; and
- Immune suppression.

Decisions about removing individuals from an affected area must be based on the results of a medical evaluation, and be made on a case-by-case basis.

Workers that discover the visible presence of mold in excess of 10 sq. feet need to notify the SSO for consultation. If a worker smells mold and feels that he/she is experiencing symptoms of exposure, he/she should retreat and report the symptoms to the SSO.

5.3.4 Bloodborne Pathogens

The majority of the occupational tasks onsite will not involve a significant risk of exposure to blood, blood components, or body fluids. The highest risk of acquiring any bloodborne pathogen for employees onsite will be following an injury. When administering first aid care, there are potential hazards associated with bloodborne pathogens that cause diseases such as Human Immunodeficiency Virus (HIV), Hepatitis B (HBV), Hepatitis A (HAV), Hepatitis C (HCV), or the Herpes Simplex Virus (HSV). An employee who has not received the appropriate certification should never execute first aid and/or CPR.

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In order to minimize any potential pathogen exposure, all employees should use the hand washing facilities on a regular basis. Additionally, the following universal precautions should be followed to prevent further potential risk:

- Direct skin or mucous membrane contact with blood should be avoided.
- Open skin cuts or sores should be covered to prevent contamination from infectious agents.
- Body parts should be washed immediately after contact with blood or body fluids that might contain blood, even when gloves or other barriers have been used.
- Gloves and disposable materials used to clean spilled blood shall be properly disposed of in an approved hazardous waste container.
- First aid responders shall wear latex or thin mil nitrile gloves when performing any procedure risking contact with blood or body substances.
- Safety glasses will be worn to protect the eyes from splashing or aerosolization of body fluids.
- A CPR mask will be worn when performing CPR to avoid mouth-to-mouth contact.
- Work gloves will be worn to minimize the risk of injury to the hands and fingers when working on all equipment with sharp or rough edges.
- Never pick up broken glass or possible contaminated material with your unprotected hands.
- Never handle wildlife (living or deceased) encountered onsite.

5.4	Hazard Assessment
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Task	Hazards	Risk of Exposure
Decontamination	Inhalation/Skin Contact	Moderate
	Heat Stress/Cold Stress	Moderate
	Physical Injury	Moderate
	Noise	Low
Drilling/Sampling	Inhalation/Skin Contact	Moderate
	Heat Stress/Cold Stress	Moderate
	Noise	Moderate/High
	Physical Injury	Moderate

6.0 TRAINING

6.1 General Health and Safety Training

In accordance with Roux Associates' corporate policies, and pursuant to 29 CFR 1910.120, during RI work, hazardous waste site workers shall, at the time of the job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations. As a minimum, the training shall have consisted of instruction in the topics outlined in the above reference. Personnel who have not met the requirements for initial training will not be allowed to work in any Site activities in which they may be exposed to hazards (chemical or physical).

Completion of a 40-hour Health and Safety Training Course for Hazardous Waste Operations or an approved equivalent will fulfill the requirements of this section.

In addition to the required initial training, each employee shall have received 3 days of directly supervised on-the-job training. This training will address the duties the employees are expected to perform.

Roux Associates' SSO has the responsibility of ensuring that personnel assigned to this project comply with these requirements.

6.2 Annual Eight-Hour Refresher Training

Annual 8-hour refresher training will be required of all hazardous waste site field personnel in order to maintain their qualifications for fieldwork. The following topics will be reviewed; toxicology, respiratory protection, including air purifying devices and self-contained breathing apparatus (SCBA), medical surveillance, decontamination procedures, and personal protective clothing. In addition, topics deemed necessary by Roux Associates' Health and Safety Director may be added to the above list.

6.3 Site-Specific Training

Site personnel will receive training that will specifically address the activities, procedures, monitoring, and equipment for Site operations. It will include Site and facility layout, hazards, first aid equipment locations and emergency services at the Site, and will highlight all provisions contained within this HASP. This training will also allow field workers to clarify anything they do

not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

6.4 Onsite Safety Meetings

Daily safety meetings will be presented each morning to discuss potential safety concerns for the upcoming activities.

The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety audits by Roux Associates or other involved parties.

6.5 First Aid and CPR

The SSO will identify those individuals having first aid and CPR training in order to ensure that emergency medical treatment is available during field activities. The training will be consistent with the requirements of the American Red Cross Association. Certification and appropriate training documentation will be kept with the Site personnel records.

6.6 Additional Training

The CHSM may require additional or specialized training throughout the project. Such training shall be in the safe operation of heavy or power tool equipment or hazard communication training or other topic deemed Site appropriate.

6.7 Subcontractor Training

All subcontractor personnel working on the Site shall have completed the 40-hour training requirement and meet the medical surveillance requirements found in Section 7.1. Subcontractor training shall be performed in accordance with 29 CFR 1910.120 and HASP specifications. In certain unique situations (e.g., mechanical failure of equipment), the non-trained individual performing emergency repairs may be allowed, at the discretion of the SSO, to perform repairs when no intrusive activities are being performed, and provisions have been made to mitigate potential exposure.

7.0 MEDICAL SURVEILLANCE PROCEDURES

7.1 General

A Medical Surveillance Program has been established as part of this plan and is included in Attachment E-3. Roux Associates and subcontractor personnel performing field work at the Site are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120(f). A physician's medical release for work will be confirmed by the SSO before an employee can begin Site activities. Such examinations shall include a statement as to the worker's present health status, the ability to work in a hazardous environment (including any required PPE, which may be used during temperature extremes), and the worker's ability to wear respiratory protection.

Attachment E-3, "Medical Data Sheet," will be completed by all permanent, onsite personnel and will be kept in Roux Associates offices during the conduct of Site operations. Completion is required in addition to compliance with Roux Associates' Health and Safety Program. This data sheet will be available through the Roux Associates Human Resources Department if medical assistance is needed or if transport to hospital facilities is required.

8.0 SITE CONTROL, PERSONAL PROTECTIVE EQUIPMENT, AND COMMUNICATIONS

A modified Site control approach may be utilized since activities will be limited to site inspection/geophysical survey, drilling and sampling only during this phase of work. If remedial work is necessary, the following four-zone approach will be used.

8.1 Site Control

Based on the Site history and operations, a potential for the presence of hazardous material does exist. During drilling and sampling, work areas will be delineated with high visibility cones and/or caution tape. A dedicated decontamination area will be established to decontaminate all equipment used for sampling.

If remedial activities are necessary, a four-zone approach will be employed in order to prevent the spread of contamination from the disturbed areas onsite. The four zones include: the Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), Contamination Reduction Corridor (CRC) and the Support Zone (SZ). A stepped remedial approach will be managed, and the zones modified as the work progresses. Each of the areas will be defined through the use of control barricades and/or construction/hazard fencing. A clearly marked delineation between the SZ and the remaining three zones, the CRZ and CRC and the EZ will be maintained. The preferred method will utilize high visibility orange fencing and hand driven metal posts, or orange cones. Signage will be posted to further identify and delineate these areas.

8.1.1 Support Zone

The Support Zone (SZ) is an uncontaminated area that will be the field support area for the Site operations. The SZ will contain the temporary project trailers and provides for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel or materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples. Meteorological conditions will be observed and noted from this zone, as well as those factors pertinent to heat and cold stress.

8.1.2 Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) is established between the exclusion zone and the support zone. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination of personnel and equipment. The CRZ will be used for general Site entry and egress in addition to access for heavy equipment and emergency support services. Personnel are not allowed in the CRZ without:

- A buddy (co-worker);
- Appropriate PPE;
- Medical authorization;
- Training certification; and
- A need to be in the zone.

8.1.3 Exclusion Zone

The area where contamination exists is considered to be the Exclusion Zone (EZ). All areas where excavation and handling of contaminated materials take place are considered the EZ. This zone will be clearly delineated by orange high visibility fencing. Safety tape may be used as a secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The SSO may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Personnel are not allowed in the EZ without:

- A buddy (co-worker);
- Appropriate PPE;
- Medical authorization;
- Training certification; and
- A need to be in the zone.

8.2 Personal Protective Equipment

8.2.1 General

The level of protection worn by field personnel will be enforced by the SSO. Levels of protection for general operations are provided below and are defined in this section. Levels of protection

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may be upgraded at the discretion of the SSO. All decisions on the level of protection will be based upon a conservative interpretation by the SSO of the information provided by air monitoring results, environmental results and other appropriate information. Any changes in the level of protection shall be recorded in the health and safety field logbook.

8.2.2 Personal Protective Equipment Specifications

The initial level of personal protective equipment is Level D. It is not anticipated that either Level B or Level C protection will be necessary.

Although not anticipated, any tasks requiring Level B personal protective equipment (PPE) will utilize the following equipment:

- Positive pressure, full facepiece, self-contained breathing apparatus (SCBA) or positive pressure, supplied air respirator with escape SCBA (NIOSH approved)
- Disposable coveralls (Tyvek, Poly-coated Tyvek, or Saranex)
- Gloves, inner: latex or nitrile
- Gloves, outer: nitrile or neoprene
- Chemical resistant boots over the work boots
- Steel toe work boots
- Hard hat
- Hearing protection (as needed)
- Boot cover (as needed)

For tasks requiring Level C PPE, the following equipment may be used in any combination:

- Full-face, air purifying, canister-equipped respirators (NIOSH approved) utilizing Organic Vapor/Acid Gas and P-100 filters (half-face if approved by SSO)
- Disposable coveralls (Tyvek, Poly-coated Tyvek, or Saranex) as required
- Gloves, inner: latex or nitrile as required
- Gloves, outer: nitrile or neoprene as required
- Chemical resistant boots over the work boots as required

- Steel toe work boots
- Hard hat
- Hearing protection (as needed)
- Safety glasses (if half-mask is utilized)
- Boot covers (as needed)

The Minimum level of PPE for entry onto the Site is Level D PPE. The following equipment shall be used:

- Work uniform (long pants, sleeved shirt)
- Hard hat
- Steel toe work boots
- Safety glasses
- Boot covers (as needed)
- Hearing protection (as needed)
- Reflective safety vest (as needed)

Modified Level D PPE consists of the following:

- Regular Tyvek coveralls (Poly-coated Tyvek as required)
- Outer gloves: leather, cotton, neoprene or nitrile (as required)
- Inner gloves: latex or nitrile (doubled) as required
- Chemical resistant boots over work boots (as required)
- Steel toe work boots
- Hard hat
- Safety glasses
- Hearing protection as needed
- Reflective safety vest

8.2.3 Initial Levels of Protection

Levels of protection for the proposed scope of work may be upgraded or downgraded depending on direct-reading instruments or personnel monitoring. The following are the initial levels of protection that shall be used for each planned RI field activity:

Activity	Initial level of PPE
Mobilization/Demobilization	D
Site Inspection/Geophysical Survey	D
Decontamination	D
Drilling	D
Groundwater Sampling	D

8.3 Communications

If working in level C/B respiratory protection is required, personnel may find that communication becomes a more difficult task and process to accomplish. Distance and space further complicate this. In order to address this problem, electronic instruments, mechanical devices, or hand signals will be used as follows:

<u>Telephones</u> – Mobile telephones will be carried by designated personnel for communication with emergency support services/facilities.

<u>Radios</u> – Two-way radios will be utilized onsite for communications between field personnel in areas where visual contact cannot be maintained and where hand signals cannot be employed.

<u>Air Horn</u> – Available as posted in the Site trailer or support zone to alert field personnel to an emergency situation. The emergency signal will be the sharp blasts of the air horn.

<u>Hand Signals</u> – This communication method will be employed by members of the field team along with use of the buddy system. Signals become especially important when in the vicinity of heavy moving equipment and when using Level B respiratory equipment. The signals shall become familiar to the entire field team before Site operations commence, and will be reinforced and reviewed during site-specific training.

Sig	<u>nal</u>	

Hand gripping throat			
Grip partner's wrist			
Hands on top of head			
Thumbs up			
Thumbs down			

Meaning

Out of air; can't breathe	
Leave area immediately; no debate	
Need assistance	
OK; I'm all right; I understand	

No; Unable to understand you, I'm not all right

9.0 MONITORING PROCEDURES

9.1 General

A Community Air Monitoring Plan ("CAMP") will be implemented onsite, in which VOCs will be monitored in the work area during ground intrusive activities. The CAMP can be found in Attachment E-4. VOCs will be monitored as a precautionary measure. The design of the CAMP is intended to provide a measure of protection for the onsite workers not directly involved with the subject work activities from potential airborne contaminant releases as a direct result of remedial work activities. Monitoring will be performed to verify the adequacy of the Level D respiratory protection, to aid in Site layout, and to document monitoring results. If air monitoring in the work areas indicates the presence of potentially hazardous materials, control measures will be implemented. All monitoring instruments shall be operated by qualified personnel only and will be calibrated prior to use daily or more often, as necessary. The SHSO is responsible for ensuring that appropriate monitoring, levels of protection, and safety procedures are followed.

9.2 Exclusion Zone Monitoring

9.2.1 Instrumentation

The following monitoring instruments will be available for use during field operations as necessary:

• <u>Photoionization Detector</u> (PID) with 10.6 EV probe or Flame Ionization Detector (FID) or equivalent.

A PID organic vapor meter shall be used to monitor VOCs in active work areas during the soil intrusive activities.

Calibration records shall be documented and recorded daily and included in the daily Health and Safety Briefing Form (Attachment E-5) or Site designated field notebook.

9.2.2 Action Levels

Action levels for the upgrading of PPE requirements in the HASP will apply to all Site work during investigation and remediation activities at the Site. Action levels are for known contaminants using direct reading instruments in the Breathing Zone (BZ) for VOCs and particulates, and at the source for combustible gases. The BZ will be determined by the SSO, but is typically 4 to 5 feet above the work area surface or elevation. The action levels to be utilized for the Site are found in Table E-2.

9.2.3 Monitoring During Field Activities

<u>Intrusive Operations</u> – Continuous Personnel Breathing Zone Air Monitoring will be performed by the SSO during drilling activities. Real-time monitoring for all onsite activities will be accomplished as follows:

• Monitoring of VOCs in the work zones.

The frequency of monitoring may be modified by the SSO, after consultation with the Project Manager. The rationale for any modification must be documented in the HASP.

10.0 SAFETY CONSIDERATIONS

10.1 General

In addition to the specific requirements of this HASP, common sense should be used at all times.

The following general safety rules and practices will be in effect at the site.

- All open holes, trenches, and obstacles will be properly barricaded in accordance with local Site needs and requirements. Proximity to traffic ways, both pedestrian and vehicular, and location of the open hole, trench, or obstacle will determine these needs.
- All excavation and other Site work will be planned and performed with consideration for underground lines.
- Smoking and ignition sources in the vicinity of potentially flammable or contaminated material are strictly prohibited.
- Drilling, boring, and use of cranes and drilling rigs, erection of towers, movement of vehicles and equipment, and other activities will be planned and performed with consideration for the location, height, and relative position of aboveground utilities and fixtures, including signs; lights; canopies; buildings and other structures and construction; and natural features such as trees, boulders, bodies of water, and terrain.
- When working in areas where flammable vapors may be present, particular care shall be exercised with tools and equipment that may be sources of ignition. All tools and equipment provided must be properly bonded and/or grounded.
- Approved and appropriate safety equipment (as specified in this HASP), such as eye protection, hard hats, hand protection (nitrile, leather and/or cut resistant gloves as necessary), foot protection, and respirators, must be worn in areas where required. In addition, eye protection must be worn when sampling soil or water that may be contaminated.
- All site personnel may be called upon to use respirator protection in some situations. Fit testing will be necessary for all persons using respirators. The criteria for facial hair will be determined by the SSO. In general, the guideline is that facial hair cannot impede the fit of the respirator.
- No smoking, eating, chewing tobacco, gum chewing or drinking will be allowed outside the SZ.
- Contaminated tools and hands must be kept away from the face.
- Personnel must use personal hygiene safe guards (washing up) at the end of the shift.
- Each sample must be treated and handled as though it were contaminated.
- Persons with long hair and/or loose-fitting clothing that could become entangled in power equipment must take adequate precautions.

- Horseplay is prohibited in the work area.
- Work while under the influence of intoxicants, narcotics, or controlled substances is strictly prohibited.

10.2 Traffic Control

Traffic control methods and barricades will be used as needed when working in areas of vehicular traffic. Since the entire site is covered by the existing warehouse building, outside vehicular and pedestrian traffic is not considered to be an issue at this time. If offsite drilling occurs vehicular and or pedestrian traffic may be an issue and this plan will be amended accordingly.

10.3 Sample Handling

Personnel responsible for handling of samples will wear the prescribed level of protection. Samples are to be identified as to their hazard and packaged as to prevent spillage or breakage. Any unusual sample conditions shall be noted. Laboratory personnel and all field personnel shall be advised of sample hazard levels and the potential contaminants present. This can be accomplished by a phone call to the lab coordinator and/or including a written statement with the samples reviewing lab safety procedures in handling in order to assure that the practices are appropriate for the suspected contaminants in the sample.

11.0 DECONTAMINATION AND DISPOSAL PROCEDURES

11.1 Contamination Prevention

Contamination prevention should minimize worker exposure and help ensure valid sample results by precluding cross-contamination. Procedures for contamination avoidance include:

Personnel

- Do not walk through areas of obvious or known contamination.
- Do not directly handle or touch contaminated materials.
- Make sure that there are no cuts or tears on PPE.
- Fasten all closures in suits; cover with tape, if necessary.
- Particular care should be taken to protect any skin injuries.
- Stay upwind of airborne contaminants.
- Do not carry cigarettes, cosmetics, gum, etc., into contaminated areas.

Sampling/Monitoring

- When required by the SSO, cover instruments with clear plastic, leaving openings for sampling ports.
- Bag sample containers prior to emplacement of sample material.

Heavy Equipment

- Care should be taken to limit the amount of contamination that comes in contact with heavy equipment (tires, contaminated augers).
- If contaminated tools are to be placed on non-contaminated equipment for transport to a decontamination area, plastic should be used to keep the equipment clean.
- Dust control measures including water misting will be used on roads inside the Site boundaries.

11.2 Personnel Decontamination

A field wash for equipment and PPE shall be set up and maintained for all persons exiting the EZ. The system will include a gross wash and rinse for all disposable clothing and boots worn in the EZ. As necessary, equipment and facilities will be available for personnel to wash their hands, arms, neck, and face.

11.3 Equipment Decontamination

All potentially contaminated equipment used at the Site will be decontaminated to prevent contaminants from leaving the Site. The decontamination area will provide for the containment of all wastewater from the decontamination process. Respirators and any other PPE that comes in contact with contaminated materials shall pass through a field wash in the decontamination area, and a thorough decontamination at the end of the day. All decontamination rinse water will be collected and managed in accordance with all applicable regulations.

11.4 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment are required, normal decontamination procedures may need to be abbreviated or omitted. The Site SSO or designee will accompany contaminated victims to the medical facility to advise on matters involving decontamination, when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment, or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed, a plastic barrier between the individual and clean surfaces should be used to help prevent contaminating the inside of ambulances and/or medical personnel. Outer garments are then removed at the medical facility. No attempt will be made to wash or rinse the victim, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material, which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems (ambulatory) or injuries, the normal decontamination procedures will be followed. Note that heat stroke requires prompt treatment to prevent irreversible damage or death. Protective clothing must be promptly removed. Less serious forms of heat stress also require prompt attention and removal of protective clothing immediately. Unless the victim is obviously contaminated, decontamination should be omitted or minimized, and treatment begun immediately.

11.5 Disposal Procedures

A system of segregating all waste will be developed by the SSO.

All discarded materials, waste materials, or other objects shall be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard, or causing litter to

be left onsite. All potentially contaminated materials (e.g., clothing, gloves, etc.,) will be bagged or drummed as necessary, labeled and segregated for disposal. All non-contaminated materials shall be collected and bagged for appropriate disposal as domestic waste.

12.0 EMERGENCY PLAN

Should an emergency situation occur, the emergency plan, outlined in this section, shall be known by Roux Associates and all Subcontractors prior to the start of work. The emergency plan will be available for use at all times during Site work. The plan provides the phone numbers for the fire, police, ambulance, hospital, poison control centers, and directions to the hospital from the Site. This information is to be found in Section 1.2 of the HASP.

Various individual Site characteristics will determine preliminary actions taken to assure that this emergency plan is successfully implemented in the event of a Site emergency. Careful consideration must be given to the proximity of neighborhood housing or places of employment, and to the relative possibility of Site release of vapors, which could affect the surrounding community.

The emergency coordinator shall implement the contingency plan whenever conditions at the Site warrant such action. The coordinator will be responsible for coordination of the evacuation, emergency treatment and transport of Site personnel as necessary, and notification of emergency response units and the appropriate management staff.

In cases where the project manager is not available, the SSO shall serve as the alternate emergency coordinator.

The SSO during an emergency will perform air monitoring as needed, as well as lend assistance and provide health and safety information to responding emergency personnel.

Site Personnel will endeavor to keep non-essential personnel away from the incident until the appropriate emergency resources arrive. At that time, the responders will take control of the Site. Site personnel may be asked to lend assistance to emergency personnel such as during evacuations, help with the injured, etc.

12.1 Evacuation

Evacuation procedures will be discussed prior to the start of work and periodically during safety meetings. In the event of an emergency situation, such as fire, or explosion, an air horn,

automobile horn, or other appropriate device will be sounded for three (3) sharp blasts indicating the initiation of evacuation procedures. The emergency evacuation route shall be known by all site workers. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The SSO or project manager must ensure that access for emergency equipment is provided and that all combustion apparatuses have been shut down once the alarm has been sounded. All Site personnel will assemble in the designated nearest safe location. Once the safety of all personnel is established, the fire department and other emergency response groups will be notified by telephone of the emergency.

12.2 Personnel Injury

Emergency first aid shall be applied onsite as appropriate. If necessary, the individual shall be decontaminated and transported to the nearest hospital. The SSO will supply medical data sheets to medical personnel and complete the accident/incident reports in accordance with Section 13.4 of the HASP.

The ambulance/rescue squad shall be contacted for transport as necessary in an emergency. However, since some situations may require transport of an injured party by other means, the injured person shall be escorted to the hospital. A map to this facility is shown in Figure E-2.

12.3 Accident/Incident Reporting

As soon as first aid and/or emergency response needs have been met, the following parties are to be contacted by telephone: (Direct contact, no phone messages).

			Office:
1.	Project Director:	Joseph Duminuco	631-232-2600
2.	Office Health and Safety Manager:	Joe Gentile	856-423-8800
3.	Site Health and Safety Officer:	David Bligh	631-232-2600

4. The employer of any injured worker, if not a Roux Associates employee.

Written confirmation of verbal reports are to be submitted within 24 hours. The report form entitled "Accident Report and Investigation Form" (Attachment E-6) is to be used for this purpose.

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All representatives contacted by telephone are to receive a copy of this report. If the employee involved is not a Roux Associates employee, his employer shall receive a copy of the report. In addition to filling out the Accident Report and Investigation Form, if a Roux employee is involved in a vehicle accident, the employee must also complete the Acord form (Attachment E-7).

For reporting purposes, the term accident refers to fatalities, lost time injuries, spill or exposure to hazardous materials (radioactive materials, toxic materials, explosive or flammable materials), fire, explosion, property damage, or potential occurrence (i.e., near miss) of the above.

Any information released from the health care provider, which is not deemed confidential patient information, is to be attached to the appropriate form. Any medical information, which is released by patient consent, is to be filed in the individual's medical record and treated as confidential.

12.4 Personnel Exposure

Skin Contact:	Use copious amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention. Eyes should be rinsed for 15 minutes upon chemical contamination.	
Inhalation:	Move to fresh air and/or, if necessary, decontaminate/transport to hospital.	
Ingestion:	Decontamination and transport to emergency medical facility.	
Puncture Wound or Laceration:	Decontamination and transport to emergency medical facility.	

12.5 Adverse Weather Conditions

In the event of adverse weather conditions, the SSO or project manager will determine if work can continue without sacrificing the health and safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.
- Treacherous weather-related conditions.
- Limited visibility.
- Electrical storm potential.

Site activities will be limited to daylight hours and acceptable weather conditions. Inclement working conditions include heavy rain, fog, high winds, and lightning. Observe daily weather reports and evacuate if necessary in case of inclement weather conditions.

13.0 LOGS, REPORTS AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping for this project.

13.1 Medical and Training Records

The employer keeps medical and training records. The subcontractor employer must provide verification of training and medical qualifications to the SSO. The SSO will keep a log of personnel meeting appropriate training and medical qualifications for Site work. The log will be kept in the project file. Roux Associates will maintain medical records in accordance with 29 CFR 1910.20.

13.2 Onsite Log

The SSO or project manager will keep a log of onsite personnel daily in the designated field book.

13.3 Exposure Records

Any personal monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept by Roux Associates in accordance with 29 CFR 1910.20.

13.4 Accident/Incident Reports

An accident/incident report must be completed following procedures given in Attachment E-6. The originals will be sent to Roux Associates for maintenance. Copies will be distributed as stated. A copy of the forms will be kept in the project file.

13.5 OSHA Form 300

An OSHA Form 300 (Log of Occupational Injuries and Illnesses) (Attachment E-8) will be kept at the Site. All reportable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to Roux Associates for maintenance. Subcontractor employers must also meet the requirements of maintaining an OSHA 300 form.

13.6 Daily Safety Logs

The Daily Safety Log form in Attachment E-5 will be completed daily by the SSO and submitted to the project manager.

14.0 FIELD TEAM REVIEW

Each Roux Associates employee or subcontractor shall sign this section after site-specific training

is completed and before being permitted to work at the Site.

I have read and reviewed the Site Health and Safety Plan prepared for this Site. I understand and will comply with the provisions contained therein.

Site/Project: Kent & Wythe Owners LLC 149 Kent Avenue Brooklyn, New York

Date	Name	Signature	Company
SSO CERTIFICATION OF HOSPITAL DIRECTIONS

Name of Roux Associates SSO:

Date:_____

This is to certify that on ______, I personally drove the route to Woodhull Medical Center as listed in the HASP. The Map Routing and Directions were/were not as listed in the plan. Listed below were conditions that resulted in different directions.

Roux Associates Site Health and Safety Officer

TABLES

- E-1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site
- E-2. Action Levels for Worker Breathing Zone

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
1,1,1-Trichloroethane	71-55-6	TWA 350 ppm STEL 440 ppm C 440 ppm	C 350 ppm (1900 mg/m ³) [15- minute]	TWA 350 ppm (1900 mg/m ³)	700 ppm	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias;	Eyes, skin, central nervous system, cardiovascular system, liver	Colorless liquid with a mild, chloroform-like odor. BP: 165°F UEL: 12.5% LEL: 7.5%
1,1,2-Trichloroethane	79-00-5	TWA 10 ppm	Ca TWA 10 ppm (45 mg/m ³) [skin]	TWA 10 ppm (45 mg/m ³) [skin]	Ca [100 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; central nervous system depression; liver, kidney damage; dermatitis; [potential occupational carcinogen]	Eyes, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a sweet, chloroform-like odor. BP: 237°F UEL: 15.5% LEL: 6%
1,1-Dichloroethane	75-34-3	TWA 100 ppm	TWA 100 ppm (400 mg/m ³)	TWA 100 ppm (400 mg/m ³)	3000 ppm	inhalation, ingestion, skin and/or eye contact	Irritation skin; central nervous system depression; liver, kidney, lung damage	Skin, liver, kidneys, lungs, central nervous system	Colorless, oily liquid with a chloroform-like odor. BP: 135°F F1.P: 2°F UEL: 11.4% LEL: 5.4%
1,1-Dichloroethene	75-35-4	TWA 5 ppm	Ca (lowest feasible concentration	n TWA 1ppm	Ca [N.D.]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid or gas (above 89°F) with a mild, sweet, chloroform-like odor. BP: 89°F Fl.P: -2°F UEL: 15.5% UEL: 6.5% Class IA Flammable Liquid
1,2,4-Trimethylbenzene	95-63-6	None established	TWA 25 ppm (125mg/m ³)	None established	N.D.	Inhalation; ingestion; skin and/or eye contact	Eye, skin, nose, and throat, resp syst irritation; bronchitis; hypochromic anemia; headache, drowsiness, weakness, dizziness, nausea, incoordination, vomit, confusion; chemical pneumonitis	Eyes, skin, resp sys, CNS, blood	Clear, colorless liquid with a distinctive, aromatic odor BP: 337°F FL.P: 112°F UEL: 6.4% LEL: 0.9% Class II Flammable liquid
1,2,4-Trimethylbenzene	95-63-6	TWA 25 ppm (125 n	nę TWA 25 ppm (125 mg/m ³)	None established	N.D.	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, fatigue, dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eyes, skin, respiratory system, central nervous system, blood	Clear, colorless liquid with a distinctive, aromatic odor. BP: 337°F FLP: 112°F UEL: 6.4% LEL: 0.9% Class II Flammable Liquid
1,2-Dichlorobenzene	95-50-1	TWA 25 ppm STEL 50 ppm	C 50 ppm (300 mg/m ³)	C 50 ppm (300 mg/m ³)	200 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; liver, kidney damage; skin blisters	Eyes, skin, respiratory system, liver, kidneys	Colorless to pale-yellow liquid with a pleasant, aromatic odor. [herbicide] BP: 357°F FI.P: 151°F UEL: 9.2% LEL: 2.2% Class IIIA Combustible Liquid
1,2-Dichloroethane	107-06-2	TWA 10 ppm	Ca TWA 1 ppm (4 mg/m ³) STEL 2 ppm (8 mg/m ³)	TWA 50 ppm C 100 ppm 200 ppm [5-minute maximum peak in any 3 hours]	Ca [50 ppm]	inhalation, ingestion, skin absorption, skin and/or eye contact	Irritation eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; [potential occupational carcinogen]	Eyes, skin, kidneys, liver, central nervous system, cardiovascular system	Colorless liquid with a pleasant, chloroform-like odor. [Note: Decomposes slowly, becomes acidic & darkens in color.] BP: 182°F Fl.P: 56°F UEL: 16% LEL: 6.2% Class IB Flammable Liquid

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
1,2-Dichloroethene (total)	540-59-0	TWA 200 ppm (790	n TWA 200 ppm (790 mg/m ³)	TWA 200 ppm (790 mg/m ³)	1000 ppm	inhalation, ingestion skin and/or eye contact	, Irritation eyes, respiratory system central nervous system depression	; Eyes, respiratory system, n central nervous system	Colorless liquid (usually a mixture of the cis & trans isomers) with a slightly acrid, chloroform-like odor BP: 118-140°F FI.P: 36-39°F UEL: 12.8% LEL: 5.6% Class IB Flammable Liquid
1,3,5-Trimethylbenzene	108-67-8	None established	TWA 25 ppm (125mg/m ³)	None established	N.D.	Inhalation; ingestion; skin and/or eye contact	Eye, skin, nose, and throat, resp syst irritation; bronchitis; hypochromic anemia; headache, drowsiness, weakness, dizziness, nausea, incoordination, vomit, confusion; chemical pneumonitis	Eyes, skin, resp sys, CNS, blood	Clear, colorless liquid with a distinctive, aromatic odor BP: 329°F FL.P: 122°F Class II Flammable liquid
1,3,5-Trimethylbenzene	108-67-8	TWA 25 ppm (125 n	nş TWA 25 ppm (125 mg/m ³)	None established	N.D	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eyes, skin, respiratory system, central nervous system, blood	Clear, colorless liquid with a distinctive, aromatic odor. BP: 329°F Fl.P: 122°F Class II Flammable Liquid
1,4-Dichlorobenzene	106-46-7	TWA 10 ppm	Ca	TWA 75 ppm (450 mg/m ³)	Ca [150 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Eye irritation, swelling periorbita (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	l Liver, respiratory system, e eyes, kidneys, skin	Colorless or white crystalline solid with a mothball-like odor. [insecticide] BP: 345°F Fl.P: 150°F LEL: 2.5% Combustible Solid
2,4-Dimethylphenol	105-67-9	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system, mouth, throat, stomach; dizziness, weakness, fatigue, nausea, headache; systemic damage; moderate to severe eye injury.	Skin, CVS, eyes, CNS	Clear, colorless liquid with a faint ether or chloroform-like odor BP: 178°F
2-Butanone (MEK)	78-93-3	TWA 200 ppm (590 mg/m ³) STEL 300 ppm (885 mg/m ³)	TWA 200 ppm (590 mg/m ³) STEL 300 ppm (885 mg/m ³)	TWA 200 ppm (590 mg/m ³)	3000 ppm	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a moderately sharp, fragrant, mint- or acetone- like odor. BP: 175°F FI.P: 16°F UEL(200°F): 11.4% LEL(200°F): 1.4% Class IB Flammable Liquid
Acenaphthene	83-32-9	None established	None established	None established	None established	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, respiratory system	Eyes, skin, respiratory system	Brown solid

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Acetone	67-64-1	TWA 200 ppm STEL 500 ppm	TWA 250 ppm (590 mg/m ³)	TWA 1000 ppm (2400 mg/m ³)	2500 ppm [10%LEL]	inhalation, ingestion, skin and/or eye contact	Irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a fragrant, mint-like odor BP: 133°F FI.P: 0°F UEL: 12.8% LEL: 2.5% Class B Elammable Liquid
Anthracene	65996-93-2	TWA 0.2 mg/m ³	Ca TWA 0.1 mg/m ³ (cyclohexane-extractable fraction)	TWA 0.2 mg/m ³ (benzene-soluble fraction)	Ca [80 mg/m ³]	inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue. Combustible Solids
Antimony	7440-36-0	TWA 0.5 mg/m ³	TWA 0.5 mg/m ³	TWA 0.5 mg/m ³	50 mg/m ³ (as Sb	, inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarthea; stomach cramps; insomnia; anorexia; unable to smell properly	Eyes, skin, respiratory system, cardiovascular system	Silver-white, lustrous, hard, brittle solid; scale-like crystals; or a dark- gray, lustrous powder. BP: 2975°F
Arsenic (inorganic)	7440-38-2 (metal)	TWA 0.01 mg/m3	Ca C 0.002 mg/m3 [15-min]	TWA 0.010 mg/m3	Ca [5 mg/m3 (as As)]	Inhalation; ingestion; skin absorption; skin and/or eye contact	: Ulceration of nasal septum, dermatitis, GI disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]	Liver, kidneys, skin, lungs, lymphatic sys	Metal: sliver-gray or tin-white, brittle, odorless solid BP: sublimes
Asbestos	1332-21-4	TWA 0.1 f/cc	Ca 100,000 fibers/m3	TWA 0.1 fiber/cm3	Ca [IDLH value has not been determined]	 Inhalation; ingestion: skin and/or eye contact 	Asbestosis (chronic exposure), dyspnea, interstitial fibrosis, restricted pulmonary function, finger clubbing, irritation eyes, [potential occupational carcinogen]	Respiratory system, eyes,	White or greenish (chrysotile), blue (crocidolite), or gray-green (amosite), fibrous, odorless solids. BP: decomposes
Asphalt fumes	8052-42-4	TWA 0.5 mg/m ³ (fumes)	Ca C 5 mg/m3 [15 min]	None established	Ca [IDLH value has not been determined]	Skin absorption; inhalation; skin and/or eye contact	Irritation eyes, resp sys	Eyes, respiratory system	Black or dark brown cement-like substance Combustible solid
Barium	7440-39-3	TWA 0.5 mg/m3	None established	TWA 0.5 mg/m3	None established	Inhalation, ingestion, skin contact	Irritation skin, respiratory system,	Skin, eyes, respiratory system	Yellow white powder BP: 1640 C
Benzene	71-43-2	TWA 0.5 ppm STEL 2.5 ppm	Ca TWA 0.1 ppm STEL 1 ppm	TWA 1 ppm STEL 5 ppm	Ca [500 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen]	Eyes, skin, respiratory system, blood, central nervous system, bone marrow	Colorless to light yellow liquid with an aromatic odor [Note: Solid below 42 °F] BP: 176°F Fl.Pt = 12°F LEL: 1.2% UEL: 7.8% Class B Flammable liquid
Benzo[a]anthracene	56-55-3	None established	None established	None established	None established	Inhalation; ingestion; skin absorption; skin and/or eye contact	; Irritation eyes, skin, respiratory system, CNS	Skin	Pale Yellow crystal, solid BP: 438 C

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Benzo[a]pyrene	50-32-8	None established	TWA 0.1 mg/m3	TWA 0.2 mg/m3	None established	Inhalation; ingestion skin absorption; skir and/or eye contact	; POISON. This material is an experimental carcinogen, mutagen, tumorigen, neoplastigen and teratogen. It is a probable carcinogen in humans and a known human mutagen. IARC Group 2A carcinogen. It is believed to cause bladder, skin and lung cancer. Exposure to it may damage the developing foetus. May cause reproductive damage. Skin, respiratory and eye irritant or burns.	Skin, eye, bladder, lung, reproductive	Yellow crystals or powder [found in cigarette smoke, coal tar, fuel exhaust gas and in many other sources] BP: 495 C
Benzo[b]fluoranthene	205-99-2	None established	TWA 0.1 mg/m3	TWA 0.2 mg/m3	None established	Inhalation; ingestion skin and/or eye contact	; No data were identified on the toxicity of benzo[b]fluoranthene to humans. Based on results of studies in animals, IARC concluded that benzo[b]fluoranthene is possibly carcinogenic to humans	Respiratory system, skin, bladder, kidneys	Off-white to tan powder
Benzo[k]fluoranthene	207-08-9	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory tract, gastrointestinal; fatal if swallowed, inhaled, absorbed through the skin; vomiting, nausea, diarrhea	Lungs, respiratory system	Yellow crystals BP: 480 C
Beryllium	7440-41-7 (metal)	TWA 0.002 mg/m ³	Ca C 0.0005 mg/m ³	TWA 0.002 mg/m ³ C 0.005 mg/m ³ (30 minutes) with a maximum peak of 0.025 mg/m ³	Ca [4 mg/m ³ (a: Be)]	s inhalation, skin and/or eye contact	Berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation eyes; dermatitis; [potential occupationa carcinogen]	Eyes, skin, respiratory system	Metal: A hard, brittle, gray-white solid. BP: 4532°F
Bis(2-ethylhexyl) phthalate	117-81-7	TWA 5 mg/m ³	TWA 5 mg/m ³ STEL 10 mg/m ³ (do not exceed during andy 15-minute work period)	TWA 5 mg/m ³	None established	inhalation, skin and/or eye contact	Irritation eyes, skin, nose, throat; affect the nervous system and liver; damage to male reproductive glands	Eyes, skin, nose, respiratory system, nervous system, reproductive system, liver	Colorless to light colored, thick liquid with slight odor
Butane	106-97-8	TWA 1000 ppm	TWA 800 ppm (1900 mg/m ³)	None established	None established	inhalation, skin and/or eye contact (liquid)	Drowsiness, narcosis, asphyxia; liquid: frostbite	central nervous system	Colorless gas with a gasoline-like or natural gas odor. BP: 31°F UEL: 8.4% LEL: 1.6% Flammable Gas
Cadmium	7440-43-9 (metal)	TWA 0.01 mg/m ³	Ca	TWA 0.005 mg/m ³	Ca [9 mg/m ³ (as Cd)]	s inhalation, ingestion	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	respiratory system, kidneys, prostate, blood	Metal: Silver-white, blue-tinged lustrous, odorless solid. BP: 1409°F

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Carbon Disulfide	75-15-0	TWA 1 ppm	TWA 1 ppm (3 mg/m ³) STEL 10 ppm (30 mg/m ³) [skin]	TWA 20 ppm C 30 ppm 100 ppm (30-minute maximum peak)	500 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Dizziness, headache, poor sleep, lassitude (weakness, exhaustion), anxiety, anorexia, weight loss; psychosis; polyneuropathy; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; kidney, liver injury; eye, skin burns; dermatitis; reproductive effects	central nervous system, peripheral nervous system, cardiovascular system, eyes, kidneys, liver, skin, reproductive system	Colorless to faint-yellow liquid with a sweet ether-like odor. BP: 116°F FLP: -22°F UEL: 50.0% LEL: 1.3% Class IB Flammable Liquid
Chlorobenzene	108-90-7	TWA 10 ppm	None established	TWA 75 ppm (350 mg/m ³)	1000 ppm	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, nose; drowsiness, incoordination; central nervous system depression; in animals: liver, lung, kidney injury	Eyes, skin, respiratory system, central nervous system, liver	Colorless liquid with an almond- like odor BP: 270°F Fl.P: 82°F UEL: 9.6% LEI: 1.304
Chloroethane	75-00-3	TWA 100ppm	Handle with caution in the workplace	TWA 1000 ppm (2600 mg/m ³)	3800 ppm [10%LEL]	inhalation, skin absorption (liquid), ingestion (liquid), skin and/or eye contact	Incoordination, inebriation; abdominal cramps; cardiac arrhythmias, cardiac arrest; liver, kidney damage	Liver, kidneys, respiratory system, cardiovascular system, central nervous system	Colorless gas or liquid (below 54°F) with a pungent, ether-like odor. BP: 54°F FLP: NA (Gas) -58°F (Liquid) UEL: 15.4% LEL: 3.8%
Chloroform	67-66-3	TWA 10 ppm	Ca STEL 2 ppm (9.78 mg/m ³) [60- minute]	C 50 ppm (240 mg/m ³)	Ca [500 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver; [potential occupational carcinogen]	Liver, kidneys, heart, eyes, skin, central nervous system	Colorless liquid with a pleasant odor BP: 143°F
Chromium	7440-47-3	TWA 0.5 mg/m ³ (metal and Cr III compounds) TWA 0.05 mg/m ³ (water-soluble Cr IV compounds) TWA 0.01 mg/m ³ (insoluble Cr IV compounds)	TWA 0.5 mg/m ³	TWA 1 mg/m ³	250 mg/m ³ (as Cr)	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin; lung fibrosis (histologic)	Eyes, skin, respiratory system	Blue-white to steel-gray, lustrous, brittle, hard, odorless solid. BP: 4788°F
Chrysene; Phenanthrene; Pyrene; Coal tar pitch volatiles	65996-93-2	TWA 0.2 mg/m3	Ca TWA 0.1 mg/m ³ (cyclohexane- extractable fraction)	TWA 0.2 mg/m ³ (benzene-soluble fraction)	Ca [80 mg/m ³]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue. Combustible Solids
cis-1,2-Dichloroethene	158-59-2	TWA 200 ppm	TWA 200 ppm	TWA 200 ppm	None established	inhalation, skin absorption, ingestion	Harmful if swallowed, inhaled, or absorbed through skin. Irritant. Narcotic. Suspected carcinogen	Skin	Colorless liquid BP: 60 C FLP: 4 C UEL: 12.8% LEL: 9.7 %
Copper	7440-50-8	TWA 0.2mg/m ³ (fume) 1 mg/m ³ (dusts and mists)	TWA 1 mg/m ³	TWA 1 mg/m ³	100 mg/m ³ (as Cu)	Inhalation, ingestion skin and/or eye contact	, Irritation eyes, respiratory system cough, dyspnea (breathing difficulty), wheezing	; Eyes, skin, respiratory system, liver, kidneys (increase(d) risk with Wilson's disease)	Noncombustible Solid in bulk form, but powdered form may ignite. BP: 4703°F
Dibenzo[a,h]anthracene	53-70-3	None established	None established	None established	None established	Inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin	Eyes, skin; skin photosensitization.	Colorless crystalline powder BP: 524°C

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Diesel Fuel #2	68476-34-6	None established	None established	Designated as an OSHA Select Carcinogen	None established	ingestion, skin and/or eye contact	Kidney damage; potential lung damage; suspected carcinogen; irritation of eyes, skin, respiratory tract; dizziness, headache, nausea chemical pneumonitis (from aspiration of liquid); dry, red skin; irritant contact dermatitis; eye redness, pain.	Eyes, skin, kidneys	Clear yellow brown combustible liquid; floats on water; distinct diesel petroleum hydrocarbon odor. BP: 356-716°F Fl.P: 154.4-165.2°F LEL: 0.6% UEL: 7.0%
Ethylbenzene	100-41-4	TWA 100 ppm STEL 125 ppm	TWA 100 ppm (435 mg/m ³) STEL 125 ppm (545 mg/m ³)	TWA 100 ppm (435 mg/m ³)	800 ppm [10%LEL]	inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with an aromatic odor. BP: 277°F Fl.P: 55°F UEL: 6.7% LEL: 0.8% Class IB Flammable Liquid
Fluoranthene	206-44-0	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; possible burns; heart and liver injury, pulmonary edema, respiratory arrest, gastrointestinal disturbances.	Heart, liver, lungs.	Yellow needles.
Fluorene	86-73-7	None established	None established	None established	None established	inhalation, ingestion, skin and/or eye contact	Irritation skin, digestive tract	Skin	White crystals BP: 563°F
Fuel Oil #2	68476-30-2	TWA 100mg/m ³ (aerosol and vapor, a total hydrocarbons)	None established s	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; CNS effects; nausea, vomiting, headache, cramping, dizziness, weakness, loss of coordination,, drowsiness; kidney, liver damage	Eyes, skin, CNS	Clear or yellow to red oily liquid, kerosene-like odor BP: 347 - 689 °F UEL:5-6% LEL: 0.7-1.0%
Gasoline	8006-61-9	TWA 300 ppm STEL 500 ppm	Carcinogen	None established	Ca [IDLH value has not been determined]	 Skin absorption; inhalation; ingestion; skin and/or eye contact 	Eyes and skin irritation, mucous membrane; dermatitis; headache; listlessness, blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis; possible liver, kidney damage [Potential occupational carcinogen]	Eyes, skin, respiratory system, CNS, Liver, Kidneys	Clear liquid with a characteristic odor, aromatic Fl.Pt = -45°F LEL = 1.4% UEL = 7.6% Classs 1B Flammable Liquid
Hexachlorobutadiene	87-68-3	TWA 0.02 ppm	Ca TWA 0.02 ppm (0.24 mg/m ³ , [skin]) None established	Ca [N.D.]	inhalation, skin absorption, ingestion, skin and/or eye contact	In animals: irritation eyes, skin, respiratory system; kidney damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, kidneys	Clear, colorless liquid with a mild, turpentine-like odor. BP: 419°F

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Hydrogen Sulfide	7783-06-4	TWA (10 ppm) STEL (15 ppm) (adopted values for which changes are proposed in the NIC)	C 10 ppm (15 mg/m ³) [10- minute]	C 20 ppm 50 ppm [10-minute maximum peak]	2 100 ppm	inhalation, skin and/or eye contact	Irritation eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, lassitude (weakness, exhaustion), irritability, insomnia; gastrointestinal disturbance; liquid: frostbite	; Eyes, respiratory system, central nervous system	Colorless gas with a strong odor of rotten eggs. BP: -77°F UEL: 44.0% LEL: 4.0% Flammable Gas
Indeno[1,2,3-cd]pyrene	193-39-5	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; possible human carcinogen (skin); weakness; affect liver, lung tissue, renal tissue; impariment of blood forming tissue	Skin ,	Fluorescent green-yellow crystalline solid BP: 536 C
Indeno[1,2,3-cd]pyrene	193-39-5	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; possible human carcinogen (skin); weakness; affect liver, lung tissue, renal tissue; impariment of blood forming tissue	Skin ,	Yellowish crystal solid BP: 536 C
Isopropylbenzene	98-82-8	TWA 50 ppm	TWA 50 ppm (245 mg/m ³) [skin]	TWA 50 ppm (245 mg/m ³) [skin]	900 ppm [10%LEL]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a sharp, penetrating, aromatic odor. BP: 306°F Fl.P: 96°F UEL: 6.5% LEI: 0.004
Kerosene	8008-20-6	TWA 200 mg/m ³	TWA 100 mg/m ³	None established	IDLH value has not been determined	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eyes, skin, respiratory system, central nervous system	Colorless to yellowish, oily liquid with a strong, characteristic odor. BP: 347-617°F FI.P: 100-162°F UEL: 5% LEL: 0.7% Class II Combustible Liquid
Lead	7439-92-1	TWA 0.05 mg/m ³	TWA (8-hour) 0.050 mg/m ³	TWA 0.050 mg/m ³	100 mg/m ³ (as Pb)	inhalation, ingestion skin and/or eye contact	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension	Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue	A heavy, ductile, soft, gray solid. BP: 3164°F Noncombustible Solid in bulk form

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Manganese	7439-96-5 (metal)	TWA 0.2 mg/m ³	TWA 1 mg/m ³ STEL 3 mg/m ³	C 5 mg/m ³	500 mg/m ³ (as Mn)	inhalation, ingestion	Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage	respiratory system, central nervous system, blood, kidneys	A lustrous, brittle, silvery solid. BP: 3564°F
Mercury (organo) alkyl compounds (as Hg)	7439-97-6	TWA 0.01 mg/m ³ STEL 0.03 mg/m ³ [skin]	TWA 0.01 mg/m ³ STEL 0.03 mg/m ³ [skin]	TWA 0.01 mg/m ³ C 0.04 mg/m ³	2 mg/m ³ (as Hg)	inhalation, skin absorption, ingestion, skin and/or eye contact	Paresthesia; ataxia, dysarthria; vision, hearing disturbance; spasticity, jerking limbs; dizziness; salivation; lacrimation (discharge of tears); nausea, vomiting, diarrhea, constipation; skin burns; emotional disturbance; kidney injury; possible teratogenic effects	Eyes, skin, central nervous system, peripheral nervous system, kidneys	Appearance and odor vary depending upon the specific (organo) alkyl mercury compound
Mercury compounds [except (organo) alkyls] (as Hg) Mercury	7439-97-6	TWA 0.025 mg/m ³ (elemental and inorganic forms)	Hg Vapor: TWA 0.05 mg/m ³ [skin] Other: C 0.1 mg/m3 [skin]	TWA 0.1 mg/m ³	10 mg/m ³ (as Hg)	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Eyes, skin, respiratory system, central nervous system, kidneys	Metal: Silver-white, heavy, odorless liquid. [Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.] BP: 674°F
Methyl tert-butyl ether (MTBE)	1634-04-4	TWA 50 ppm	No established REL	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, mucous membrane, respiratory; dizziness, nausea, headache, intoxication	Eyes, skin, mucous membrane, respiratory system, central nervous system	Colorless liquid BP: 55.2 C
Methylene Chloride	75-09-2	TWA 50 ppm, A3 - suspected human carcinogen	Ca	TWA 25 ppm STEL 125 ppm	Ca [2300 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numbness, tingle limbs; nausea; [potential occupational carcinogen]	Eyes, skin, cardiovascular system, central nervous system	Colorless liquid with a chloroform- like odor BP: 104°F UEL: 23% LEL: 13%
Metals Remediation Compound (MRC): Glycerol Tripolylactate Sorbitol Cysteinate Lactic Acid Glycerol	201167-72-8 444618-64-8 50-21-5 56-81-5	None established	None established	None established	None established	inhalation, ingestion skin absorption, skin and/or eye contact	, Irritation eyes, skin, respiratory tract	Behavioral (headache), gastrointestinal tract, reproductive system	Viscous amber gel/liquid; strong amine/sulfur odor
Naphtha (coal tar)	8030-30-6	None established	TWA 100 ppm (400 mg/m ³)	TWA 100 ppm (400 mg/m ³)	1000 ppm [10%LEL]	inhalation, ingestion skin and/or eye contact	, Irritation eyes, skin, nose; dizziness, drowsiness; dermatitis; in animals: liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Reddish-brown, mobile liquid with an aromatic odor BP: 320-428°F

ROUX ASSOCIATES, INC.

Fl.P: 100-109°F Class II Combustible Liquid

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Naphthalene	91-20-3	TWA 2 ppm STEL 15 ppm	TWA 10 ppm (50 mg/m ³) STEL 15 ppm (75 mg/m ³)	TWA 10 ppm (50 mg/m ³)	250 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Eyes, skin, blood, liver, kidneys, central nervous system ;	Colorless to brown solid with an odor of mothballs. BP: 424°F FLP: 174°F UEL: 5.9% LEL: 0.9%
n-Butylbenzene	104-51-8	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; CNS depression, lung damage; nausea, vomiting, headache, dizziness, weakness, loss of coordination, blured vision, drowsiness, confusion, disorientation	Eyes, skin,repiratory system, central nervous system	Colorless liquid with a sweet odor BP: 183 C Fl.P: 59 C UEL: 5.8% LEL: 0.8%
Nickel	7440-02-0 (Metal)	TWA 1.5 mg/m ³ (elemental) TWA 0.1 mg/m ³ (soluble inorganic compounds) TWA 0.2 mg/m ³ (insoluble inorganic compounds) TWA 0.1 mg/m ³ (Nickle subsulfide)	Ca TWA 0.015 mg/m ³	TWA 1 mg/m ³	Ca [10 mg/m ³ (as Ni)]	inhalation, ingestion skin and/or eye contact	, Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Nasal cavities, lungs, skin	Metal: Lustrous, silvery, odorless solid. BP: 5139°F
Nitrobenzene	98-95-3	TWA 1 ppm	TWA 1 ppm (5 mg/m ³) [skin]	TWA 1 ppm (5 mg/m ³) [skin]	200 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; anoxia; dermatitis; anemia; methemoglobinemia; in animals: liver, kidney damage; testicular effects	Eyes, skin, blood, liver, kidneys, cardiovascular system, reproductive system	Yellow, oily liquid with a pungent odor like paste shoe polish. BP: 411°F Fl.P: 190°F LEL(200°F): 1.8%
n-Propylbenzene	103-65-1	None established	None established	None established	None established	inhalation, ingestion skin and/or eye contact	Harmful if swallowed, Irritation eyes, skin, digestive tract, respiratory tract, central nervous system	Eyes, skin, central nervous system, respiratory system	colorless or light yellow liquid BP: 159 C Fl.P: 47 C UEL: 6% LEL: 0.8%
Petroleum hydrocarbons(Petroleum distillates)	8002-05-9	None established	TWA 350 mg/m ³ C 1800 mg/m ³ [15 min]	TWA 500 ppm (2000 mg/m ³)	1,100 [10% LEL]	Inhalation; ingestion skin and/or eye contact	; Irritation eyes, skin, nose, throat; dizziness, drowsiness, headache, nausea; dried/cracked skin; chemical pneumonitis	CNS, eyes, respiratory system, skin	Colorless liquid with a gasoline or kerosene-like odor BP: 86-460°F Fl. Pt = -40 to -86°F UEL: 5.9% LEL: 1.1% Flammable liquid
Phenol	108-95-2	TWA 5 ppm	TWA 5 ppm (19 mg/m ³) C 15.6 ppm (60 mg/m ³) [15-minute] [skin]	TWA 5 ppm (19 mg/m ³) [skin]	250 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose, throat; anorexia, weight loss; lassitude (weakness, exhaustion), muscle ache, pain; dark urine; cyanosis; liver, kidney damage; skin burns; dermatitis; ochronosis; tremor, convulsions, twitching	Eyes, skin, respiratory system, liver, kidneys	Colorless to light-pink, crystalline solid with a sweet, acrid odor. BP: 359°F UEL: 8.6% LEL: 1.8%

Table E-1.	Toxicological, Physical, and	Chemical Properties of Con	npounds Potentially Present :	at 149 Kent Avenue, Brooklyn, New York
		- · · · · · · · · · · · · · · · · · · ·	Free sector of the sector of t	

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
p-Isopropyltoluene	99-87-6	None established	None established	None established	None established	inhalation, skin absorption, eye contact	Irritation skin	CNS, skin	Colorless, clear liquid, sweetish aromatic odor BP: 350.8°F
Regenox Part A: Sodium Percarbonate Sodium Carbonate Monohydrate Silicic Acid Silica Gel	n 15630-89-4 5968-11-6 7699-11-6 63231-67-4	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation respiratory tract, mucous membranes, nose, throat, eyes, skin; gastrointestinal disturbance	s Respiratory system, eyes, skin	Odorless, white, powder [Note: Self-accelerating decomposition with oxygen release starts at 50° C]
Regenox Part B: Silicic Acid, Sodium Salt, Sodium Silicate; Silica Gel; Ferrous Sulfate; Water	1344-09-8 63231-67-4 7720-78-7 7732-18-5	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation respiratory tract, mucous membranes, nose, throat, eyes, skin, mouth, esophagus and stomach	s Respiratory system, eyes, skin, gastrointestinal tract	Odorless, Blue/Green, liquid [Note: Oxides of carbon and silicon may be formed when heated to decomposition]
sec-Butylbenzene	135-98-8	None established	None established	None established	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, upper airway; central nervous system, headache, dizziness; gastrointestinal disturbance	Respiratory system, central nervous system, eyes, skin;	Colorless liquid BP: 344°F FLP: 126°F UEL: 6.9% LEL: 0.8% Combustible liquid
Selenium	7782-49-2	TWA 0.2 mg/m ³	TWA 0.2 mg/m ³	TWA 0.2 mg/m ³	1 mg/m ³ (as Se)	inhalation, ingestion skin and/or eye contact	Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eyes, skin, respiratory system, liver, kidneys, blood, spleen	Amorphous or crystalline, red to gray solid. [Note: Occurs as an impurity in most sulfide ores.] BP: 1265°F
Silver	7440-22-4 (metal)	TWA 0.1 mg/m ³ (metal, dust, fumes) TWA 0.01 mg/m ³ (Soluble compounds, as Ag)	TWA 0.01 mg/m ³	TWA 0.01 mg/m ³	10 mg/m ³ (as Ag)	inhalation, ingestion skin and/or eye contact	, Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	Nasal septum, skin, eyes	Metal: White, lustrous solid BP: 3632°F
Slop Oil	69029-75-0	None established	None established	None established	None established	Inhalation; ingestion	Irritation eyes, skin, gastrointestinal tract	Eyes, skin, gastrointestinal tract	Clear light to dark amber liquid, with mild hydrocarbon odor. BP: >500°F FLP: 250°F
Sulfuric Acid	7664-93-9	TWA 0.2 mg/m ³	TWA 1 mg/m ³	TWA 1 mg/m ³	15 mg/m ³	inhalation, ingestion skin and/or eye contact	 Irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis; dental erosion; eye, skin burns; dermatitis 	Eyes, skin, respiratory system, teeth	Colorless to dark-brown, oily, odorless liquid. BP: 554°F Noncombustible Liquid
tert-Butylbenzene	98-06-6	None established	None established	None established	None established	inhalation, skin absorption, ingestion,	Eye and respiratory irritant; CNS depression; liver or kidney damage	Respiratory system, central nervous system, eyes, liver, kidney	Colorless liquid with an aromatic odor BP: 168 - 169 C Fl.P: 34 C UEL:5.6 % LEL: 0.8 %

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Tetrachloroethene	127-18-4	TWA 25 ppm STEL 100 ppm (STEL) listed as A3, animal carcinogen	Ca Minimize workplace exposure concentrations	TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm	Ca [150 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system	Colorless liquid with a mild, chloroform-like odor. BP: 250°F Noncombustible Liquid
Toluene	108-88-3	TWA 20 ppm	TWA 100 ppm (375 mg/m ³) STEL 150 ppm (560 mg/m ³)	TWA 200 ppm C 300 ppm 500 ppm (10- minute maximum peak)	500 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia paresthesia; dermatitis; liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a sweet, pungent, benzene-like odor. BP: 232°F Fl.P: 40°F UEL: 7.1% LEL: 1.1% Class IB Flammable Liquid
trans-1,2-Dichloroethene	156-60-5	TWA 200 ppm	None established	TWA 200 ppm STEL 250 ppm (skin)	None established	inhalation, skin absorption, ingestion, skin and/or eye contact	Narcotic. Irritation eyes, skin, respiratory tract, mucous membrane; CNS depression.	Respiratory tract, mucous membrane, eyes, skin, CNS	Colorless liquid with a fruity pleasant odor BP: 48°C Fl.P 6C UEL: 12.8% LEL: 9.7%
Trichloroethene	79-01-6	TWA 10 ppm STEL 25 ppm	Ca	TWA 100 ppm C 200 ppm 300 ppm (5- minute maximum peak in any 2 hours)	Ca [1000 ppm]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eyes, skin, respiratory system, heart, liver, kidneys , central nervous system	Colorless liquid (unless dyed blue) with a chloroform-like odor. BP: 189°F UEL(77°F): 10.5% LEL(77°F): 8%
Vinyl Chloride	75-01-4	TWA 1 ppm	Carcinogen	TWA 1 ppm C 5 ppm [15-minute]	Ca [IDLH value has not been determined]	e inhalation, skin, and/or eye contact (liquid)	Lassitude (weakness, exhaustion) abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Liver, central nervous system, blood, respiratory system, lymphatic system	Colorless gas or liquid (below 7°F) with a pleasant odor at high concentrations. BP: 7°F UEL: 33.0% LEL: 3.6% Elemendo Cas
Xylene (m, o & p isomers)	108-38-3, 95-47-6, 106-42-3	TWA 100 ppm (435 mg/m ³) STEL 150 ppm	TWA 100 ppm (435 mg/m ³)	TWA 100 ppm (435 mg/m ³)	900 ppm	Skin absorption, inhalation, ingestion skin, and/or eye contact	Irritation eyes, skin, nose, throat; , dizziness, excitement, drowsiness incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain dermatitis	Eyes, skin, respiratory , system, central nervous system, gastrointestinal tract, blood, liver, kidneys ;	Colorless liquid with an aromatic odor BP: 282°F, 292°F, 281°F Fl. Pt. 82°F, 90°F, 81°F LEL: 1.1%, 0.9%, 1.1% UEL: 7.0%, 6.7%, 7.0% Classs C Flammable Liquid
Zinc	7440-66-6	TWA 10 mg/m3 (Inhalable fraction)	None established	TWA 10 mg/m3 (for zinc oxide fume)	None established	skin and/or eye contact, inhalation, ingestion	Irritation eyes, skin, respiratory tract; gastrointestinal disturbances	Eyes, skin, respiratory s system	Bluish gray solid BP: 1664.6°F Flammable

Instrument	Action Level *	Level of Respiratory Protection/Action
PID	0 to <5 ppm (one minute sustained)	Level D *
PID	>5 to <50 ppm (one minute sustained)	Utilize APR (Level C)
PID	>50 to <100 ppm (one minute sustained)	Level B
PID	>100ppm	Stop work** (ventilate, apply foam)
CGI/H ₂ S Meter	<5%	Level D
CGI/H ₂ S Meter	>5% to <25%	Level B
CGI/H ₂ S Meter	>25%	Stop work**
CGI/CO Meter	>25%	Level B
CGI/CO Meter	>50%	Stop work** (ventilate area)
CGI/O ₂ Meter	<10% LEL, in excavation	Level D
	19.5% oxygen – 23.5%	Level D
CGI/O ₂ Meter	>10% LEL, in excavation	Allow to vent, apply foam**
	>23.5% oxygen	Stop work, Oxygen Enriched ATM**
Dust Monitor	$0 - 1.0 \text{ mg/m}^3$, 5-minutes average	Level D
Dust Monitor	>1.0 to 5.0 mg/m ³ , 5-minutes average	Level D – Institute dust suppression measures
Dust Monitor	5.0 to $>50 \text{ mg/m}^3$, 5-minute average	Level C – Institute dust suppression measures

TABLE E-2 ACTION LEVELS FOR WORKER BREATHING ZONE

Note: Action levels are based on above background levels.

* Instrument readings will be taken in the breathing zone (BZ) of the workers, unless otherwise indicated.

** Suspend work in immediate area. Conduct air monitoring periodically to determine when work can continue. Implement mitigative measures.

FIGURES

- E-1. Site Location Map
- E-2. Hospital Route Map





Figure G-2. Directions to Woodhull Medical Center

760 Broadway Brooklyn, New York 11206

- Start at 149 Kent Avenue, Brooklyn, New York
- Head northeast on Kent Avenue toward North 6th Street
- Turn Right onto North 7th Street
- Turn Right onto Wythe Avenue
- Turn Left onto Metropolitan Avenue
- Turn Right onto Union Avenue
- Turn Left onto Broadway
- Arrive at Woodhull Medical Center on your right.

ATTACHMENTS

- E-1. Activity Hazard Analysis
- E-2. Heat and Cold Stress Guidelines
- E-3. Medical Data Form
- E-4. Community Air Monitoring Plan
- E-5. Health and Safety Briefing/Tailgate Meeting Form
- E-6. Accident Report and Investigation Form
- E-7. Acord Form
- E-8. OSHA 300
- E-9. Job Safety and Health Protection Poster

ATTACHMENT E-1

Activity Hazard Analysis

JOB SAFETY ANALYSIS Ctrl. No. 563 DATE 9/10/12 REVISED P. ISA TYPE CATEGORY: WORK TYPE: WORK ACTIVITY (Description):	PAGE 1 of 2
ISA TYPE CATEGORY: WORK TYPE: WORK ACTIVITY (Description):	
WORKACHVIII (Description).	
KENT & WYTHE OWNERS LLC Drilling Hollow Stem Auger Soil Borings /	/Well Installation
DEVELOPMENT TEAM POSITION / TITLE REVIEWED BY: F	POSITION / TITLE
Wendy Monterosso Senior Hydrogeologist Joseph Gentile CHS	HSM
David Bligh Project Engineer	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT	
□ LIFE VEST □ GOGGLES □ AIR PURIFYING RESPIRATOR □	GLOVES: Leather, Nitrile
HARD HAT GACE SHIELD SUPPLIED RESPIRATOR	and cut resistant
$\square LIFELINE / BODY HARNESS \square HEARING PROTECTION: (as \square PPE CLOTHING: Fluorescent \square DISCONTING: Fluorescent □ DISCONTING: $	OTHER: Insect Repellant,
SAFETY GLASSES needed) reflective vest or high visibility	sunscreen (as needed)
SAFETT SHOES. Composite-foe of cloining	
REQUIRED AND / OR RECOMMENDED EQUIPMENT	
Truck-Mounted Drilling Rig, saw, Hand Tools, Photoionization Detector, MultiGas meter (or equivalent).Interface Probe, 20 lb, fire extir	tinguisher. Safety Cones &
Flags, "Work Area" Signs (if needed)	8,,
COMMITMENT TO SAFETY - All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs th	s throughout the day.
"SHOW ME YOUR HANDS"	
Driller and helper should show that hands are clear from controls and moving parts	
JOB STEPS ² POTENTIAL HAZARDS ³ CRITICAL ACTION	ONS
1. Mobilization of drilling rig 1a. Contact: equipment/property 1a. The drill rig's tower/derrick will be lower	wered and secured prior to
damage mobilization.	····· F····
1a. If personnel moves into the path of the du	e drilling rig, the drilling rig
will be stopped until the path is again cle	clear.
1a. Use a spotter.	
1a. Use caution while advancing the drilling	ng rig.
1a. Inspect the driving path for uneven terrain	Talli.
ice puddles snow etc.) and obstruction	in, weather-related hazards (i.e.,
equipment.	for the model and
1b. Do not climb over stored materials/equip	uipment; walk around.
Practice good housekeeping.	
1b. Use established pathways and walk on st	stable, secure ground.
2. Setting up drilling rig/work area 2a. Fall: slip/trip/fall hazards 2a. See 1b.	
associated with drilling equipment 2a. Equipment and tools will be staged in a c	a convenient, stable, and
2a. Equipment and tools will be stored at the	the lowest point of potential
energy and out of the walkway and imme	mediate work area (i.e. tools
should not be propped against walls or no	r nearby equipment or
vehicles).	
2a. Equipment and tools that are not anticipa	ipated to be used will be
returned to an appropriate storage area th	that is out of the immediate
2a Ensure nower cords and water lines are g	e grouped when used within
the work area.	e grouped when used whatin
2b. Exertion: lifting 2b. Use proper body positioning and lifting t	g techniques; keep back
straight, lift with legs, keep load close to	to body, and never reach with
a load.	
2b. Ensure that loads are balanced to reduce	ce the potential for muscle
Strain.	l are required when lifting
objects over 50 lbs or when the shape ma	makes the object difficult to
lift.	
3. Raising tower/derrick of drilling rig 3. Contact: overhead hazards 3. Prior to raising the tower/derrick, the are	area above the drilling rig will
be inspected for wires, tree limbs, piping	ng, or other structures, that
could come in contact with the rig's towe	wer and/or drilling rods or
tools.	
5. The tower/derrick must not be raised ben unless approved by the Dowy DM	beneath overnead power lines
3 Maintain a safe distance from overhead s	d structures
3. Do not move the rig while the tower/derr	errick is raised.

 ¹ Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
 ² A hazard is a potential danger. Break hazards into five types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards.

Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe 3 operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

¹ JOB STEPS	² POTENTIAL HAZARDS		³ CRITICAL ACTIONS			
4. Drilling activity	4a.	Contact: flying debris	4a.	Use the proper PPE (especially hand, eye, ear and respiratory		
				protection).		
			4a.	Be aware of and avoid potential lines of fire.		
	4b.	Exposure: noise and dust	4b.	Wet borehole area with sprayer to minimize dust.		
			4b.	Stand upwind and keep body away from rig.		
			4b.	No open flames/heat sources.		
	4c.	Caught: limb/extremity pinching;	4c.	Use proper PPE.		
		abrasion/crushing	4c.	Always wear leather gloves when making connections and using		
				hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling		
				cutting tools.		
			4c.	Inspect the equipment prior to use for potential pinch points.		
			4c.	lest all emergency shutdown devices prior to drilling to ensure		
			4 -	proper working condition.		
			40.	demograd or blunt		
			40	Ensure all javalry is removed loose clothing is secured and DDE is		
			40.	secured close to the body		
			4c	All non-essential personnel should stay away from the immediate		
			чс.	work area: position body out of the line-of-fire of equipment		
			4c	Drillers and helpers will understand and use the "Show Me Your		
				Hands" Policy.		
	4d.	Contact: equipment imbalance	4d.	Drillers will advance the borehole with caution to avoid causing the		
		during advancement drill		rig to become imbalanced and/or tip.		
		equipment	4d.	The blocking and leveling devices used to secure the rig will be		
				inspected by drillers and Roux personnel regularly to see if shifting		
				has occurred.		
			4d.	In addition, personnel and equipment that are non-essential to the		
				advancement of the borehole will be positioned away from the rig at		
				a distance that is at least as far as the boom is high. For example, if		
				the boom is ten feet high, non-essential personnel and equipment will		
				be positioned at least ten feet away from the rig in case the rig tips		
				over.		
	4e.	Exposure: inhalation of	4e.	Air monitoring using a calibrated photoionization detector (PID) will		
		contamination		be used to periodically monitor the breathing zone of the work area.		
			4e.	The Action Level for breathing zone air is five parts per million		
			4.5	(sustained) as detected by the PID.		
			4e.	in a reading of >5ppin is recorded, the Roux field personnel must		
				the area of elevated readings and inform the Poux DM of the		
				condition. The Roux PM will then recommend additional		
				appropriate precautions in accordance with the site specific health		
				and safety plan.		
	4f.	Fall: slip/trip/fall hazards	4f.	See 2a.		
5. Decontaminate equipment	5a.	Exposure to contamination (e.g.,	5a.	Wear chemical-resistant disposable gloves and safety glasses.		
· 1 · F · · ·		Separate Phase Hydrocarbons	5a.	Use an absorbent pad to clean spills.		
		(SPH), contaminated groundwater,				
		vapors)				
	5b.	Exposure to chemicals in cleaning	5b.	See 5a.		
		solution including ammonia				

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3 Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

IOD CAPETY ANAL VOIC				NEW			
JUB SAFETY ANALYSIS	Ctrl. No. 564	DATE 9/10)/12	REVISED	PAGE 1 of 2		
JSA TYPE CATEGORY:	WORK TYPE:		WORK ACTIVITY	(Description):			
KENT & WYTHE OWNERS LLC	Monitoring Well		Groundwater Gauging and Sampling				
	Gauging/Sampling						
DEVELOPMENT TEAM	POSITION / TIT	LE	REVIEW	ED BY:	POSITION / TITLE		
Wendy Monterosso	Senior Hydrogeologist		Joseph Gentile		CHSM		
David Bligh	Project Engineer						
REQU	IRED AND / OR RECOMM	IENDED PERS	SONAL PROTECT	VE EQUIPMENT			
LIFE VEST	GOGGLES		AIR PURIFY	ING RESPIRATOR	GLOVES: Leather, Nitrile		
HARD HAT	FACE SHIELD		SUPPLIED R	ESPIRATOR	and cut resistant		
LIFELINE / BODY HARNESS	HEARING PROTEC	TION	PPE CLOTH	NG: Fluorescent	OTHER: Insect Repellant,		
X SAFETY GLASSES	SAFETY SHOES: C	omposite-toe	reflective vest	or high visibility	sunscreen (as needed)		
	DECUIDED AND /		Clouning	NT			
Paguirad Equipment: Safety cones, couti	on tana Interface probe and/	or Water level m	eter seissors tubing	outtor 20 lb fire optin	michor		
Equipment as needed: Peristaltic nump a	ppropriate power sources tub	ing master flex	hailers poly rope 5	5-gallon drums: bucke	ts		
Tools as needed: socket wrench, screw dr	river, crow bar, mallet	ing, muster nex,	, buildis, poly tope, s	ganon drums, succe			
COMMITMENT TO SAFET	FY - All personnel onsite will	actively particip	ate in SPSA perform	ance by verbalizing SI	PSAs throughout the day.		
¹ JOB STEPS	² POTENTIAL HAZA	ARDS		³ CRITICAL AC	TIONS		
1. Open/close well	1a. Exertion: muscle stra	in	1a. Use proper li	fting techniques; keep	back straight, lift with legs, keep		
-			load close to	body, and never reach	with a load.		
			1a. Ensure that le	oads are balanced to re	duce the potential for muscle		
			strain.				
			1a. Two people a	re required when liftir	ng objects over 50 lbs or when the		
	11 0 14 2 1 24	1	shape makes	the object difficult to			
	1b. Caught: pinch points	associated	1b. Wear leather	gloves when working	with well cover and hand tools.		
	and working with har	nd tools	ib. Use proper to	ons (ratellet and pry ba	in for wen cover) and inspect before		
	and working with ha	and working with hand tools		ngers under well cover			
	1c. Exposure: potential h	azardous	1c. No open flan	es/heat sources.			
	vapors		1c. Allow well to vent after opening it and before sampling activities begin				
			to minimize exposure to vapors.				
			1c. Work on the	upwind side of well.			
	1d. Contact with traffic		1d. Identify potential traffic sources.				
			Id. wear approp	nate PPE including his	gn visibility clothing of reflective		
			1d. Delineate wo	rk area with 42 inch sa	afety cones and/or other barriers.		
			Position vehi	cle to protect against o	ncoming traffic. Use caution tape		
			to provide a more visible delineation of the work area.				
			1d. Face traffic,	naintain eye contact w	vith oncoming vehicles, and		
			establish a sa	te exit route.			
2. Gauge well	2a. Contact with contami	nation (e.g.,	2a. See Ic.	al registent disposable	gloves and safety glasses when		
	(SPH) contaminated	groundwater.	za. wear enemie gauging well	ai-resistant disposable	gioves and safety glasses when		
	vapors)	,	2a. Use an absor	bent pad to clean prob	е.		
	2b. Contact with traffic		2b. See 1d.				
3. Purge and sample well using most	3a. Exposure: contamina	tion (e.g.,	3a. Wear chemic	al-resistant disposable	gloves and safety glasses when		
appropriate method	SPH, contaminated g	roundwater,	gauging well				
	vapors)		3a. Insert and ren	nove tubing or bailers	slowly to avoid splashing.		
			3a. Use an absor	bent pad to clean spills	s (see 1c).		
	3b. Exertion: muscle stra	in while	3b. Use proper li 3b. Use mechani	tting techniques when	multiple trips to carry equipment.		
	carrying equipment		(see 1a).	cal assistance of make	multiple trips to early equipment		
	3c. Exposure: exposure to	O	3c. Wear chemic	al-resistant disposable	gloves, cut-resistant gloves and		
	preservatives and cor	taminated	safety glasses	when handling sampl	es.		
	liquids		3c. Open and fill	sample jars slowly to	avoid splashing and contact with		
			preservatives				
	3d. Contact: cuts by glass	s or sharp	3d. Wear cut-res	stant (i.e., Kevlar) glo	ves under chemical-resistant gloves		
	3a Contact with traffic		3a Sec 1d	ig vOA viais or when	using cutting tools.		
	3f Electrical bazards		3f Use contion	when attaching equiper	pent to nower sources		
	51. Electrical fiazards		3f. Avoid touchi	ng battery terminals	ient to power sources.		
			3f. Position batte	ries away from water	source.		
				in any monit mater			

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	¹ JOB STEPS		² POTENTIAL HAZARDS		³ CRITICAL ACTIONS
4.	Transfer purge water from 5- gallon buckets to 55-gallon drums (if necessary); move drums to storage area- See waste	4a.	Exposure to contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater)	4a. 4a.	Do not overfill buckets or drums and pour liquids in such a manner that they do not splash. Properly dispose of used materials/PPE in provided drums in designated drum storage area (see 3a).
	disposal/storage JSA	4b.	Exertion: muscle strain from lifting/carrying 5-gallon buckets	4b.	Use proper lifting techniques when carrying buckets. Do not overfill buckets (see 3b).
		4c.	Caught: pinch points associated with handling drum lid	4c.	Ensure that fingers are not placed under the lid of the drum. Wear leather gloves and use proper tools (ratchet) while sealing drum lid.
		4d.	Fall: spilled purge water	4d.	Clean up any spills using absorbent pads.
5.	5. Decontaminate interface probe		Exposure to contamination (e.g., SPH, contaminated groundwater, vapors)	5a.	See 3a.
		5b.	Exposure to chemicals in cleaning solution including ammonia	5b.	See 3a.

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					NEW		
JOB SAFETY ANALYSIS	Ctrl. No. 565	DATE 9/10/1	2		REVISED	PAGE 1 of 1	
JSA TYPE CATEGORY:	WORK TYPE:		WORK ACTIVITY (Description):				
KENT & WYTHE OWNERS LLC	ENT & WYTHE OWNERS LLC Waste Disposal Oversight			Movement of 55-gallon Drums			
DEVELOPMENT TEAM	POSITION / TIT	TLE		REVIEW	ED BY:	POSITION / TITLE	
Wendy Monterosso	Senior Hydrogeologist		Jose	eph Gentile		CHSM	
David Bligh	Project Engineer			-			
REQU	IRED AND / OR RECOMM	IENDED PERSO	NAL	PROTECTI	VE EQUIPMENT	•	
□ LIFE VEST ⊠ HARD HAT □ LIFELINE / BODY HARNESS ⊠ SAFETY GLASSES	□ GOGGLES □ FACE SHIELD □ HEARING PROTECT □ SAFETY SHOES: Co steel toe boots/shoes	ΓΙΟΝ (as needed) omposite-toe or		AIR PURIFY SUPPLIED I PPE CLOTH reflective ves	YING RESPIRATOR RESPIRATOR HING: Fluorescent st or high visibility	 ☑ GLOVES: Leather, Nitrile ☑ OTHER: Insect Repellant, sunscreen (as needed) 	
	REOUIRED AND /	OR RECOMME	NDEI) EOUIPME	NT		
Drum Cart	ind genied in d /	on in contract					
COMMITMENT TO SAFETY - All pe	rsonnel onsite will actively pa	articipate in SPSA	perfor	mance by ver	balizing SPSAs throug	whout the day.	
¹ JOB STEPS	² POTENTIAL HAZ	ARDS			³ CRITICAL AC	CTIONS	
 Inspect 55-gal drums for proper condition, labeling 	1a. Exposure: if drum cor material, if the drum i the drum has hazardou stuck on the outside o	ntains hazardous s damaged; or if us materials f the drum	1a. 1a.	If drum is r transport ac inform him activities u manager. If drum is p poor condit	not properly labeled, d ctivities. Immediately //her of drum situation ntil further actions are properly labeled, but lo tion, place drum in an	o not open and cease all drum contact Project Manager and . Do not continue drum transport determined by the project eaking, improperly sealed or in a over-pack drum.	
	 Caught: drum could p damaged 	otentially be	1b. 1b.	Use proper If damaged	PPE (leather gloves).		
2. If 55-gal drum is properly labeled and in adequate condition, transfer onto a drum cart	2a. Exertion: muscle strai drums)	n (handling	2a 2a. 2a. 2a.	Use proper straight, lif a load. Ensure that strain. Two people objects ove lift. Never mov- slightly lear	body positioning and t with legs, keep load t loads are balanced to e or a mechanical liftin er 50 lbs or when the s e drum by picking it u n the drum over and re	lifting techniques; keep back close to body, and never reach with reduce the potential for muscle ng aid are required when lifting hape makes the object difficult to p. If movement is necessary, oll it on its edge.	
	2b. Caught: pinch points a handling the drum	associated with	2b. 2b.	Use proper Never put h cart or grou	PPE (leather gloves a hand or foot in a position.	nd steel-toed boots). Ion between the drum and the drum	
 Push drum cart with 55-gal drum to appropriate pre-determined drum storage area 	3a. Exertion: muscle strai cart)	n (pushing drum	3a. 3a.	See 2a. Inspect the distributed.	wheels of the cart and	ensure that the load is evenly	
	3b. Caught: dropping of the second se	he drum	3b. 3b. 3b. 3b.	Determine Remove all Maintain a Ensure that	transport route before l obstructions from tra straight route on solic t the drum is properly	actually moving the drum. nsport route prior to transport. l, level ground. secured before transport.	
4. Place 55-gal drum in drum storage area or on lift gate of disposal truck	4a. Exertion: muscle strai drums)	n (handling	4a.	See 2a.			
	4b. Caught: pinch points a handling the drum	associated with	4b.	See 2b.			

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stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards. Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating 3 procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

		1			1	
JOB SAFETY ANALYSIS	Ctrl. No. 566	DATE 9	/10/12	\square REVISED	PAGE 1 of 2	
JSA TYPE CATEGORY:	WORK TYPE:	<i>bb</i>	WORK ACTIVITY (Description):			
KENT & WYTHE OWNERS LLC	Drilling		Geoprobe Soil Borings / Well Installation			
DEVELOPMENT TEAM	POSITION / TITL	E	REVI	EWED BY:	POSITION / TITLE	
Wendy Monterosso	Senior Hydrogeologist		Joseph Gentile	e	CHSM	
David Bligh	Project Engineer					
REQUI	RED AND / OR RECOMM	ENDED PE	RSONAL PROT	ECTIVE EQUIPMENT		
☐ LIFE VEST ⊠ HARD HAT ☐ LIFELINE / BODY HARNESS ⊠ SAFETY GLASSES	 ☐ GOGGLES ☐ FACE SHIELD ☑ HEARING PROTECTION: (as needed) ☑ SAFETY SHOES: Composite- 		□ AIR PURIFYING RESPIRATOR ☑ GLOVES: Leather, Nitril and cut resistant □ SUPPLIED RESPIRATOR ☑ GLOVES: Leather, Nitril and cut resistant ☑ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing ☑ OTHER: Insect Repellant			
	REOUIRED AND /	OR RECOM	IMENDED EOU	IPMENT		
Truck-Mounted Drilling Rig, saw, Hand T Flags, "Work Area" Signs	Fools, Photoionization Detect	or, MultiGas	meter (or equival	ent),Interface Probe, 20 lb	. fire extinguisher, Safety Cones &	
COMMITMENT TO SAFETY	7 - All personnel onsite will a	ctively parti	cipate in SPSA pe	rformance by verbalizing	SPSAs throughout the day.	
	"SHO	W ME YC	UR HANDS"			
Driller a	nd helper should show t	hat hands a	are clear from o	controls and moving pa	arts	
¹ JOB STEPS	² POTENTIAL HAZA	RDS		³ CRITICAL AC	TIONS	
1. Mobilization of drilling rig	1a. Contact: equipment/property damage 1b. Fall: slip/trip/fall hazards		 1a. The drill rig's tower/derrick will be lowered and secured prior to mobilization. 1a. If personnel moves into the path of the drilling rig, the drilling rig will be stopped until the path is again clear. 1a. Use a spotter. 1a. Use caution while advancing the drilling rig. 			
			 1a. Inspect the driving path for uneven terrain. 1b Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established externa edemals on stable ensure ensured. 			
2 Setting up drilling rig/work area	2a Fall: slip/trip/fall haz	ards	1b. Use established pathways and walk on stable, secure ground.			
2. Setting up unning fig/work area	associated with drilli equipment and tools	ng	 2a. See 10. 2a. Equipmen manner. 2a. Equipmen should not 2a. Equipmen to an appr 2a. Ensure po work area. 	t and tools will be staged i t and tools will be stored a l out of the walkway and in be propped against walls t and tools that are not ant opriate storage area that is wer cords and water lines	n a convenient, stable, and orderly t the lowest point of potential mmediate work area (i.e. tools or nearby equipment or vehicles). icipated to be used will be returned out of the immediate work area. are grouped when used within the	
	2b. Exertion: lifting		 2b. Use prope straight, li a load. 2b. Ensure tha strain. 2b. Two peopl objects ov lift. 	r body positioning and lift ft with legs, keep load clos at loads are balanced to red le or a mechanical lifting a er 50 lbs or when the shap	ing techniques; keep back ie to body, and never reach with luce the potential for muscle id are required when lifting e makes the object difficult to	
3. Raising tower/derrick of drilling rig	3. Contact: overhead ha	zards	 Prior to ra be inspect could com tools. The tower unless app Maintain a Do not mod 	ising the tower/derrick, the ed for wires, tree limbs, pij e in contact with the rig's to /derrick must not be raised proved by the Roux PM. a safe distance from overho ove the rig while the tower.	area above the drilling rig will ping, or other structures, that tower and/or drilling rods or beneath overhead power lines ead structures. /derrick is raised.	

Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe 3 operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

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¹ JOB STEPS	² POTENTIAL HAZARDS	³ CRITICAL ACTIONS			
4. Drilling activity	4a. Contact: flying debris	 Use the proper PPE (especially hand, eye, ear and respiratory protection). 			
		4a. Be aware of and avoid potential lines of fire.			
	4b. Exposure: noise and dust	4b. Wet borehole area with sprayer to minimize dust.			
		4b. Stand upwind and keep body away from rig.			
		4b. No open flames/heat sources.			
	Caught: limb/extremity pinching;	4c. Use proper PPE.			
	abrasion/crushing	4c. Always wear leather gloves when making connections and using hand			
		tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools.			
		4c. Inspect the equipment prior to use for potential pinch points.			
		4c. Test all emergency shutdown devices prior to drilling.			
		 Inspect drill head for worn surface or missing teeth; replace if damaged or blunt. 			
		 Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 			
		 All non-essential personnel should stay away from the immediate work area; position body out of the line-of-fire of equipment. 			
		 The emergency stop switches on the rig should be tested to ensure proper working condition. 			
		4c. Drillers and helpers will understand and use the "Show Me Your Hands" Policy			
	4d. Contact: equipment imbalance	4d. Drillers will advance the borehole with caution to avoid causing the			
	during advancement drill	rig to become imbalanced and/or tip.			
	equipment	4d. The blocking and leveling devices used to secure the rig will be			
		inspected by drillers and Roux personnel regularly to see if shifting			
		has occurred.			
		4d. In addition, personnel and equipment that are non-essential to the			
		advancement of the borehole will be positioned away from the rig at			
		the boom is ten feet high non-essential personnel and equipment			
		will be positioned at least ten feet away from the rig in case the rig			
		tips over.			
	4e. Exposure: inhalation of	4e. Air monitoring using a calibrated photoionization detector (PID) will			
	contamination	be used to periodically monitor the breathing zone of the work area.			
		4e. The Action Level for breathing zone air is five parts per million (sustained) as detected by the PID			
		4e. If a reading of >5ppm is recorded, the Roux field personnel must			
		temporarily cease work, instruct all Site personnel to step away from			
		the area of elevated readings and inform the Roux PM of the			
		condition. The Roux PM will then recommend additional			
		appropriate precautions in accordance with the site specific health			
		and safety plan.			
5 Decontominate	41. Fall: slip/trip/fall hazards	4I. See 2a.			
5. Decontaminate equipment	Ja. Exposure to contamination (e.g., Separate Phase Hydrocarbons	5a. Wear chemical-resistant disposable gloves and safety glasses.			
	(SPH), contaminated	sa. Use an absorbent pau to crean spills.			
	groundwater, vapors)				
	5b. Exposure to chemicals in	5b. See 5a.			
	cleaning solution including				
	ammonia				

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JOB SAFETY ANALYSIS	Ctrl. No. 567	DATE 09	9/10/12			NEW REVISED		PAGE 1 of 1
JSA TYPE CATEGORY:	WORK TYPE		WORK ACTIVITY (Description):			ption):		
KENT & WYTHE OWNERS LLC	General		Site Mobilization/Demobilization					
DEVELOPMENT TEAM	POSITION / TITLE		bitt	DEVIEWED DV.			POSITION / TITLE	
Wendy Monterosso	Senior Hydrogeologist		Iose	KEVIEWED B1:			СН	ISM
David Bligh	Project Engineer		3030	Joseph Gentile			СПЗМ	
David Bligh	IDED AND / OB DECOM	TENDED DEI	DEON	AL DROTECTI		MIDMENT		
	JIKED AND / OK KECOMMENDED PE.			AID DUDIEVING	CDES			CLOVES: Leather Nitrile
M HARDHAT	\Box FACE SHIFLD			SUPPLIED RES	D KES PIR A'	TOR		and cut resistant
\square LIFELINE / BODY HARNESS	HEARING PROTECTI	ION· (as	PPE CLOTHING: Fluorescent			orescent		OTHER: Insect Repellant
\boxtimes SAFETY GLASSES	needed)	(us		reflective vest or	high v	visibility		sunscreen (as needed)
—	SAFETY SHOES: Cor	nposite-toe		clothing	0	2		
	or steel toe boots/shoes			C C				
	REQUIRED AND /	OR RECOM	IMENI	DED EQUIPMEN	NT			
Safety cones and flags, 20 lb. fire extinguisher, "Work Area" signs (if needed based on task), vehicle tire chocks, caution tape, HASP								
COMMITMENT TO SAFETY - All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.							s throughout the day.	
¹ JOB STEPS	² POTENTIAL HAZAI	RDS		³ CRITICAL ACTIONS				
1. Mobilize/demobilize and establish	1a. Fall: tripping/falling du	e to uneven	1a.	Inspect walking p	path fo	or uneven terr	ain, w	veather-related hazards (i.e., ice,
work area	terrain, weather condition	ons, and	1	puddles, snow, et	tc.), ar	nd obstruction	is pric	or to mobilizing equipment.
	Site	bred at the	1a.	Do not climb ove	er store	ed materials/e	quipr	nent; walk around. Practice
	She		19	Use established r	ng. athwa	we and walk	on sta	ble secure ground
	1b Contact: with traffic (in	cluding any	1h	When first arrivit	ng ons	ite park vehi	les in	designated parking space
	unintended movement	of the work	10.	and/or out of the	way le	ocations. Use	e park	ing brake on all vehicles and
	truck), Contact / Interfe	rence with		tire chocks on wo	ork tru	cks and traile	ers.	
	Other Site Activities		1b. Check in with with Site Manager/Supervisor to ensure proper					
			coordination with other site activities.					
			1b. Identify potential traffic sources.					
			1b. Wear appropriate PPE including high visibility clothing or reflective vest.					
			Ib.	Use a spotter whi	ile mo	ving work ve	hicles	; plan ahead to avoid backing
			1b	Delineate work a	y. rea wi	th cones flag	re car	tion tane and/or other harriers
			1b.	Position "Work A	Area"	signs at site e	ntrand	ces.
			1b. Position largest vehicle to protect against oncoming traffic.					
			1b. Face traffic, maintain eye contact with oncoming vehicles, use a spotter,					
			and establish a safe exit route.					
			1b.	Chock wheels of	work	truck and oth	er sup	pport equipment on wheels and
				engage parking b	rake i	f possible.		
	1c. Exertion: during movin	g of	1c.	Use proper body	positi	oning and lift	ing te	chniques; keep back straight,
	equipment(cones and si	gnage) into	1.0	Lift with legs, kee	ep loac	1 close to bod	y, and	he netential for muscle strain
	1d Exposure: to biological	hazarda	1c.	Inspect area to av	are ba	and the set of the set		al hazarda
	ticks bees/wasps poise	n ivy	1d.	Be aware of pede	olu cu	s walking net	dogs	and keep distance
	insects dogs etc. (ticks	are most	1d.	Wear long sleeve	ed clof	hing to protect	t skir	and apply insect repellant
	active any time the tem	perature is	10.	containing DEET	wher	working in o	overgi	rown areas of the Site.
	above freezing from Ma	arch to	1d.	Personnel shall e	xamin	e themselves	for ti	cks.
	November)		1d.	If skin comes in a	contac	t with poison	ivy, v	wash skin thoroughly with soap
l				and water as soor	n as po	ossible.		
	1e. Exposure: to sun, possi	bly causing	1e.	Wear sunscreen v	with a	n SPF of at le	ast 15	5 whenever 30 minutes or more
I	sunburn			of exposure is ex	pected	1.		
	It. Noise hazards (active a	uto repair	1f.	Wear hearing pro	otectio	n if necessary	/.	
	compressor noise)	is and						

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ATTACHMENT E-2

Heat and Cold Stress Guidelines

Heat Stress

Heat stress is a significant potential hazard and can be associated with heavy physical activity and/or the use of personal protective equipment (PPE) in hot weather environments.

Heat cramps are brought on by prolonged exposure to heat. As an individual sweats, water and salts are lost by the body resulting in painful muscle cramps. The signs and symptoms of heat cramps are as follows:

- severe muscle cramps, usually in the legs and abdomen;
- exhaustion, often to the point of collapse; and
- dizziness or periods of faintness.

First aid treatment includes moving to a shaded area, rest, and fluid intake. Normally, the individual should recover within one-half hour. If the individual has not recovered within 30 minutes and the temperature has not decreased, the individual should be transported to a hospital for medical attention.

Heat exhaustion may occur in a healthy individual who has been exposed to excessive heat. The circulatory system of the individual fails as blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion are as follows:

- rapid and shallow breathing;
- weak pulse;
- cold and clammy skin with heavy perspiration;
- skin appears pale;
- fatigue and weakness;
- dizziness; and
- elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids and electrolytes. If the individual has not recovered within 30 minutes and the temperature has not decreased, the individual should be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a **MEDICAL EMERGENCY**, requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- dry, hot, red skin;
- body temperature approaching or above 105°F;
- large (dilated) pupils; and
- loss of consciousness the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility.

Heat stress (heat cramps, heat exhaustion, and heat stroke) is a significant hazard if any type of protective equipment (semi-permeable or impermeable) which prevents evaporative cooling is worn in hot weather environments. Local weather conditions may require restricted work schedules in order to adequately protect personnel. The use of work/rest cycles (including working in the cooler periods of the day or evening) and training on the signs and symptoms of heat stress should help prevent heat-related illnesses from occurring. Work/rest cycles will depend on the work load required to perform each task, type of protective equipment, temperature, and humidity. In general, when the temperature exceeds 88°F, a 15 minute rest cycle will be initiated once every two hours. In addition, potable water and fluids containing electrolytes (e.g., Gatorade) will be available to replace lost body fluids.

Cold Stress

Cold stress is a danger at low temperatures and when the wind-chill factor is low. Prevention of cold-related illnesses is a function of whole-body protection. Adequate insulating clothing must be used when the air temperature is below 40°F. In addition, reduced work periods followed by rest in a warm area may be necessary in extreme conditions. Training on the signs and symptoms of cold stress should prevent cold-related illnesses from occurring. The signs and symptoms of cold stress include the following:

- severe shivering;
- abnormal behavior;

- slowing of body movement;
- confusion;
- weakness;
- stumbling or repeated falling;
- inability to walk;
- collapse; and/or
- unconsciousness.

First aid requires removing the victim from the cold environment and seeking medical attention immediately. Also, prevent further body heat loss by covering the victim lightly with blankets. Do not cover the victim's face. If the victim is still conscious, administer hot drinks, and encourage activity, such as walking wrapped in a blanket.

ATTACHMENT E-3

Medical Data Form

MEDICAL DATA SHEET

This form must be completed by all onsite personnel prior to the commencement of activities, and shall be kept by the Site Health and Safety Officer during site activities. This form must be delivered to any attending physician when medical assistance is needed.

Site:			
Name:		Home Telephone:	(Area Code/Telephone Number)
Address:			
Date of Birth:	Height:		Weight:
Emergency Contact:		Telephone:	(Area Code/Telephone Number)
Drug Allergies or Other Allergies:			
Previous Illnesses or Exposures to Hazardous	s Substances:		
Current Medication (Prescription and Non-Pr	rescription):		
Medical Restrictions:			
Name Address and Talanhona Number of D	arson Physician		
manie, Address and Telephone muniber of Pe	.15011 F Hysiciali.		

(This form should be typed or printed legibly.)

ATTACHMENT E-4

Community Air Monitoring Plan (See Appendix D of the Site Management Plan for the Site-Specific Community Air Monitoring Plan)

ATTACHMENT E-5

Health and Safety Briefing/ Tailgate Meeting Form

HEALTH & SAFETY BRIEFING / TAILGATE MEETING FORM

Site Name / Location	
Date:	Weather Forecast:
Names of Personnel Attending Briefing	
Planned Work	
Instrument Calibration: Instrument/Time/Cal.	Gas/Cal. Concentration/Actual Concentration
Items Discussed	
Work Permit Type and Applicable Restrictions	
Signatures of Attending Personnel	
ATTACHMENT E-6

Accident Report and Investigation Form

□ Roux Associates, Inc. □ Remedial Engineering, P.C. (Check applicable company name)

ACCIDENT REPORT

Joe Gentile, Corporate Health and Safety Manager Cell: (610) 844-6911; Office: (856) 423-8800; Office FAX: (856) 423-3220; Home: (484) 373-0953

PART 1: ADMINISTRATIVE INFORMATION												
Project #: 1575.0002	2y			Immediate Verb	al Notifica	tions G	iven	REPORT	STATUS (ti	me due):		
Project Name: Krist	al Auto N	VIAII ss/city/state).		To:					(04 k-)		40 '	
5200 Kings Highway,	Brooklyr	n, New York							(24 hr)	E Final (5-	-10 da	ys)
	-						—	Date:	I	Date:		
Client Corporate Nam	ne / Cont	tact / Address / Phone	e #:	Corporate Health	n & Safety	∐Yes	∐No	Accident	t Report Del	ivered To:		
				Office Health & S	Safety	∐Yes	∐No	Corporate	Health & Sa	fety L	JYes	∐No
				Office Manager		∐Yes		Office Hea	alth & Safety	L	_Yes	
				Project Principal		∐Yes	∐No	Office Mar	nager	L	JYes	∐No
				Project Manager		∐Yes		Project Pri	incipal	L	_Yes	∐No
				Client Contact		∐Yes	∐No	Project Ma	anager		Yes	∐No
·				REPORT TYPE:	🗌 Los	SS	🗌 Neai	Loss	Estimated C	Costs: \$		
OSHA CASE # Assign Applicable:	ed by Co	orporate Health & Safe	ty if	Corporate Health	n & Safety No	Confirn	ned Final	Accident I	Report			
DATE OF INCIDENT:	TIN	ME INCIDENT OCCUR	RED:]PM	INCIDENT LOCA	TION – City	/, State, a	and Country	(If outside l	J.S.A.)			
INCIDENT TYPES: (S	Select mo	st appropriate if Loss of	occurred	.)								
From lists below, pleas	se select	the option that best ca	tegories	the incident. When	selecting a	in injury	or illness,	also indica	ate the sever	ty level.		
		ILLNESS		OTHER INCIDENT	TYPES							
Sev	verity Lev	vel		□Spill / Release			∐Mis	directed W	aste Con	sent Order		VC
□Fatality	□Fir	st Aid Medical		Material involved:	20)			perty Dama	age 🗌 Exc	eedance		
Restricted Work	Los	st Time Treatment			ns):			or venicle		Penalty		
	most app	ropriate one.)		INJURY TYPE (Che	ck all applic	able.)		PART AF	FECTED (Ch	eck all appli	cable.)	
	otor Vehic	cle Svstem St	art-up					Siratory K			a	
Dewatering	perations/			Burn	Rash		Che	st	□Wrist	□Kn	ee	
Drilling M	laintenanc		Removal	Cold/Heat Stress		e Motion		omen	Hand/Finge	ers □An	kle	
Gauging R	ump/Pilot iaaina/Lifti	ing			Sprain/S	train		n <	∐Eye ∏Head		ot/ I oes her	5
I. PERSON(S) DIRECT	LY / IND		IN INCI	DENT (Attach additio	nal informa	tion as n	ecessary/a	applicable.)				
Name/Phone # of Each	Designate):	As appli	cable,	As applicab	le,		•• •	A	s applicable,		
Person Directly/Indirectly	Roux/Ren	nedial Employee	Current C	Occupation;	Employer N	ame;			S	upervisor Na	me; and	ł
involved in incident.	Client Em	ployee	Current	Position; and	Phone #:	u			F	IONE #.		
	Client Cor	ntractor	Yrs in Cu	urrent Position:								
	Third Part	y	-									
1)												
2)												
II. PERSONS INJURED	IN INCID	ENT (Attach additional	informati	on as necessary/app	licable.)							
Name/Phone # of Each	Designate	e:	As appli	cable,	As applicab	le,		As ap	plicable,	Descripti	on of In	ijury:
Person Injured in Incident:	Roux/Rei	medial Employee	Current	Occupation;	Employer N	ame;		Super	rvisor Name; ar	nd		
	Client Err	medial Subcontractor	Current	Position: and	Address; an Phone #	a		Phone	e #:			
	Client Co	ontractor	Yrs in C	urrent Position:								
	Third Par	rty										
1)												
.,												
2)												
III. PROPERTY DAMAG		CIDENT (Attach additic	nal inform	mation as necessary/	applicable							
Property Damaged:		Property Location:		Owner Name, Addre	ess & Phon	e #:	Descrip	tion of Dam	nage:	Estimated	Cost:	
				·			1					
1)										\$		
										1		

Accident Report – Page 2

2)								\$	
IV. WITNESSES TO INC	CIDENT (A	ttach add	ditional in	formation as neo	essary/applicable.)				
Witness Name:				A	ddress:			Phone #:	
1)									
2)									
			PART	2: WHAT H	IAPPENED AND INCIDE	ENT D	DETAILS		
PROVIDE FACTUAL E	DESCRIPT	ION OF I	INCIDEN	IT (e.g., describe	e loss/near loss, injury, response	/ treatr	nent).		
I. AUTHORITIES/GOV	ERNMEN	FAL AGE	ENCIES	NOTIFIED (Atta	ch additional information as nece	essary/a	applicable.)		
Authority/Agency Notified:		Name/ Notifie	/Phone #/ ed:	Fax # of Person	Address of Person Notified:	Dat	e & Time of Notificat	ion: Exact Informa Reported/Pro	ation ovided:
II. PUBLIC RESPONS	ES TO INC		(if applic	able)					
Response/Inquiry By	/:	Entity	Name:		Name/Phone # of Respondent/	Ado	dress of Entity/Person	n: Date & Time	of Response/Inquiry:
(check one)		<u> </u>			Inquirer:	_			
□ Television □ Community Group □ Neighbors □ Other									
Describe Response/Inquiry	/:								
Roux/Remedial Response:	:								
(Check all that apply.) (ATTACHED INFORMA	Attach pho	tos, draw □Ph	vings, etc	to help illustrate: Sketches	e the incident.)	rm	Police Rer	oort 🛛 🗆 Ot	her
Name(s) of person(s) Final Report:	who prepa	ared Initi	ial and	Title(s):			Phone num	ber(s):	
			PAF	RT 3: INVE	STIGATION TEAM	ANA	LYSIS		
CONCLUSION: WHY IT HAPPENED (LIST CAUSAL FACTORS AND CORRESPONDING ROOT CAUSES) (Root Causes: Lack of knowledge or skill, Doing the task according to procedures or acceptable practices takes more time or effort, Short-cuts or not following acceptable practices is reinforced or tolerated, Not following procedures or acceptable practices did not result in an accident, Lack of or inadequate procedures, Inadequate communications of expectations regarding procedures or acceptable practices, Inadequate tools or equipment, External Factors)									
		equipment	, External	Factors)					arding procedures or
ROOT	CAUSE	(S) AN	, External	Factors)	: HOW TO PREVENT	INC	IDENT FRO		sarding procedures or
ROOT		(S) AN	, External	Factors)	: HOW TO PREVENT	INC	IDENT FRO	M RECURRI	NG
ROOT (CAUSAL FACTOR	ROOT	(S) AN	, External	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)]		IDENT FRO		NG ACTUAL
ROOT (CAUSAL FACTOR	ROOT	(S) AN	, External	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	INC RES	IDENT FRO Person Sponsible	M RECURRI AGREED DUE DATE	NG ACTUAL COMPLETION DATE
ROOT (CAUSAL FACTOR	ROOT CAUSE	(S) AN	, External	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	INC RES	IDENT FRO PERSON SPONSIBLE	M RECURRI AGREED DUE DATE	NG ACTUAL COMPLETION DATE
ROOT (CAUSAL FACTOR	ROOT CAUSE	(S) AN	, Èxternal ND SO # 1	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	TINC RES	IDENT FRO PERSON SPONSIBLE	M RECURRI AGREED DUE DATE	NG ACTUAL COMPLETION DATE
ROOT (CAUSAL FACTOR	ROOT CAUSE	(S) AN	, External ID SO # 1 2	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	INC RES	IDENT FRO PERSON SPONSIBLE	M RECURRI	NG ACTUAL COMPLETION DATE
ROOT (CAUSAL FACTOR	ROOT CAUSE	(S) AN	ID SO # 1 2 3	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	TINC RES	IDENT FRO PERSON SPONSIBLE	M RECURRI	NG ACTUAL COMPLETION DATE
ROOT (CAUSAL FACTOR	CAUSE	(S) AN	, External ND SO # 1 2 3	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)	- INC RES	IDENT FRO Person SPONSIBLE	M RECURRI	NG ACTUAL COMPLETION DATE
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ROOT (CAUSAL FACTOR INVESTIGATION T PRINT	CAUSE ROOT CAUSE	(S) AN	JD SO # 1 2 3	Factors)	: HOW TO PREVENT JTION(S) Root Cause(s)] Solution(s)		DATE	M RECURRI	NG ACTUAL COMPLETION DATE

ATTACHMENT E-7

Acord Form

ACORD	Α	UTOMOBILE	LOSS NOT	ICE		DATE (M	M/DD/YYYY)						
AGENCY			INSURED LOCATION	CODE	DATE C	F LOSS AND TIM	E AM						
The Treiber Group						1	PM						
AJ Gallagher Risk Momt Svcs			CARRIER				NAIC CODE						
377 Oak Street			Great Divide Insurance Company 25224										
Garden City, NY 11530			POLICY NUMBER										
CONTACT Teresa Garzia													
PHONE - 1, 516 622 2418			POLICY TYPE										
(A/C, No, Ext): 516 622 2618			Commercial Automobile										
E-MAIL teresa garzia@aig.com	1												
ADDRESS: 101050_garzia@ajg.001			_										
	SUBCODE.												
NAME OF INSURED (First, Middle, Last)			INSURED'S MAILING	ADDRESS									
Boux Associates Inc			Supan Sullivan, Coneral Courses, Dour Associates, Inc.										
DATE OF BIBTH FEIN (if applicable)	MARITAL STATUS /	200 Shaftor Stroo		-1550012105, 1	110.							
11-	2570/82	CIVIL UNION (if applicable)	Islandia NV 1174	د ۵									
				Jane LagelDont@	rouvino com								
PHONE # [] 100 [] 500 [] 611	PHONE # ∟		PRIMARY E-MAIL AD	DRESS: LegalDeple	f Loop to: 62	1 000 1505							
CONTACT			SECONDARY E-MAIL	ADDRESS: Fax Notice 0	1 LUSS 10. 03	1.232.1323							
CONTACT CONTACT (Eirst Middle Last)	I INSURED			ADDRESS									
Super Sulliver Constal Coursel			Susan Sullivan C	Constal Coursel Bour	Accesictes 1	20							
					Associates, I	nc.							
			209 Shafter Stree	t Q									
631.232.2600			Islandia, NY 1174	9									
WHEN TO CONTACT			PRIMARY E-MAIL AD	DRESS: LegalDept@	rouxinc.com								
			SECONDARY E-MAIL	ADDRESS: Fax Notice o	f Loss to: 63	1.232.1525							
LOSS													
LOCATION OF LOSS				FOLICE ON FINE DEFANT	MENT CONTAC								
		PF00.											
		RE55:											
DESCRIPTION OF ACCIDENT (ACORD 101, A	Additional Remarks Sc	nedule, may be attached if m	ore space is required)										
		TYPE:				PLATE NUMBER	STATE						
MODEL:		V.I.N.:			SECONDARY								
OWNER'S NAME AND ADDRESS (CF	neck if same as insure	1)			PHONE #								
			PRIMARY E-MAIL AD	DRESS:									
			SECONDARY E-MAIL	ADDRESS:									
DRIVER'S NAME AND ADDRESS	neck if same as owner)			PHONE #								
			PRIMARY E-MAIL AD	DRESS:									
			SECONDARY E-MAIL	ADDRESS:									
RELATION TO INSURED DATE (Employee, family, etc.)	OF BIRTH DRIVER	S LICENSE NUMBER		STATE PURPOSE OF USE		PEF	USED WITH RMIS <u>SION</u> ? (Y/N)						
DESCRIBE DAMAGE													
1. WAS A STANDARD CHILD PASSEN	GER RESTRAINT S	STEM (CHILD SEAT) INS	TALLED IN THE VEHIC	LE AT THE TIME OF THE	ACCIDENT?		Y / N						
2. WAS THE CHILD PASSENGER RES	STRAINT SYSTEM (CHILD SEAT) IN USE BY A	CHILD DURING THE	TIME OF THE ACCIDENT	?		Y / N						
	BAINT SYSTEM (CL						Y / N						
3. DID THE CHILD PASSENGER REST		ILD SEAT) SUSTAIN A LO	55 AT THE TIME OF T	HE ACCIDENT?									
BID THE CHILD PASSENGER REST ESTIMATE AMOUNT: WHER	E CAN VEHICLE BE SE	ILD SEAT) SUSTAIN A LO	SS AT THE TIME OF T		E BE SEEN?:								
3. DID THE CHILD PASSENGER REST ESTIMATE AMOUNT: WHER OTHER INSURANCE ON VEHICLE - CARRIEF	E CAN VEHICLE BE SE	ILD SEAT) SUSTAIN A LO EN?:	SSAT THE TIME OF T	WHEN CAN VEHICL POLICY NUMBER:	E BE SEEN?:								

The ACORD name and logo are registered marks of ACORD

OTHER	VEHICL	E / PROPERTY DAMAGED NON - VEH		AGENC	CUSTOMER II	D: ROUXAS	SO				
VEH #	YEAR	MAKE:	BODY TYPE:					PLATE NUMBER	STATE		
		MODEL:	V.I.N.:								
DESCRIBE	PROPER	TY (Other Than Vehicle)	·					OTHER VEH/PR	OP INS? (Y/N)		
CARRIER	OR AGEN	ICY NAME	NAIC CODE	POLICY NUM	IBER						
OWNER'S NAME AND ADDRESS					П НОМЕ П В		SECONDARY PHONE #				
				PRIMARY E-MAIL ADDRESS:							
				SECONDARY E-MAIL ADDRESS:							
DRIVER'S	NAME AN	ID ADDRESS (Check if same as owner)		PRIMARY PHONE #	П НОМЕ П В		SECONDARY PHONE #				
				PRIMARY E-MAIL ADDRESS:							
				SECONDARY E-MAIL ADDRESS:							
DESCRIB	E DAMAGI	E									
ESTIMATE	E AMOUNT	WHERE CAN DAMAGE BE SEEN?									
INJURE	D										

NAME & ADDRESS	PHONE (A/C, No)	PED	INS VEH	OTH VEH	AGE	EXTENT OF INJURY

NAME & ADDRESS	PHONE (A/C, No)	INS VEH	OTH VEH	OTHER (Specify)
REPORTED BY	REPORTED TO		•	

REMARKS (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

APPLICABLE IN ALASKA

A person who knowingly and with intent to injure, defraud, or deceive an insurance company files a claim containing false, incomplete, or misleading information may be prosecuted under state law.

APPLICABLE IN ARIZONA

For your protection, Arizona law requires the following statement to appear on this form. Any person who knowingly presents a false or fraudulent claim for payment of a loss is subject to criminal and civil penalties.

APPLICABLE IN ARKANSAS, DELAWARE, KENTUCKY, LOUISIANA, MAINE, MICHIGAN, NEW JERSEY, NEW MEXICO, NORTH DAKOTA, PENNSYLVANIA, RHODE ISLAND, SOUTH DAKOTA, TENNESSEE, TEXAS, VIRGINIA, AND WEST VIRGINIA

Any person who knowingly and with intent to defraud any insurance company or another person, files a statement of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact, material thereto, commits a fraudulent insurance act, which is a crime, subject to criminal prosecution and civil penalties. In LA, ME, TN, and VA, insurance benefits may also be denied.

APPLICABLE IN CALIFORNIA

For your protection, California law requires the following to appear on this form: Any person who knowingly presents a false or fraudulent claim for payment of a loss is guilty of a crime and may be subject to fines and confinement in state prison.

APPLICABLE IN COLORADO

It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policy holder or claimant for the purpose of defrauding or attempting to defraud the policy holder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies.

APPLICABLE IN THE DISTRICT OF COLUMBIA

Warning: It is a crime to provide false or misleading information to an insurer for the purpose of defrauding the insurer or any other person. Penalties include imprisonment and/or fines. In addition, an insurer may deny insurance benefits, if false information materially related to a claim was provided by the applicant.

APPLICABLE IN FLORIDA

Pursuant to S. 817.234, Florida Statutes, any person who, with the intent to injure, defraud, or deceive any insurer or insured, prepares, presents, or causes to be presented a proof of loss or estimate of cost or repair of damaged property in support of a claim under an insurance policy knowing that the proof of loss or estimate of claim or repairs contains any false, incomplete, or misleading information concerning any fact or thing material to the claim commits a felony of the third degree, punishable as provided in S. 775.082, S. 775.083, or S. 775.084, Florida Statutes.

APPLICABLE IN HAWAII

For your protection, Hawaii law requires you to be informed that presenting a fraudulent claim for payment of a loss or benefit is a crime punishable by fines or imprisonment, or both.

APPLICABLE IN IDAHO

Any person who knowingly and with the intent to injure, defraud, or deceive any insurance company files a statement of claim containing any false, incomplete or misleading information is guilty of a felony.

APPLICABLE IN INDIANA

A person who knowingly and with intent to defraud an insurer files a statement of claim containing any false, incomplete, or misleading information commits a felony.

APPLICABLE IN KANSAS

Any person who, knowingly and with intent to defraud, presents, causes to be presented or prepares with knowledge or belief that it will be presented to or by an insurer, purported insurer, broker or any agent thereof, any written statement as part of, or in support of, an application for the issuance of, or the rating of an insurance policy for personal or commercial insurance, or a claim for payment or other benefit pursuant to an insurance policy for commercial or personal insurance which such person knows to contain materially false information concerning any fact material thereto; or conceals, for the purpose of misleading, information concerning any fact material thereto.

APPLICABLE IN MARYLAND

Any person who knowingly and [or]* willfully presents a false or fraudulent claim for payment of a loss or benefit or who knowingly and [or]* willfully presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison. * [or] effective 01-01-2013

APPLICABLE IN MINNESOTA

A person who files a claim with intent to defraud or helps commit a fraud against an insurer is guilty of a crime.

APPLICABLE IN NEVADA

Pursuant to NRS 686A.291, any person who knowingly and willfully files a statement of claim that contains any false, incomplete or misleading information concerning a material fact is guilty of a felony.

APPLICABLE IN NEW HAMPSHIRE

Any person who, with purpose to injure, defraud or deceive any insurance company, files a statement of claim containing any false, incomplete or misleading information is subject to prosecution and punishment for insurance fraud, as provided in RSA 638:20.

APPLICABLE IN NEW YORK

Any person who knowingly and with intent to defraud any insurance company or other person files an application for commercial insurance or a statement of claim for any commercial or personal insurance benefits containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, and any person who in connection with such application or claim knowingly makes or knowingly assists, abets, solicits or conspires with another to make a false report of the theft, destruction, damage or conversion of any motor vehicle to a law enforcement agency, the Department of Motor Vehicles or an insurance company, commits a fraudulent insurance act, which is a crime, and shall also be subject to a civil penalty not to exceed five thousand dollars and the value of the subject motor vehicle or stated claim for each violation.

APPLICABLE IN OHIO

Any person who, with intent to defraud or knowing that he/she is facilitating a fraud against an insurer, submits an application or files a claim containing a false or deceptive statement is guilty of insurance fraud.

APPLICABLE IN OKLAHOMA

WARNING: Any person who knowingly and with intent to injure, defraud or deceive any insurer, makes any claim for the proceeds of an insurance policy containing any false, incomplete or misleading information is guilty of a felony.

APPLICABLE IN WASHINGTON

It is a crime to knowingly provide false, incomplete, or misleading information to an insurance company for the purpose of defrauding the company. Penalties include imprisonment, fines and denial of insurance benefits.

ATTACHMENT E-8

OSHA 300

								City				State					
	Identify the person			Describe the	case	Classi	fy the case	;									
(A) (B) Case Employee's Name No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of	(E) Where the event occurred (e.g. Loading dock north end)	(F) J. 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	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the nu days the inju worker was:	mber of ired or ill	Check the "injury" column or choose one ty illness: (M)				type c	
			illness (mo./day)		forearm from acetylene torch)	Death	Days away from work	Remain Job transfer or restriction	ed at work Other record- able cases	Away From Work (days)	On job transfer or restriction (days)	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnes
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
															+		
															+		
															\longrightarrow		
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					Page totals	0	0	0	0	0	0	0	0	0	0	0	0
					Be sure to transfer these totals	to the	Summary p	bage (Form	300A) before	e you post i	t.	ŋury	order	atory lition	ning	sso-	sses
Public re o review Persons number.	eporting burden for this collection of i w the instruction, search and gather I s are not required to respond to the c . If you have any comments about the pent of I abor. OSHA Office of Statist	information is estimative data needed, and ollection of informationese estimates or any time. Room N-3644	ted to average I complete and on unless it dis y aspects of th	14 minutes per response, including time review the collection of information. plays a currently valid OMB control is data collection, contact: US a Ave NW Washington DC 20210. Do								-	Skin Disc	Respira	Poiso	Hearing I	All other illne
not send	d the completed forms to this office.	iics, Room N-3044, 2		n Ave, ivvv, vvasnington, DC 20210. DU					Page	1 of 1		(1)	(2)	(3)	(4)	(5)	(6)

OSHA's Form 300 (Rev. 01/2004) Log of Work-Related Injuries and Illnesses

office for help.

You must record information 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

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

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 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an

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.

Occupational Safety and Health Administration Form approved OMB no. 1218-0176

Establishment name

Year **U.S. Department of Labor**

KTW2158.0001Y.104R/HSP-ATT-D-8

OSHA's Form 300A (Rev. 01/2004) Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

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 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases



Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, 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 aspects of this data collection, contact: US Department of Labor. OSHA Office of Statistics. Room N-3644. 200 Constitution Ave. NW. Washington. DC 20210. Do not send the completed forms to this office.



U.S. Department of Labor Occupational Safety and Health Administration Form approved OMB no. 1218-0176

Your establishment nam	·	
Street		
City	State	Zip
Industry description (e.g	Manufacture of motor truck trailers)	
Standard Industrial Clas	ification (SIC), if known (e.g., SIC 3715)	
OR North American Industria	I Classification (NAICS), if known (e.g., 336212)	
mployment informatio		
Annual average number	of employees	
Total hours worked by a year	employees last	
lign here		
Knowingly falsifying th	s document may result in a fine.	
I certify that I have exam complete.	ned this document and that to the best of my knowledge \ensuremath{c}	ge the entries are true, accurate, and
Compan	/ executive	Title
p	020	Date

OSHA's Form 301 Injuries and Illnesses 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

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.

Date

Completed by

Title Phone

	Information about the employee		Information about the case					
s one of the	1) Full Name	10)	Case number from the Log (Transfer the case number from the Log after you record the case.)					
rdable work-	2) Street	11)	Date of injury or illness					
nd Illnesses	CityStateZip	12)	Time employee began work AM/PM					
ure of the	3) Date of birth	13)	Time of event AM/PM Check if time cannot be determined					
ceive	4) Date hired	14)	What was the employee doing just before the incident occurred? Describe the activity, as well					
ed injury or is form or npensation,	5) Male Female		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."					
alent form, mation d 29 CFR	Information about the physician or other health care professional6) Name of physician or other health care professional	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";					
s form, you	7) If treatment was given away from the worksite, where was it given?	-						
	FacilityStreet	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."					
	CityStateZip	-						
	8) Was employee treated in an emergency room?	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.					
	9) Was employee hospitalized overnight as an in-patient?							
	No	18)	It the employee died, when did death occur? Date of death					

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

ATTACHMENT E-9

Job Safety and Health Protection Poster

You Have a Right to a Safe and Healthful Workplace.

- 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 the inspection.
- You can file a complaint with OSHA within 30 days of discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have a right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- 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 or records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.



The Occupational Safety and Health Act of 1970 (OSH Act), P.L. 91-596, assures safe and healthful working conditions for working men and women throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primary responsibility for administering the OSH Act. The rights listed here may vary depending on the particular circumstances. To file a complaint, report an emergency, or seek OSHA advice, assistance, or products, call 1-800-321-OSHA or your nearest OSHA office: Atlanta (404) 562-2300 • Boston (617) 565-9860 • Chicago (312) 353-2220 • Dallas (214) 767-4731 • Denver (303) 844-1600 • Kansas City (816) 426-5861 • New York (212) 337-2378 • Philadelphia (215) 861-4900 • San Francisco (415) 975-4310 • Seattle (206) 553-5930, Teletypewriter (TTY) number is 1-877-889-5627. To file a complaint online or obtain more information on OSHA federal and state programs, visit OSHA's website at www.osha.gov. If your workplace is in a state operating under an OSHA-approved plan, your employer must post the required state equivalent of this poster.

1-800-321-OSHA www.osha.gov

U.S. Department of Labor 🛞 • Occupational Safety and Health Administration • OSHA 3165

APPENDIX F

Quality Assurance Project Plan

January 31, 2013

QUALITY ASSURANCE PROJECT PLAN

149 Kent Avenue Site Number C224159

Prepared for

KENT & WYTHE OWNERS LLC 149 Kent Avenue Williamsburg Kings County, New York

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

209 Shafter Street, Islandia, New York 11749 🔶 631-232-2600

ROUX

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4.0 SAMPLING PROCEDURES	.6
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F-1.	Field and Laboratory QC	Summary
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F-2. Laboratory Reporting Limits for Soil, Water, and Air Samples

ATTACHMENTS

F-1. Résumé of Ms. Judy Harry of Data Validation Services

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared to describe the measures that will be taken to ensure that the data generated during performance of the Remedial Investigation (RI) at 149 Kent Avenue, Brooklyn, New York (Site) are of quality sufficient to meet project-specific data quality objectives (DQOs). The QAPP was prepared in accordance with the guidance provided in New York State Department of Environmental Conservation (NYSDEC) Technical Guidance DER-10 (Technical Guidance for Site Investigation and Remediation), the Brownfield Cleanup Program Guide and the United States Environmental Protection Agency's (USEPA's) Guidance for the Data Quality Objectives Process (EPA QA/G-4).

2.0 BACKGROUND, OBJECTIVES, AND SCOPE

In order to achieve project objectives, Roux Associates has developed a scope of work that includes sampling of soil, groundwater, and soil vapor. A brief overview of each element of the RI scope of work is provided below. RI sampling locations are shown in Figure 3 of the RI Work Plan.

2.1 Soil

Samples of soil will be collected and analyzed at a minimum of 24 locations for the following analytes:

- Target Compound List (TCL) plus 30/ Target Analyte List (TCL + 30/TAL), which includes:
 - TCL VOA + Tentatively Identified Compounds (ID TICS)
 - TCL Base Neutral Acids (BNA)/Semivolatile Organic Compounds (SVOCs) + 20
 - TCL Pesticides
 - TCL Herbicides
 - TCL Polychlorinated Biphenyls (PCBs)
 - TAL Metals (including hexavalent chromium)

2.2 Groundwater

Groundwater samples will be collected from six (6) existing monitoring wells installed around the perimeter of the Site and a minimum of eight (8) new monitoring wells installed by Roux Associates during the investigation. After gauging for potential separate-phase petroleum product, each well will be sampled for the following analytes:

- TCL + 30/TAL, which includes:
 - TCL VOA + ID TICS
 - TCL BNA/(SVOCs) + 20
 - TCL Pesticides
 - TCL Herbicides
 - TCL PCBs
 - TAL Metals (including hexavalent chromium)

Purging and sampling will be performed consistent with USEPA low-flow sampling requirements. Field parameters will be collected using a water quality meter with flow-through cell until parameters stabilize before samples are collected.

2.3 Sub-Slab Vapor and Soil Vapor Samples

Previous results have already confirmed the presence of chlorinated volatile organic compounds (CVOCs), primarily TCE and PCE in sub-slab soil gas beneath the warehouse floor slab. Two (2) sub-slab vapor samples will be collected onsite and three soil vapor samples will be collected offsite in the sidewalk. The two sub-slab vapor samples will be collected with a Summa canister over a two-hour period using a regulator and will be analyzed for VOCs via USEPA Method TO-15. The three offsite soil vapor samples will be collected at a depth approximately 4 - 5 feet below grade. However, if there is evidence of a basement in the building along North 6th Street adjacent to soil vapor sample point SV-1, the SV-1 sample will be collected at basement depth. All soil vapor samples will be collected with a Summa canister over a two-hour period using a regulator and will be analyzed for VOCs via USEPA Method TO-15.

3.0 PROJECT ORGANIZATION

The overall management structure and a general summary of the responsibilities of project team members are presented below.

Project Principal

Joseph Duminuco, of Roux Associates/Remedial Engineering will serve as Project Principal. The Project Principal is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the investigation.

Project Manager

Joshua Levine, P.E. of Roux Associates/Remedial Engineering will serve as Project Manager. This individual will provide overall management for the implementation of the scope of work and will coordinate all field activities. The Project Manager is also responsible for data review/interpretation and report preparation. Activities of the Project Manager are supported by the Project Quality Assurance Coordinator.

Field Team Leader

David Bligh, P.E. of Roux Associates/Remedial Engineering will serve as the Field Team Leader. The Field Team Leader bears the responsibility for the successful execution of the field program, as scoped in the RI Work Plan and the Field Sampling Plan (FSP). The Field Team Leader will direct the activities of all technical staff in the field as well all subcontractors. The Field Team Leader will also assist in the interpretation of data and in report preparation. The Field Team Leader reports to the Project Manager.

Laboratory Project Manager

Accutest Laboratories, Inc. (Accutest) of Dayton, New Jersey, has been selected to analyze the field samples for this project and will be responsible for sample container preparation, sample custody in the laboratory, and completion of the required analysis through oversight of the laboratory staff. The Laboratory Project Manager will ensure that quality assurance procedures are followed and that an acceptable laboratory report is prepared and submitted. The Laboratory Project Manager reports to the Field Team Leader.

Quality Assurance Officer

Wai Kwan, Ph.D. of Roux Associates will serve as the Quality Assurance Officer (QAO) for this project. The QAO is responsible for conducting reviews, inspections, and audits to ensure that the data collection is conducted in accordance with the FSP and QAPP. The QAO's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The QAO reports to the Project Manager and makes independent recommendations to the Field Team Leader.

4.0 SAMPLING PROCEDURES

Detailed discussions of sampling, decontamination, and sample handling procedures are provided in the FSP (Appendix B of the RI Work Plan).

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The primary intended use for the RI data is to characterize Site conditions and determine if remediation needs to be undertaken at the Site. The primary DQO of the soil, groundwater, sub-slab vapor and soil vapor sampling programs, therefore, is that data be accurate and precise, and hence representative of the actual Site conditions. Accuracy refers to the ability of the laboratory to obtain a true value (i.e., compared to a standard) and is assessed through the use of laboratory quality control (QC) samples, including laboratory control samples and matrix spike samples, as well as through the use of surrogates, which are compounds not typically found in the environment that are injected into the samples prior to analysis. Precision refers to the ability to replicate a value, and is assessed through both field and laboratory duplicate samples.

Sensitivity is also a critical issue in generating representative data. Laboratory equipment must be of sufficient sensitivity to detect target compounds and analytes at levels below NYSDEC standards and guidelines whenever possible. Equipment sensitivity can be decreased by field or laboratory contamination of samples, and by sample matrix effects. Assessment of instrument sensitivity is performed through the analysis of reagent blanks, near-detection-limit standards, and response factors. Potential field and/or laboratory contamination is assessed through use of trip blanks, method blanks, and equipment rinse blanks (also called "field blanks").

Table F-1 lists the field and laboratory QC samples that will be analyzed to assess data accuracy and precision, as well as to determine if equipment sensitivity has been compromised. Table F-2 shows the reporting limits and minimum detection limits achievable by the laboratory.

All RI "assessment" analyses (i.e., TCL + 30/TAL) will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP), using USEPA SW-846 methods. The laboratory selected to analyze the field samples collected during the RI shall maintain a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certification for each of the "assessment" analyses listed in Section 2.0.

All laboratory data are to be reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in electronic data deliverable (EDD) format as described on NYSDEC's website (http://www.dec.ny.gov/chemical/62440.html). A Data Usability Report will be prepared

meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages generated for the RI. Ms. Judy Harry of Data Validation Services has been selected to prepare the Data Usability Report. A current resume outlining Ms. Judy Harry's education and data validation experience can be found in Attachment F-1.

TABLES

- F-1. Field and Laboratory QC Summary
- F-2. Laboratory Reporting Limits for Soil, Water and Air Samples

Table F-1.	Field	and L	aboratory	OC	Summarv
I UDICI II	I ICIU	unu L	aboratory	χv	Jummury

QC Check Type	Minimum Frequency	Use
Field QC		
Duplicate	1 per matrix per 20 samples or SDG [*]	Precision
Trip Blank	1 per VOC cooler	Sensitivity
Equipment Rinse Blank	1 per day	Sensitivity
Laboratory QC		
Laboratory Control Sample	1 per matrix per SDG	Accuracy
Matrix Spike/Matrix Spike Duplicate/Matrix Duplicate	* 1 per matrix per SDG	Accuracy/Precision
Surrogate Spike	All organics samples	Accuracy
Laboratory Duplicate	1 per matrix per SDG	Precision
Method Blank	1 per matrix per SDG	Sensitivity

Notes:

* SDG - Sample Delivery Group - Assumes a single extraction or preparation ** Provided to lab by field sampling personnel

CompoundList ReportProduct:V8260TCL11Matrix:SOSolid

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Sep 10, 2012 04:53 pm

Method List:VAIX8260 SOReport List:VTCL11 ALLRL/MDL Factor:1	Methoo VOA T	l Ref: S CL List (60B 1)	LJ40841 LJ24480	
Compound	CAS No.	RL	MDL	Units	
Acetone	67-64-1	10	1.7	ug/kg	
Benzene	71-43-2	1.0	0.12	ug/kg	
Bromochloromethane	74-97-5	5.0	0.27	ug/kg	
Bromodichloromethane	75-27-4	5.0	0.11	ug/kg	
Bromoform	75-25-2	5.0	0.15	ug/kg	
Bromomethane	74-83-9	5.0	0.27	ug/kg	
2-Butanone (MEK)	78-93-3	10	2.4	ug/kg	
Carbon disulfide	75-15-0	5.0	0.12	ug/kg	
Carbon tetrachloride	56-23-5	5.0	0.13	ug/kg	
Chlorobenzene	108-90-7	5.0	0.11	ug/kg	
Chloroethane	75-00-3	5.0	0.23	ug/kg	
Chloroform	67-66-3	5.0	0.083	ug/kg	
Chloromethane	74-87-3	5.0	0.19	ug/kg	
Cyclohexane	110-82-7	5.0	0.12	ug/kg	
1,2-Dibromo-3-chloropropane	96-12-8	10	0.89	ug/kg	
Dibromochloromethane	124-48-1	5.0	0.16	ug/kg	
1,2-Dibromoethane	106-93-4	1.0	0.13	ug/kg	
1,2-Dichlorobenzene	95-50-1	5.0	0.19	ug/kg	
1,3-Dichlorobenzene	541-73-1	5.0	0.19	ug/kg	
1,4-Dichlorobenzene	106-46-7	5.0	0.18	ug/kg	
Dichlorodifluoromethane	75-71-8	5.0	0.23	ug/kg	
1,1-Dichloroethane	75-34-3	5.0	0.14	ug/kg	
1,2-Dichloroethane	107-06-2	1.0	0.14	ug/kg	
1,1-Dichloroethene	75-35-4	5.0	0.26	ug/kg	
cis-1,2-Dichloroethene	156-59-2	5.0	0.18	ug/kg	
trans-1,2-Dichloroethene	156-60-5	5.0	0.24	ug/kg	
1,2-Dichloropropane	78-87-5	5.0	0.15	ug/kg	
cis-1,3-Dichloropropene	10061-01-5	5.0	0.14	ug/kg	
trans-1,3-Dichloropropene	10061-02-6	5.0	0.16	ug/kg	
1,4-Dioxane	123-91-1	130	60	ug/kg	
Ethylbenzene	100-41-4	1.0	0.26	ug/kg	
Freon 113	76-13-1	5.0	0.43	ug/kg	
2-Hexanone	591-78-6	5.0	0.62	ug/kg	
Isopropylbenzene	98-82-8	5.0	0.074	ug/kg	
Methyl Acetate	79-20-9	5.0	2.6	ug/kg	
Methylcyclohexane	108-87-2	5.0	0.17	ug/kg	
Methyl Tert Butyl Ether	1634-04-4	1.0	0.24	ug/kg	
4-Methyl-2-pentanone(MIBK)	108-10-1	5.0	0.75	ug/kg	
Methylene chloride	75-09-2	5.0	1.3	ug/kg	
Styrene	100-42-5	5.0	0.092	ug/kg	
1, 1, Z, Z-1 etrachloroethane	/9-34-5	5.0	0.13	ug/kg	
1 etrachloroethene	127-18-4	5.0	0.17	ug/kg	
	108-88-3	1.0	0.11	ug/kg	
1,2,3-Trichlorobenzene	87-61-6	5.0	0.16	ug/kg	

Compound List Report Product: V8260TCL11 TCL Volatile Organics Matrix: SO Solid

Sep 10, 2012 04:53 pm

Method List: Report List: RL/MDL Factor:	VAIX8260 SO VTCL11 ALL 1	Meth VOA	od Ref: TCL Lis	LJ40841 LJ24480		
Compound		CAS No.	RL	MDL	Units	
1,2,4-Trichloroben	zene	120-82-1	5.0	0.14	ug/kg	
1,1,1-Trichloroetha	ane	71-55-6	5.0	0.11	ug/kg	
1,1,2-Trichloroetha	ine	79-00-5	5.0	0.17	ug/kg	
Trichloroethene		79-01-6	5.0	0.17	ug/kg	
Trichlorofluoromet	hane	75-69-4	5.0	0.30	ug/kg	
Vinyl chloride		75-01-4	5.0	0.14	ug/kg	
m,p-Xylene			1.0	0.17	ug/kg	
o-Xylene		95-47-6	1.0	0.14	ug/kg	
Xylene (total)		1330-20-7	1.0	0.14	ug/kg	

53 compounds reported in list VTCL11

CompoundList ReportProduct:V8260TCL11TCL Volatile OrganicsMatrix:SO Solid

Page 1 of 2

Sep 10, 2012 04:53 pm

Method List: Report List: RL/MDL Factor:	VAIX8260 SO VTCL11 ALL 100	Metho VOA	od Ref: 5 TCL List	LJ40841 LJ24480		
Compound		CAS No.	RL	MDL	Units	
Acetone		67-64-1	1000	170	ug/kg	
Benzene		71-43-2	100	12	ug/kg	
Bromochloromethan	e	74-97-5	500	27	ug/kg	
Bromodichlorometha	ane	75-27-4	500	11	ug/kg	
Bromoform		75-25-2	500	15	ug/kg	
Bromomethane		74-83-9	500	27	ug/kg	
2-Butanone (MEK)		78-93-3	1000	240	ug/kg	
Carbon disulfide		75-15-0	500	12	ug/kg	
Carbon tetrachloride		56-23-5	500	13	ug/kg	
Chlorobenzene		108-90-7	500	11	ug/kg	
Chloroethane		75-00-3	500	23	ug/kg	
Chloroform		67-66-3	500	8.3	ug/kg	
Chloromethane		74-87-3	500	19	ug/kg	
Cyclohexane		110-82-7	500	12	ug/kg	
1,2-Dibromo-3-chlo	ropropane	96-12-8	1000	89	ug/kg	
Dibromochlorometh	ane	124-48-1	500	16	ug/kg	
1,2-Dibromoethane		106-93-4	100	13	ug/kg	
1,2-Dichlorobenzene	e	95-50-1	500	19	ug/kg	
1,3-Dichlorobenzene	e	541-73-1	500	19	ug/kg	
1,4-Dichlorobenzene	e	106-46-7	500	18	ug/kg	
Dichlorodifluoromet	thane	75-71-8	500	23	ug/kg	
1,1-Dichloroethane		75-34-3	500	14	ug/kg	
1,2-Dichloroethane		107-06-2	100	14	ug/kg	
1,1-Dichloroethene		75-35-4	500	26	ug/kg	
cis-1,2-Dichloroethe	ene	156-59-2	500	18	ug/kg	
trans-1,2-Dichloroet	hene	156-60-5	500	24	ug/kg	
1,2-Dichloropropane	e	78-87-5	500	15	ug/kg	
cis-1,3-Dichloroprop	pene	10061-01-5	500	14	ug/kg	
trans-1,3-Dichloropi	ropene	10061-02-6	500	16	ug/kg	
1,4-Dioxane		123-91-1	13000	6000	ug/kg	
Ethylbenzene		100-41-4	100	26	ug/kg	
Freon 113		76-13-1	500	43	ug/kg	
2-Hexanone		591-78-6	500	62	ug/kg	
Isopropylbenzene		98-82-8	500	7.4	ug/kg	
Methyl Acetate		79-20-9	500	260	ug/kg	
Methylcyclohexane		108-87-2	500	17	ug/kg	
Methyl Tert Butyl E	ther	1634-04-4	100	24	ug/kg	
4-Methyl-2-pentanon	ne(MIBK)	108-10-1	500	75	ug/kg	
Methylene chloride		75-09-2	500	130	ug/kg	
Styrene		100-42-5	500	9.2	ug/kg	
1,1,2,2-Tetrachloroe	ethane	79-34-5	500	13	ug/kg	
Tetrachloroethene		127-18-4	500	17	ug/kg	
Toluene		108-88-3	100	11	ug/kg	
1,2,3-Trichlorobenz	ene	87-61-6	500	16	ug/kg	

Compound List Report Product: V8260TCL11 TCL Volatile Organics Matrix: SO Solid

Page 2 of 2

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Method List: Report List: RL/MDL Factor:	VAIX8260 SO VTCL11 ALL 100	Method Ref: SW846 8260B VOA TCL List (SOM0 1.1)				LJ40841 LJ24480
Compound		CAS No.	RL	MDL	Units	
1,2,4-Trichlorobenze	ene	120-82-1	500	14	ug/kg	
1,1,1-Trichloroethan	e	71-55-6	500	11	ug/kg	
1,1,2-Trichloroethan	e	79-00-5	500	17	ug/kg	
Trichloroethene		79-01-6	500	17	ug/kg	
Trichlorofluorometha	ane	75-69-4	500	30	ug/kg	
Vinyl chloride		75-01-4	500	14	ug/kg	
m,p-Xylene			100	17	ug/kg	
o-Xylene		95-47-6	100	14	ug/kg	
Xylene (total)		1330-20-7	100	14	ug/kg	

53 compounds reported in list VTCL11

CompoundList ReportProduct:AB8270TCL11 TCL SemivolatilesMatrix:SO Solid

Page 1 of 2

Sep 10, 2012 04:53 pm

Method List: Report List: RL/MDL Factor:	AB8270 SO ABTCL11 ALL 33.3	Meth ABN	od Ref: TCL List	LJ40837 LJ24481		
Compound		CAS No.	RL	MDL	Units	
2-Chlorophenol		95-57-8	170	34	ug/kg	
4-Chloro-3-methyl	phenol	59-50-7	170	33	ug/kg	
2,4-Dichlorophenol		120-83-2	170	54	ug/kg	
2,4-Dimethylpheno	1	105-67-9	170	56	ug/kg	
2,4-Dinitrophenol		51-28-5	670	41	ug/kg	
4,6-Dinitro-o-creso	1	534-52-1	670	41	ug/kg	
2-Methylphenol		95-48-7	67	38	ug/kg	
3&4-Methylphenol			67	42	ug/kg	
2-Nitrophenol		88-75-5	170	35	ug/kg	
4-Nitrophenol		100-02-7	330	56	ug/kg	
Pentachlorophenol		87-86-5	330	57	110/kg	
Phenol		108-95-2	67	35	ug/kg ug/kg	
2 3 4 6-Tetrachloro	nhenol	58-90-2	170	34	ug/kg ug/kg	
2, 3, 1, 0 Tetraemore 2 4 5-Trichloropher	nol	95-95-4	170	39	ug/kg	
2,4,5 Trichloropher	nol	88-06-2	170	31	ug/kg	
Acenaphthene	lioi	83-32-9	33	97	ug/kg	
		208-96-8	33	11	ug/kg	
Acetophenone		98-86-2	170	5.9	ug/kg	
Anthracene		120-12-7	33	12	ug/kg	
Atrazine		1912-24-9	170	6.6	ug/kg	
Renzo(a)anthracene		56-55-3	33	11	ug/kg	
Benzo(a)pyrene		50-32-8	33	10	ug/kg	
Benzo(b)fluoranthe	ne	205-99-2	33	10	ug/kg	
Benzo(g h i)pervler		101 24 2	33	12	ug/kg	
Benzo(k)fluoranthe	ne	207.08.0	33	12	ug/kg	
A Bromonhenyl nhe	nvl ether	101 55 3	55 67	12	ug/kg	
Butyl benzyl phthal	ato	85 68 7	67	10	ug/kg	
1 1' Binhenvl	aic	02 52 4	67	3.0	ug/kg	
Ronzaldohydo		92-32-4 100 52 7	170	5.9 7 7	ug/kg	
2 Chloronanhthalan	0	01 58 7	67	10	ug/kg	
4 Chloroaniline		106 47 8	170	10	ug/kg	
4-Chioroannine Carbazola		86 74 8	67	15	ug/kg	
Carrolactam		105 60 2	67	10	ug/kg	
Capitolaciani		218 01 0	33	10	ug/kg	
bis(2 Chloroothovy)	mathana	218-01-9	55 67	11	ug/kg	
bis(2-Chloroethyl)a	ther	111-91-1	67	10	ug/kg	
bis(2-Chloroisopror	ulti willother	102 60 1	67	10	ug/kg	
4 Chlorophonyl she	anyl other	7005 72 2	67	9.9 10	ug/kg	
4-Chlorophenyi phe	engi enlei	1005-12-5	67	10	ug/kg	
2,4-Dimitrotoluene		121-14-2	67	13	ug/kg	
2,0-Dinitrotoiuene	dina	000-20-2	170	15	ug/kg	
5,5 -Diciliorobenzi		91-94-1 52 70 2	170	0.0	ug/kg	
Dibenzo(a, n)anthra	cene	33-70-3	33 67	11	ug/kg	
Dibenzoruran		132-64-9	6/	9.9	ug/kg	
Di-n-butyl phthalate	2	84-74-2	6/	1.4	ug/kg	

Compound List Report Product: AB8270TCL11 TCL Semivolatiles Matrix: SO Solid

Sep 10, 2012 04:53 pm

Method List: Report List: RL/MDL Factor:	AB8270 SO ABTCL11 ALL 33.3	Method Ref: SW846 8270D ABN TCL List (SOM0 1.1)				LJ40837 LJ24481
Compound		CAS No.	RL	MDL	Units	
Di-n-octyl phthalate	•	117-84-0	67	16	ug/kg	
Diethyl phthalate		84-66-2	67	11	ug/kg	
Dimethyl phthalate		131-11-3	67	12	ug/kg	
bis(2-Ethylhexyl)ph	thalate	117-81-7	67	29	ug/kg	
Fluoranthene		206-44-0	33	15	ug/kg	
Fluorene		86-73-7	33	11	ug/kg	
Hexachlorobenzene		118-74-1	67	11	ug/kg	
Hexachlorobutadien	ie	87-68-3	33	9.3	ug/kg	
Hexachlorocycloper	ntadiene	77-47-4	330	34	ug/kg	
Hexachloroethane		67-72-1	170	9.3	ug/kg	
Indeno(1,2,3-cd)pyr	rene	193-39-5	33	12	ug/kg	
Isophorone		78-59-1	67	9.0	ug/kg	
2-Methylnaphthalen	e	91-57-6	67	19	ug/kg	
2-Nitroaniline		88-74-4	170	15	ug/kg	
3-Nitroaniline		99-09-2	170	13	ug/kg	
4-Nitroaniline		100-01-6	170	13	ug/kg	
Naphthalene		91-20-3	33	9.1	ug/kg	
Nitrobenzene		98-95-3	67	9.6	ug/kg	
N-Nitroso-di-n-prop	oylamine	621-64-7	67	8.1	ug/kg	
N-Nitrosodiphenyla	mine	86-30-6	170	20	ug/kg	
Phenanthrene		85-01-8	33	15	ug/kg	
Pyrene		129-00-0	33	13	ug/kg	
1,2,4,5-Tetrachloro	benzene	95-94-3	170	10	ug/kg	

67 compounds reported in list ABTCL11

Compound List Report Product: P8081PESTTCL TCL Pesticides Matrix: SO Solid

Sep 10, 2012 04:54 pm

Method List: Report List: RL/MDL Factor	P8081 SO PTCL ALL : .67	Meth Pestic	od Ref: ide TCL	LJ36014 LJ1046		
Compound		CAS No.	RL	MDL	Units	
Aldrin		309-00-2	0.67	0.33	ug/kg	
alpha-BHC		319-84-6	0.67	0.50	ug/kg	
beta-BHC		319-85-7	0.67	0.47	ug/kg	
delta-BHC		319-86-8	0.67	0.39	ug/kg	
gamma-BHC (Lin	ndane)	58-89-9	0.67	0.31	ug/kg	
alpha-Chlordane		5103-71-9	0.67	0.44	ug/kg	
gamma-Chlordane	e	5103-74-2	0.67	0.34	ug/kg	
Dieldrin		60-57-1	0.67	0.52	ug/kg	
4,4'-DDD		72-54-8	0.67	0.34	ug/kg	
4,4'-DDE		72-55-9	0.67	0.40	ug/kg	
4,4'-DDT		50-29-3	0.67	0.49	ug/kg	
Endrin		72-20-8	0.67	0.34	ug/kg	
Endosulfan sulfate	e	1031-07-8	0.67	0.61	ug/kg	
Endrin aldehyde		7421-93-4	0.67	0.64	ug/kg	
Endosulfan-I		959-98-8	0.67	0.32	ug/kg	
Endosulfan-II		33213-65-9	0.67	0.44	ug/kg	
Heptachlor		76-44-8	0.67	0.41	ug/kg	
Heptachlor epoxic	de	1024-57-3	0.67	0.33	ug/kg	
Methoxychlor		72-43-5	1.3	0.47	ug/kg	
Endrin ketone		53494-70-5	0.67	0.44	ug/kg	
Toxaphene		8001-35-2	17	8.4	ug/kg	

21 compounds reported in list PTCL

Compound List Report Product: P8082PCB11 PCBs w 1262 & 1268 Matrix: SO Solid

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Method List: Report List: RL/MDL Factor:	P8082 SO PCB11 ALL .67	Method PCB Li	l Ref: S	82A	LJ35975 LJ31661	
Compound		CAS No.	RL	MDL	Units	
Aroclor 1016		12674-11-2	34	8.7	ug/kg	
Aroclor 1221		11104-28-2	34	20	ug/kg	
Aroclor 1232		11141-16-5	34	17	ug/kg	
Aroclor 1242		53469-21-9	34	11	ug/kg	
Aroclor 1248		12672-29-6	34	10	ug/kg	
Aroclor 1254		11097-69-1	34	16	ug/kg	
Aroclor 1260		11096-82-5	34	11	ug/kg	
Aroclor 1268		11100-14-4	34	9.8	ug/kg	
Aroclor 1262		37324-23-5	34	11	ug/kg	

9 compounds reported in list PCB11

Compound List Report Product: H8151STD Herbicides Matrix: SO Solid

Sep 10, 2012 04:54 pm

Method List: Report List: RL/MDL Factor:	H8151 SO HERB3 ALL .67	Method Ref: SW846 8151 Herbicide List				LJ33544 LJ925
Compound		CAS No.	RL	MDL	Units	
2,4-D 2,4,5-TP (Silvex) 2,4,5-T		94-75-7 93-72-1 93-76-5	34 6.7 6.7	9.7 1.2 2.9	ug/kg ug/kg ug/kg	

3 compounds reported in list HERB3
CompoundList ReportProduct:V8260TCL11TCL Volatile OrganicsMatrix:AQAqueous

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Method List: Report List: RL/MDL Factor:	VAIX8260 AQ VTCL11 ALL 1	Metho VOA	o d Ref: TCL List	SW846 82 (SOM0 1)	260B .1)	LJ40839 LJ24480
Compound		CAS No.	RL	MDL	Units	
Acetone		67-64-1	10	3.3	ug/l	
Benzene		71-43-2	1.0	0.24	ug/l	
Bromochloromethan	e	74-97-5	5.0	0.30	ug/l	
Bromodichlorometha	ane	75-27-4	1.0	0.21	ug/l	
Bromoform		75-25-2	4.0	0.21	ug/l	
Bromomethane		74-83-9	2.0	0.22	ug/l	
2-Butanone (MEK)		78-93-3	10	2.4	ug/l	
Carbon disulfide		75-15-0	2.0	0.19	ug/l	
Carbon tetrachloride		56-23-5	1.0	0.22	ug/l	
Chlorobenzene		108-90-7	1.0	0.23	ug/l	
Chloroethane		75-00-3	1.0	0.26	ug/l	
Chloroform		67-66-3	1.0	0.20	ug/l	
Chloromethane		74-87-3	1.0	0.21	ug/l	
Cyclohexane		110-82-7	5.0	0.35	ug/l	
1,2-Dibromo-3-chlor	opropane	96-12-8	10	0.54	ug/l	
Dibromochlorometha	ane	124-48-1	1.0	0.14	ug/l	
1,2-Dibromoethane		106-93-4	2.0	0.20	ug/l	
1,2-Dichlorobenzene		95-50-1	1.0	0.22	ug/l	
1,3-Dichlorobenzene		541-73-1	1.0	0.22	ug/l	
1,4-Dichlorobenzene		106-46-7	1.0	0.30	ug/l	
Dichlorodifluoromet	hane	75-71-8	5.0	0.27	ug/l	
1,1-Dichloroethane		75-34-3	1.0	0.11	ug/l	
1,2-Dichloroethane		107-06-2	1.0	0.26	ug/l	
1,1-Dichloroethene		75-35-4	1.0	0.19	ug/l	
cis-1,2-Dichloroethe	ne	156-59-2	1.0	0.19	ug/l	
trans-1,2-Dichloroet	hene	156-60-5	1.0	0.21	ug/l	
1,2-Dichloropropane	•	78-87-5	1.0	0.48	ug/l	
cis-1,3-Dichloroprop	bene	10061-01-5	1.0	0.21	ug/l	
trans-1,3-Dichloropr	opene	10061-02-6	1.0	0.19	ug/l	
1,4-Dioxane		123-91-1	130	75	ug/l	
Ethylbenzene		100-41-4	1.0	0.23	ug/l	
Freon 113		76-13-1	5.0	0.53	ug/l	
2-Hexanone		591-78-6	5.0	1.1	ug/l	
Isopropylbenzene		98-82-8	2.0	0.45	ug/l	
Methyl Acetate		79-20-9	5.0	1.2	ug/l	
Methylcyclohexane		108-87-2	5.0	0.26	ug/l	
Methyl Tert Butyl Et	ther	1634-04-4	1.0	0.16	ug/l	
4-Methyl-2-pentanor	ne(MIBK)	108-10-1	5.0	0.83	ug/l	
Methylene chloride		75-09-2	2.0	0.70	ug/l	
Styrene		100-42-5	5.0	0.21	ug/l	
1,1,2,2-Tetrachloroe	ethane	79-34-5	1.0	0.21	ug/l	
Tetrachloroethene		127-18-4	1.0	0.28	ug/l	
Toluene		108-88-3	1.0	0.23	ug/l	
1,2,3-Trichlorobenze	ene	87-61-6	5.0	0.28	ug/l	

Compound List Report Product: V8260TCL11 TCL Volatile Organics Matrix: AQ Aqueous

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Method List: Report List: RL/MDL Factor:	VAIX8260 AQ VTCL11 ALL 1	Method Ref: SW846 8260B VOA TCL List (SOM0 1.1)				LJ40839 LJ24480
Compound		CAS No.	RL	MDL	Units	
1,2,4-Trichlorobenz	ene	120-82-1	5.0	0.20	ug/l	
1,1,1-Trichloroetha	ne	71-55-6	1.0	0.24	ug/l	
1,1,2-Trichloroetha	ne	79-00-5	1.0	0.29	ug/l	
Trichloroethene		79-01-6	1.0	0.22	ug/l	
Trichlorofluorometh	nane	75-69-4	5.0	0.27	ug/l	
Vinyl chloride		75-01-4	1.0	0.21	ug/l	
m.p-Xvlene			1.0	0.42	ug/l	
o-Xvlene		95-47-6	1.0	0.24	ug/l	
Xylene (total)		1330-20-7	1.0	0.24	ug/l	

53 compounds reported in list VTCL11

CompoundList ReportProduct:AB8270TCL11TCL SemivolatilesMatrix:AQAqueous

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Method List: Report List: RL/MDL Factor:	AB8270 AQ ABTCL11 ALL 1	Meth ABN	od Ref: TCL List	SW846 82 (SOM0 1.	270D 1)	LJ40836 LJ24481
Compound		CAS No.	RL	MDL	Units	
2-Chlorophenol		95-57-8	5.0	0.97	ug/l	
4-Chloro-3-methyl p	ohenol	59-50-7	5.0	1.8	ug/l	
2,4-Dichlorophenol		120-83-2	5.0	1.2	ug/l	
2,4-Dimethylphenol		105-67-9	5.0	1.5	ug/l	
2,4-Dinitrophenol		51-28-5	20	17	ug/l	
4.6-Dinitro-o-cresol		534-52-1	20	0.99	ug/l	
2-Methylphenol		95-48-7	2.0	1.0	ug/l	
3&4-Methylphenol			2.0	0.93	ug/l	
2-Nitrophenol		88-75-5	5.0	1.5	ug/1	
4-Nitrophenol		100-02-7	10	5.2	ug/1	
Pentachlorophenol		87-86-5	10	14	ug/1	
Phenol		108-95-2	2.0	1.1	ug/1	
2 3 4 6-Tetrachlorov	nhenol	58-90-2	5.0	0.94	ug/1	
2, 3, 4, 0 Tetrachlorophen		95-95-4	5.0	1.6	ug/1	
2,4,5 Trichlorophen 2.4.6-Trichlorophen		88-06-2	5.0	1.0	ug/1	
A cenanbthene	101	83_32_9	1.0	0.26	ug/1	
Aconaphthylene		208.96.8	1.0	0.20	ug/1	
Acetophenone		208-90-8	1.0	0.23	ug/l	
Anthracana		120 12 7	2.0	0.29	ug/l	
Attrazino		120-12-7	5.0	0.29	ug/1	
Ronzoldohydo		1912-24-9	5.0	2.2	ug/1	
Banzo(a)anthracana		100- <i>32-7</i>	1.0	0.23	ug/1	
Delizo(a)altuli acelle Denzo(a)purene		50 22 8	1.0	0.23	ug/1	
Delizo(a)pyrelle Denzo(b)fluorenthen		205 00 2	1.0	0.25	ug/1	
Benzo(0)Huoranulen Benzo(g h i)perulen		203-99-2	1.0	0.40	ug/1	
Benzo(g, II, I)per yiell Benzo(k)fluorenthen		207.08.0	1.0	0.52	ug/1	
4 Promonhanyl phor	it nul other	207-08-9	1.0	0.31	ug/1	
4-Di Oliophenyi phen	ilyi eulei	101-33-3	2.0	0.30	ug/1	
1 1' Dimbonyl	lle	02 52 4	2.0	0.29	ug/1	
1,1 -Dipitellyl	-	92-32-4	1.0	0.30	ug/1	
2-Chloroonaphthalene	ð	91-38-7	2.0	0.50	ug/1	
4-Chioroannine		100-47-8	5.0	0.35	ug/1	
Carbazole		00-74-0 105 60 2	1.0	0.50	ug/1	
Caprolaciam		105-00-2	2.0	0.09	ug/1	
Chrysene		218-01-9	1.0	0.29	ug/1	
bis(2-Chloroethoxy)	methane	111-91-1	2.0	0.31	ug/1	
bis(2-Chloroethyl)et	ner	111-44-4	2.0	0.31	ug/1	
bis(2-Chloroisoprop	yi)etner	108-60-1	2.0	0.45	ug/1	
4-Chlorophenyl pher	nyi etner	/005-72-3	2.0	0.31	ug/1	
2,4-Dinitrotoluene		121-14-2	2.0	0.43	ug/1	
2,6-Dinitrotoluene		606-20-2	2.0	0.46	ug/1	
3,3'-Dichlorobenzid	ine	91-94-1	5.0	0.36	ug/I	
Dibenzo(a,h)anthrac	cene	53-70-3	1.0	0.38	ug/I	
Dibenzofuran		132-64-9	5.0	0.27	ug/l	
Di-n-butyl phthalate		84-74-2	2.0	0.56	ug/l	

 Compound List Report

 Product:
 AB8270TCL11
 TCL Semivolatiles
 Matrix: AQ Aqueous

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Method List:AB8270 AQReport List:ABTCL11 ALLRL/MDL Factor:1		Metl ABN	od Ref: TCL List	270D .1)	LJ40836 LJ24481	
Compound		CAS No.	RL	MDL	Units	
Di-n-octyl phthalate		117-84-0	2.0	0.31	ug/l	
Diethyl phthalate		84-66-2	2.0	0.33	ug/l	
Dimethyl phthalate		131-11-3	2.0	0.28	ug/l	
bis(2-Ethylhexyl)pht	halate	117-81-7	2.0	0.59	ug/l	
Fluoranthene		206-44-0	1.0	0.32	ug/l	
Fluorene		86-73-7	1.0	0.28	ug/l	
Hexachlorobenzene		118-74-1	1.0	0.34	ug/l	
Hexachlorobutadiene	2	87-68-3	1.0	0.51	ug/l	
Hexachlorocyclopen	tadiene	77-47-4	10	7.1	ug/l	
Hexachloroethane		67-72-1	2.0	0.55	ug/l	
Indeno(1,2,3-cd)pyre	ene	193-39-5	1.0	0.37	ug/l	
Isophorone		78-59-1	2.0	0.27	ug/l	
2-Methylnaphthalene	e	91-57-6	1.0	0.38	ug/l	
2-Nitroaniline		88-74-4	5.0	1.1	ug/l	
3-Nitroaniline		99-09-2	5.0	1.3	ug/l	
4-Nitroaniline		100-01-6	5.0	1.7	ug/l	
Naphthalene		91-20-3	1.0	0.26	ug/l	
Nitrobenzene		98-95-3	2.0	0.42	ug/l	
N-Nitroso-di-n-prop	ylamine	621-64-7	2.0	0.30	ug/l	
N-Nitrosodiphenylar	nine	86-30-6	5.0	0.31	ug/l	
Phenanthrene		85-01-8	1.0	0.29	ug/l	
Pyrene		129-00-0	1.0	0.27	ug/l	
1,2,4,5-Tetrachlorob	enzene	95-94-3	2.0	0.31	ug/l	

67 compounds reported in list ABTCL11

Compound List Report Product: P8082PCB11 PCBs w 1262 & 1268 Matrix: AQ Aqueous

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Method List: Report List: RL/MDL Factor:	P8082 AQ PCB11 ALL 1	Method Ref: SW846 8082A PCB List				LJ35825 LJ31661
Compound		CAS No.	RL	MDL	Units	
Aroclor 1016		12674-11-2	50	13	ug/l	
Aroclor 1221		11104-28-2	50	27	ug/l	
Aroclor 1232		11141-16-5	50	39	ug/l	
Aroclor 1242		53469-21-9	50	8.6	ug/l	
Aroclor 1248		12672-29-6	50	15	ug/l	
Aroclor 1254		11097-69-1	50	14	ug/l	
Aroclor 1260		11096-82-5	50	21	ug/l	
Aroclor 1268		11100-14-4	50	13	ug/l	
Aroclor 1262		37324-23-5	50	6.0	ug/l	

9 compounds reported in list PCB11

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Compound List Report Product: P8081PESTTCL TCL Pesticides Matrix: AQ Aqueous

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Method List: Report List: RL/MDL Factor:	P8081 AQ PTCL ALL 1	Method Ref: SW846 8081B Pesticide TCL List			081B	LJ36015 LJ1046
Compound		CAS No.	RL	MDL	Units	
Aldrin		309-00-2	1.0	0.95	ug/l	
alpha-BHC		319-84-6	1.0	0.40	ug/l	
beta-BHC		319-85-7	1.0	0.38	ug/l	
delta-BHC		319-86-8	1.0	0.62	ug/l	
gamma-BHC (Lind	ane)	58-89-9	1.0	0.41	ug/l	
alpha-Chlordane	,	5103-71-9	1.0	0.50	ug/l	
gamma-Chlordane		5103-74-2	1.0	0.23	ug/l	
Dieldrin		60-57-1	1.0	0.33	ug/l	
4,4' -DDD		72-54-8	1.0	0.36	ug/l	
4,4'-DDE		72-55-9	1.0	0.30	ug/l	
4,4' -DDT		50-29-3	1.0	0.60	ug/l	
Endrin		72-20-8	1.0	0.64	ug/l	
Endosulfan sulfate		1031-07-8	1.0	0.64	ug/l	
Endrin aldehyde		7421-93-4	1.0	0.29	ug/l	
Endrin ketone		53494-70-5	1.0	0.41	ug/l	
Endosulfan-I		959-98-8	1.0	0.30	ug/l	
Endosulfan-II		33213-65-9	1.0	0.28	ug/l	
Heptachlor		76-44-8	1.0	0.84	ug/l	
Heptachlor epoxide	:	1024-57-3	1.0	0.38	ug/l	
Methoxychlor		72-43-5	2.0	0.82	ug/l	
Toxaphene		8001-35-2	25	15	ug/l	

21 compounds reported in list PTCL

Compound List Report Product: H8151STD Herbicides Matrix: AQ Aqueous

Sep 10, 2012 04:45 pm

Method List: Report List: RL/MDL Factor:	H8151 AQ HERB3 ALL 1	Method Ref: SW846 8151 Herbicide List				LJ32664 LJ925
Compound		CAS No.	RL	MDL	Units	
2,4-D 2,4,5-TP (Silvex) 2,4,5-T		94-75-7 93-72-1 93-76-5	50 10 10	16 2.6 2.0	ug/l ug/l ug/l	

3 compounds reported in list HERB3

Accutest NJ Normal Reporting Limits and Method Detection Limits for Soil and Non-potable Water Matrices for 2012 (Soil values will be adjusted up for percent solids.)

	Motherd				
	200 7/6010	Method 200 7/6010		Method 6010	
	waters -	waters - pooled	Method 6010 soils	soils - pooled	
	normal RL in	MDL for SS ICP's in	- normal RL in	MDL for SS	
TEST	ug/I - ICP	ug/l	mg/kg - ICP	ICP's in mg/kg	TEST
Al	200.0	16.09	50.0	0.740	Al
Sb	6.0	1.44	2.0	0.150	Sb
As	8.0	0.97	2.0	0.129	As
Ва	200.0	0.66	20.0	0.054	Ва
Be	1.0	0.44	0.2	0.020	Be
Cd	3.0	0.24	0.5	0.025	Cd
Са	5000.0	39.44	500.0	2.347	Са
Cr	10.0	0.91	1.0	0.113	Cr
Со	50.0	0.59	5.0	0.031	Со
Cu	10.0	1.27	2.5	0.128	Cu
Fe	100.0	23.61	50.0	0.786	Fe
Pb	3.0	1.66	2.0	0.113	Pb
Mg	5000.0	15.81	500.0	3.063	Mg
Mn	15.0	0.40	1.5	0.048	Mn
Ni	10.0	0.94	4.0	0.105	Ni
К	10000.0	62.42	1000.0	13.753	К
Se	10.0	2.43	2.0	0.239	Se
Ag	10.0	0.85	0.5	0.063	Ag
Na	10000.0	12.80	1000.0	12.907	Na
TI	10.0	1.73	1.0	0.218	TI
V	50.0	0.77	5.0	0.101	V
Zn	20.0	2.81	2.0	0.193	Zn
В	100.0	1.02	10.0	0.143	В
Bi	20.0	1.04	2.0	0.140	Bi
Мо	20.0	1.48	2.0	0.074	Мо
Li	20.0	2.73	2.0	0.250	Li
Pd	50.0	1.75	5.0	0.173	Pd
SICP	50.0	4.99	5.0	0.648	SICP
Si	200.0	17.52	NA	NA	Si
Sr	10.0	0.25	1.0	0.170	Sr
Sn	10.0	1.29	5.0	1.488	Sn
Ti	10.0	0.81	1.0	0.620	Ti
W	50.0	9.30	5.0	1.074	W
Zr	10.0	1.72	2.0	0.101	Zr
	EPA				SW846
	245.1/SW846		CIN/046 7474 A	SIN/046 7474 A	7470A
	normal RI in	243.1/SVV846 7470A waters-	SVV840 /4/1A soils- normal RI	SVV840 /4/1A	normal MDI
	ua/l	normal MDL in ug/l	in ma/ka	MDL in ma/ka	in ma/l
Hg -CV	0.2	0.075	0.033	0.0127	0.000075
	EPA 7196			EPA 3060/	
	water RL in	EPA 7196 water	EPA 3060/ 7196A	7196A soils	
	mg/l	MDL in mg/l	soils RL in mg/kg	MDL in mg/kg	
CR6	0.01	0.0014	0.4	0.117	

CompoundList ReportProduct:VTO15STDVolatile OrganicsMatrix:AIR

Oct 13, 2008 11:31 am

Method List: Report List: RL/MDL Factor:	VTO14/15 AIR VTO15 AIR 1	Metho	od Ref:	TO-15		LJ26877 LJ17455
Compound		CAS No.	RL	MDL	Units	
Acetone		67-64-1	0.20	0.044	ppbv	
1.3-Butadiene		106-99-0	0.20	0.054	ppbv	
Benzene		71-43-2	0.20	0.017	ppbv	
Bromodichlorometh	ane	75-27-4	0.20	0.023	ppbv	
Bromoform		75-25-2	0.20	0.029	ppbv	
Bromomethane		74-83-9	0.20	0.031	ppbv	
Bromoethene		593-60-2	0.20	0.032	ppbv	
Benzyl Chloride		100-44-7	0.20	0.037	ppbv	
Carbon disulfide		75-15-0	0.20	0.018	ppbv	
Chlorobenzene		108-90-7	0.20	0.028	ppbv	
Chloroethane		75-00-3	0.20	0.026	ppbv	
Chloroform		67-66-3	0.20	0.021	ppbv	
Chloromethane		74-87-3	0.20	0.039	ppbv	
3-Chloropropene		107-05-1	0.20	0.029	ppbv	
2-Chlorotoluene		95-49-8	0.20	0.022	ppbv	
Carbon tetrachloride	9	56-23-5	0.20	0.027	ppbv	
Cyclohexane		110-82-7	0.20	0.034	ppbv	
1,1-Dichloroethane		75-34-3	0.20	0.021	ppbv	
1,1-Dichloroethylen	e	75-35-4	0.20	0.040	ppbv	
1,2-Dibromoethane		106-93-4	0.20	0.030	ppbv	
1,2-Dichloroethane		107-06-2	0.20	0.038	ppbv	
1,2-Dichloropropane	e	78-87-5	0.20	0.029	ppbv	
1,4-Dioxane		123-91-1	0.20	0.046	ppbv	
Dichlorodifluoromet	thane	75-71-8	0.20	0.030	ppbv	
Dibromochlorometh	ane	124-48-1	0.20	0.019	ppbv	
trans-1,2-Dichloroet	hylene	156-60-5	0.20	0.023	ppbv	
cis-1,2-Dichloroethy	lene	156-59-2	0.20	0.028	ppbv	
cis-1,3-Dichloroprop	pene	10061-01-5	0.20	0.027	ppbv	
m-Dichlorobenzene		541-73-1	0.20	0.044	ppbv	
o-Dichlorobenzene		95-50-1	0.20	0.040	ppbv	
p-Dichlorobenzene		106-46-7	0.20	0.044	ppbv	
trans-1,3-Dichloroph	ropene	10061-02-6	0.20	0.032	ppbv	
Ethanol		64-17-5	0.50	0.047	ppbv	
Ethylbenzene		100-41-4	0.20	0.018	ppbv	
Ethyl Acetate		141-78-6	0.20	0.046	ppbv	
4-Ethyltoluene		622-96-8	0.20	0.036	ppbv	
Freon 113		76-13-1	0.20	0.020	ppbv	
Freon 114		76-14-2	0.20	0.027	ppbv	
Heptane		142-82-5	0.20	0.021	ppbv	
Hexachlorobutadien	e	87-68-3	0.20	0.084	ppbv	
Hexane		110-54-3	0.20	0.054	ppbv	
2-Hexanone		591-78-6	0.20	0.025	ppbv	
Isopropyl Alcohol		67-63-0	0.20	0.036	ppbv	
Methylene chloride		75-09-2	0.20	0.040	ppbv	

Compound List Report Product: VTO15STD Volatile Organics Matrix: AIR Air

Page	2	of	2	

Oct 13, 2008 11:31 am

Method List: Report List: RL/MDL Factor:	VTO14/15 AIR VTO15 AIR 1	Meth	od Ref:		LJ26877 LJ17455	
Compound		CAS No.	RL	MDL	Units	
Methyl ethyl keton	e	78-93-3	0.20	0.039	ppby	
Methyl Isobutyl Ke	etone	108-10-1	0.20	0.022	ppbv	
Methyl Tert Butyl	Ether	1634-04-4	0.20	0.018	ppbv	
Propylene		115-07-1	0.50	0.053	ppbv	
Styrene		100-42-5	0.20	0.023	ppbv	
1, 1, 1-Trichloroeth	ane	71-55-6	0.20	0.026	ppbv	
1,1,2,2-Tetrachlor	oethane	79-34-5	0.20	0.024	ppbv	
1,1,2-Trichloroeth	ane	79-00-5	0.20	0.020	ppbv	
1,2,4-Trichlorober	izene	120-82-1	0.20	0.066	ppbv	
1,2,4-Trimethylber	nzene	95-63-6	0.20	0.024	ppbv	
1,3,5-Trimethylber	nzene	108-67-8	0.20	0.021	ppbv	
2,2,4-Trimethylper	ntane	540-84-1	0.20	0.026	ppbv	
Tertiary Butyl Alco	ohol	75-65-0	0.20	0.027	ppbv	
Tetrachloroethylen	e	127-18-4	0.20	0.027	ppbv	
Tetrahydrofuran		109-99-9	0.20	0.027	ppbv	
Toluene		108-88-3	0.20	0.020	ppbv	
Trichloroethylene		79-01-6	0.20	0.029	ppbv	
Trichlorofluorome	thane	75-69-4	0.20	0.029	ppbv	
Vinyl chloride		75-01-4	0.20	0.031	ppbv	
Vinyl Acetate		108-05-4	0.20	0.088	ppbv	
m,p-Xylene			0.20	0.10	ppbv	
o-Xylene		95-47-6	0.20	0.026	ppbv	
Xylenes (total)		1330-20-7	0.20	0.026	ppbv	

67 compounds reported in list VTO15

CompoundList ReportProduct:VTO15STDVolatile OrganicsMatrix:AIR

Sep 17, 2009 06:14 pm

Method List: Report List: RL/MDL Factor:	VTO14/15 AIR VTO15 AIR 4	Metho	od Ref:		LJ29994 LJ17455	
Compound		CAS No.	RL	MDL	Units	
Acetone		67-64-1	1.9	0.37	ug/m3	
1,3-Butadiene		106-99-0	1.8	0.32	ug/m3	
Benzene		71-43-2	2.6	0.27	ug/m3	
Bromodichlorometh	ane	75-27-4	5.2	0.76	ug/m3	
Bromoform		75-25-2	8.4	0.92	ug/m3	
Bromomethane		74-83-9	3.1	0.38	ug/m3	
Bromoethene		593-60-2	3.5	0.32	ug/m3	
Benzyl Chloride		100-44-7	4.0	0.68	ug/m3	
Carbon disulfide		75-15-0	2.5	0.40	ug/m3	
Chlorobenzene		108-90-7	3.7	0.48	ug/m3	
Chloroethane		75-00-3	2.1	0.44	ug/m3	
Chloroform		67-66-3	3.9	0.56	ug/m3	
Chloromethane		74-87-3	1.6	0.39	ug/m3	
3-Chloropropene		107-05-1	2.5	0.38	ug/m3	
2-Chlorotoluene	95-49-8	4.0	0.44	ug/m3		
Carbon tetrachloride		56-23-5	5.2	0.56	ug/m3	
Cyclohexane		110-82-7	2.8	0.84	ug/m3	
1,1-Dichloroethane		75-34-3	3.2	0.52	ug/m3	
1,1-Dichloroethylen	ie	75-35-4	3.2	0.68	ug/m3	
1,2-Dibromoethane		106-93-4	6.0	0.64	ug/m3	
1,2-Dichloroethane		107-06-2	3.2	0.60	ug/m3	
1,2-Dichloropropan	e	78-87-5	3.7	0.52	ug/m3	
1,4-Dioxane		123-91-1	2.9	0.92	ug/m3	
Dichlorodifluorome	thane	75-71-8	4.0	0.48	ug/m3	
Dibromochlorometh	nane	124-48-1	6.8	1.2	ug/m3	
trans-1,2-Dichloroe	thylene	156-60-5	3.2	0.56	ug/m3	
cis-1,2-Dichloroethy	ylene	156-59-2	3.2	0.44	ug/m3	
cis-1,3-Dichloropro	pene	10061-01-5	3.6	0.35	ug/m3	
m-Dichlorobenzene		541-73-1	4.8	0.76	ug/m3	
o-Dichlorobenzene		95-50-1	4.8	0.88	ug/m3	
p-Dichlorobenzene		106-46-7	4.8	0.76	ug/m3	
trans-1,3-Dichlorop	ropene	10061-02-6	3.6	0.29	ug/m3	
Ethanol		64-17-5	3.8	0.56	ug/m3	
Ethylbenzene		100-41-4	3.5	0.34	ug/m3	
Ethyl Acetate		141-78-6	2.9	0.72	ug/m3	
4-Ethyltoluene		622-96-8	3.9	0.84	ug/m3	
Freon 113	Freon 113		6.0	0.68	ug/m3	
Freon 114		76-14-2	5.6	0.60	ug/m3	
Heptane		142-82-5	3.3	0.40	ug/m3	
Hexachlorobutadien	e	87-68-3	8.4	1.8	ug/m3	
Hexane		110-54-3	2.8	0.27	ug/m3	
2-Hexanone		591-78-6	3.3	0.48	ug/m3	
Isopropyl Alcohol		67-63-0	2.0	0.34	ug/m3	
Methylene chloride		75-09-2	2.8	0.35	ug/m3	

CompoundList ReportProduct:VTO15STDVolatile OrganicsMatrix:AIR

Page	2	of	2
1 age	4	01	4

Sep 17, 2009 06:14 pm

Method List: Report List: RL/MDL Factor:	VTO14/15 AIR VTO15 AIR 4	Meth	od Ref:		LJ29994 LJ17455		
Compound		CAS No.	RL	MDL	Units		
Methyl ethyl ketone		78-93-3	2.4	0.48	ug/m3		
Methyl Isobutyl Ket	one	108-10-1	3.3	0.72	ug/m3		
Methyl Tert Butyl E	ther	1634-04-4	2.9	0.32	ug/m3		
Propylene		115-07-1	3.4	0.44	ug/m3		
Styrene		100-42-5	3.4	0.31	ug/m3		
1,1,1-Trichloroetha	ne	71-55-6	4.4	0.52	ug/m3		
1,1,2,2-Tetrachloroe	ethane	79-34-5	5.6	0.64	ug/m3		
1,1,2-Trichloroethar	ne	79-00-5	4.4	0.48	ug/m3		
1,2,4-Trichlorobenz	ene	120-82-1	6.0	2.0	ug/m3		
1,2,4-Trimethylbenz	zene	95-63-6	3.9	0.44	ug/m3		
1,3,5-Trimethylbenz	zene	108-67-8	3.9	0.52	ug/m3		
2,2,4-Trimethylpent	ane	540-84-1	3.7	0.38	ug/m3		
Tertiary Butyl Alcol	nol	75-65-0	2.4	0.28	ug/m3		
Tetrachloroethylene		127-18-4	1.1	0.56	ug/m3		
Tetrahydrofuran		109-99-9	2.4	0.38	ug/m3		
Toluene		108-88-3	3.0	0.27	ug/m3		
Trichloroethylene		79-01-6	0.84	0.40	ug/m3		
Trichlorofluorometh	ane	75-69-4	4.4	0.48	ug/m3		
Vinyl chloride		75-01-4	2.0	0.24	ug/m3		
Vinyl Acetate		108-05-4	2.8	0.64	ug/m3		
m,p-Xylene			3.5	0.80	ug/m3		
o-Xylene		95-47-6	3.5	0.40	ug/m3		
Xylenes (total)		1330-20-7	3.5	0.40	ug/m3		

67 compounds reported in list VTO15

ATTACHMENT

F-1. Résumé of Ms. Judy Harry of Data Validation Systems

JUDY V. HARRY P. O. Box 208 120 Cobble Creek Rd. North Creek, NY 12853

Occupation:	Data Validator/Environmental Technical Consultant
Years Experience:	35
Education:	B.S., Chemistry, Magna cum laude, 1976, Phi Beta Kappa
Certifications:	New York State Woman-Owned Business Enterprise (WBE)
Relevant Work History:	

Data Validation Services: September 1989 - present

Sole proprietor of Data Validation Services, a woman owned small business, CCR registered, certified by ORCA, providing consultation/validation services to regulatory and commercial clients.

These services include the review of analytical laboratory data for compliance with respect to specific protocols, accuracy and defensibility of data, verification of reported values, and evaluation of quality parameters for analytical usability of results. Approved by USEPA, NYSDEC, NJDEP, and NYCDEP as a data validator for projects, including USEPA Superfund, Brownfield, and lead sites, and those contracted through the NYSDEC Division of Hazardous Waste Remediation, Division of Solid Waste, and Division of Water Quality.

Performed validation for compliance with laboratory analytical protocols including USEPA OLM, USEPA OLC, USEPA ILM, USEPA DFLM, USEPA SOW3/90, USEPA SOW 7/87 CLP, USEPA SOW 2/88 CLP, USEPA SW846, RCRA, AFCEE, NYS 6 NYCRR Part 360, 40 CFR, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, including TO-15, 1989/1991/1995/2000/2005 NYSDEC ASPs, and 1987 NYSDEC CLP.

Performed validation according to the USEPA National and Regional SOPs and Functional Guidelines, AFCEE requirements, NYSDEC Validation Scope of Work, and NJDEP Division of Hazardous Site Mitigation/Publicly Funded Site Remediation SOPs.

Performed validation for USEPA Superfund Sites including Salem Acres, York Oil, Port Washington L-4 Landfill, Bridgeport Rental and Oil Services, MMR/ OTIS AFB, LCP, and Peter Cooper site; and for USEPA lead sites including SJ&J Piconne, Maska, Bowe System, Jones Sanitation, and Syossett Landfill, involving CLP, RAS, and SAS protocols.

Contracted for NYSDEC Superfund Standby Contracts with LMS Engineers, CDM, Malcolm-Pirnie, Ecology & Environment, HDR, Shaw Environmental, and EC Jordan, involving samples collected at NYS Superfund Sites and analyzed under the NYSDEC ASP.

Performed validation services for NYSDEC Phase II remedial investigations, RI/FS projects, Brownfield sites, and PRP over-site projects for hazardous waste sites.

Performed validation services for clients conducting RI/FS activities involving samples of many matrices, including waste, air, sludges, leachates, solids/sediments, aqueous, and biota.

Clients have included Arcadis Geraghty & Miller, Barton & Loguidice, Benchmark, Bergmann Associates, Blasland, Bouck & Lee, Brown and Caldwell, Camp Dresser & McKee, C&S Consulting Engineers, Clough Harbour & Associates, Columbia Analytical Services, C.T. Male, Dames & Moore, Day Engineering, EA Engineering, Ecology & Environment, EC Jordan, Environmental Chemical Corporation, EHRT, ENSR Consulting, ERM-Northeast, Fagan Engineers, Fanning Phillips & Molnar, FluorDaniel GTI, Frontier, Foster Wheeler Environmental Corp, Frontier Technical, Galson Consultants, Geomatrix Consultants, GZA Environmental, Handex of N, H2M Group, HDR, IT Corp, Jacques Whitford, JTM Associates, Leader Environmental, Langan Engineers, Lockwood, Kessler & Bartlett, LMS Engineers, Malcolm-Pirnie, Metcalf & Eddy, NWEC&C, O'Brien & Gere Engineers, Parsons Engineering-Science, Plumley Engineering, Prescott Environmental, P. W. Grosser, Rizzo Associates, Roux Associates, Sear Brown Group, SECOR, Shaw Environmental, Stantec, ThermoRemediation Inc., TRC Environmental, Turnkey Environmental Restoration, TVGA Engineering, URS Consultants, Wehran Emcon, Weston, YEC, and private industries.

Provided consultation services to laboratories regarding analytical procedures and protocol interpretation, and to law firms for litigation support.

Provided services to firms involving audits of environmental analytical laboratories to determine analytical capability, particularly for compliance with NYSDEC ASP and AFCEE requirements.

Guest speaker on a panel discussing Data Review/Compliance and Usability, for an analysis workshop for the New York Association of Approved Environmental Laboratories, 1993.

Adirondack Environmental Services: June 1987 - August 1989

Senior mass spectroscopist for AES. Responsible for GC/MS analyses of environmental samples by USEPA and NYSDEC protocols, development of the GC/MS laboratory, initiating the instrumental and computer operations from the point of installation, and for implementing the procedures and methodologies for Contract Laboratory Protocol.

CompuChem Laboratories: May 1982 - January 1987

Managed a GC/MS production laboratory; developed, implemented, and supervised QA/QC criteria at three different levels of review; and was responsible for the development and production of the analysis of environmental and clinical samples. Directed a staff of 23 technical and clerical personnel, and managed the extraction and GC/MS labs and data review operations.

Research Triangle Institute: December 1979 - May 1982

Worked as an analytical research chemist responsible for development of analytical methods for the EPA Federal Register at RTI. This involved analysis of biological and environmental samples for priority pollutants, primarily relating to wastewaters and to human sampling studies. Method development included modification and interfacing of the initially developed Tekmar volatile purge apparatus to GC/MS, development and refinement of methods for entrapment and concentration of the air medium for subsequent volatile analysis, and the analysis and resolution/ identification of individual PCB congeners within Aroclor mixtures by capillary column and mass spectra.

Guardsman Chemical Company: February 1977 - November 1979

Performed all quality control functions for the manufacturing plant. Performed research and development on coatings and dyes.

Almay Cosmetics: May 1976 - December 1976

Product evaluation chemist. Responsible for analytical QC of manufactured products.

APPENDIX G

Site Inspection Checklist

Site Inspection Checklist, 149 Kent Avenue, Brooklyn, NY

Date:

Completed By:

		Status		
		Action		
Description	Ok	Req.	N/A	Actions Taken / Comments
Site Cover System				
 Inspect site cover system for cracks and leaks. 				
Sub-Slab Depressurization System Blower No. 1				
A. Aboveground Piping on Roof				
 Inspect aboveground piping for cracks, leaks and support issues. 				
2 Inspect vacuum/pressure gauges and flowmeters for proper operation.				
B. Electrical				
 Check that the electrical control panel is closed/secured. 				
2 Confirm that the alarm light is functioning properly.				
C. Blower Enclosure				
 Inspect condition of exhaust fan, thermostat and louver. 				
D. Gallon Knock-out Tank				
1 Check condition of vacuum filter.				
2 Check dilution valve for noises or leaks.				
4 Check for presence of water in knockout tank.				
E. Vapor Phase Carbon Units (If Installed)				
1 Inspect and check pressure gauges.				
2 Check for any leaks on piping, fittings, etc.				
Sub-Slab Depressurization System Blower No. 2				
A. Aboveground Piping on Roof				
 Inspect aboveground piping for cracks, leaks and support issues. 				
2 Inspect vacuum/pressure gauges and flowmeters for proper operation.				
B. Electrical				
1 Check that the electrical control panel is closed/secured.				
2 Confirm that the alarm light is functioning properly.				
C. Blower Enclosure				
1 Inspect condition of exhaust fan, thermostat and louver.				
D. Gallon Knock-out Tank				
1 Check condition of vacuum filter.				
2 Check dilution valve for noises or leaks.				
4 Check for presence of water in knockout tank.				
E. Vapor Phase Carbon Units (If Installed)				
1 Inspect and check pressure gauges.				
2 Check for any leaks on piping, fittings, etc.				
Institutional Controls				
1 Confirm that the site usage is in compliance with the institutional				
controls.				
Site Records				
1 Inspect site records and confirm that they are up to date (e.g., Site				
Inspection Checklists and Sub-Slab Depressurization System				
Operations Logs, sampling logs, etc.)				

APPENDIX H

Sub-Slab Depressurization System Operations and Maintenance Log

Sub-Slab Depressurization System Operations and Maintenance Log, 149 Kent Avenue, Brooklyn, NY

Reason for Inspection (Check all that apply):

Monthly Site Inspection	
-------------------------	--

Repair/ Maintenance

Source of Reading	Units	Values	Comments
Blower No. 1			
System Operational? If not, list reason.			Y / N
Vacuum at Aboveground Piping (at roof line)	Inches of Water		
MP-1	Inches of Water		
Knock-Out Tank Vacuum	Inches of Water		
Blower No. 1Inlet Vacuum	Inches of Water		
Blower No. 1 Discharge Pressure	Inches of Water		
Blower Effluent PID Reading	PPMV		
VPGAC Unit Effluent PID Reading (If Applicable)	PPMV		
Blower No. 2			
System Operational? If not, list reason.			Y / N
Vacuum at Aboveground Piping (at roof line)	Inches of Water		
MP-2	Inches of Water		
Knock-Out Tank Vacuum	Inches of Water		
Blower No. 2 Inlet Vacuum	Inches of Water		
Blower No. 2 Discharge Pressure	Inches of Water		
Blower Effluent PID Reading	PPMV		
VPGAC Unit Effluent PID Reading (If Applicable)	PPMV		

Is the System operating within the acceptable conditions?

If no, was the condition corrected and how?

Were any maintenance activities performed?

If yes, please record maintenance activities performed.

Form Completed By

Signature

Date & Time

APPENDIX I

Monitoring Well Construction Logs



ROUX ASSOCIATES, INC. Environmental Consulting & Management 209 Shafter Street Islandia, NY 11749 Telephone: (631) 232-2600 Fax: (631) 232-9898

Page	1 of 1			WE	ELL CO	ONSTRU	CTION LOG					
	NO. OW-3		NO NO	RTHING t Measure	d	EASTING Not Meas	sured					
2158.0	0001Y002 / 149	Ken	t Ave	e (C224159))	140 Kont	Avenue					
APPRO	VED BY		LOC	GGED BY	,	- 149 Kent						
W. Mo	DITEROSSO		J. \ FR	Wills		GEOGRAPH	I, NEW YORK					
Aquife	er Drilling and	Test	ing /	Chris Migl	liori	On N5th	Street sidewalk, 16	7 feet	NW of	buildin	g corner at W	ythe Aven
DRILL B		E	BORE	HOLE DIAME	TER	DRILLING E	QUIPMENT/METHOD	SAMP	LING MI	ETHOD	START-FINIS	
4.25-If CASING	n . / Auger G MAT./DIA.		8-Inc	EN:		LC55 / H	5A	2 1			1/15/14-1/1	6/14
PVC /	2-inch		T	PE Slotted	A N	ИАТ. РVС	TOTAL LENGTH	2.0 ft	DIA.	2-inch	SLOT SIZE	20-Slot
ELEVAT	FION OF:	GRO	UND S	URFACE	TOP OF V	VELL CASING	TOP & BOTTOM SCF	REEN		GRAVEL #2	PACK SIZES	
(i eet)	8-inch flush			2-inch j-plug	g		1					
)epth, feet	mounted		\leq		Graphic Log	Visual	Description	B Co	low unts er 6"	PID Values (ppm)	REMAR	(S
		Ń	ز الم الرزيار	Concrete	0,	Reinforced CON	NCRETE			(PP)	Hand cleared to 5	feet bls.
			X/r			FILL (Brown to	dark brown, fine to coarse	_		0.0		
						SAND, some Si	It and Gravel, little Brick,			0.0		
			×××-	Grout		trace metal, mo	iət <i>j</i>					
	, XXXX											
	, vite and the second sec		\sim	6 feet of 2-inch						0.1		
				schedule 40	444				P	1		
			~~~	PVC riser								
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		$\sim\sim$			Grey, fine SAN	D, little silt, trace coarse			0.1		
	~~~~		~~~			sand and grave	l; moist			0.1		
			_	Bentonite								
5												_
						Dark reddish bro	own, fine SAND, little Silt;			0.4	4 foot recovery.	
						verymolet						
		-	-	#2 Sand								
						Brown, SILT, so medium to coar	me fine Sand, trace se sand, gravel and clay:			0.5		
						moist	·····, g. ····· ····, ,					
<u> </u>						Grey. SILT. little	e fine Sand: wet			0.4	4.8 foot recovery	_
						, ,	,			0.4	is is is it	
				10.5 / 5		Brown, fine SAN	ND and SILT, little medium			0.5		
				12 teet of 2-inch		to tourse oanu						
				diameter, 20-slot, screen								
										0.6		••
										0.0		
5												_
						Dark brown, fine	e SAND, little Silt; wet			0.4	3 foot recovery.	_
												••
						Dark brown fine	SAND and SILT little					
						Clay, trace coar	se sand; wet			0.4	Bottom of boring	at 18 feet
			<u>.</u>	Well Plua							bls.	



ROUX ASSOCIATES, INC. Environmental Consulting & Management 209 Shafter Street Islandia, NY 11749 Telephone: (631) 232-2600 Fax: (631) 232-9898

Page	1 of 1		WELL CO	ONSTRU	CTION LOG				
WELL N	0. <b>OW-4</b>	NORTHING	3 sured	EASTING Not Mea	sured				
PROJEC	CT NO./NAME			LOCATION					
2158.0 APPRON	1001Y002 / 149 Ke VED BY	LOGGED F	<b>:4159)</b> 3Y	149 Ken	t Avenue				
		R. Lomb	ino	Brookly	n, New York				
	IG CONTRACTOR/DRIL	LER		GEOGRAP On N5th	HIC AREA Street sidewalk. 16	7 feet NW	of buildin	a corner at Wythe	Avenu
	IT DIAMETER/TYPE	BOREHOLE I	DIAMETER	DRILLING E	EQUIPMENT/METHOD	SAMPLING	METHOD	START-FINISH DAT	E
4.25-in	n. / Drive Sampler	10-inches		CME-55	/ HSA	2" Macro	o-Core	4/7/14-4/7/14	
PVC / 2	2-inch	TYPE SI	otted	MAT. <b>PVC</b>	TOTAL LENGTH	<b>15.0</b> ft DI	A. 2-inch	SLOT SIZE 20-SI	ot
ELEVAT	ION OF: GRO	OUND SURFAC	E TOP OF	WELL CASING	TOP & BOTTOM SCF	REEN	GRAVEL	PACK SIZES	
(reel)	8-inch flush	2-inc	h j-plug		I		πι		
)epth, foot	manhole		Graphic	Visua	I Description	Blow Counts	PID Values	REMARKS	
				Littlith / Dro. Close	rad	per 6"	(ppm)	1 P b d . b d t	
				Utility Pre-Clea	rea			feet	05
	, XXX		HHH						
			PAT				М		
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		HTT						
5			bbb						-
5	ž			Dark brown, Sl	LT, trace clay; moist		2.5	4' recovery	5
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						-	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								
		15 ft of	2 inch						
		schedu	lle 40						
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								
10	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Crout							10
				Dark brown, fin	ne to medium SAND, some		12.9	4' recovery	
	$\sim \sim \sim$	$\diamond$ $\diamond$ $\diamond$							
		- Benton	ite	Light gray, SIL ⁻	T, some fine Sand; wet		5.1		
	, in the second s	#1 San	d  .						
5				Dark brown, fin	e SAND and SILT, little		8.5	3' recovery	_15
				medium to coa	rse Sand, trace gravel; wet		0.0	orecovery	
				Light gray, SIL	T, little fine Sand; wet		11.7		
			× _ × _	Dark brown. fin	e SAND and SILT. little		30.6		
				medium to coa	rse Sand, trace gravel; wet				
20									20
				Dark brown, fin	ne to medium SAND, some		5.7	5' recovery	
				Light brown, Cl	LAYEY SAND, some Silt,		67.7		
				trace gravel; ve	ery moist				
		15 ft of 20-slot	2-inch, PVC						
		screen							
			<i>-</i>  - <u>-</u>  -	Dark brown, me	edium to coarse SAND, little	e —	88.1		
25			그는 탄말	Silt, trace grave	el; wet light grav_SILT_little_fine		/0.5		25
				Sand, trace gra	avel; wet		49.0	J IECOVELY	
				Dark brown, me	edium to coarse SAND, little	e	797.3	Odor	
				fine Sand, trace	e silt and gravel; wet				
30								End of boring at 30'	30
		- 1		1		1		Ling of Dorling at 30	50



ROUX ASSOCIATES, INC. Environmental Consulting & Management

209 Shafter Street Islandia, NY 11749 Telephone: (631) 232-2600 Fax: (631) 232-9898

Page	1 of 1			WE	ELL C	<b>CON</b>	ISTRU	<b>CTION LOG</b>	ì				
WELL N	10. OW 5		NO		d		EASTING	sured					
PROJEC	CT NO./NAME			livieasure	u		LOCATION	Suleu					
2158.0	001Y002 / 149	Ke	nt Ave	e (C224159	9)		149 Ken	t Avenue					
APPRO	VED BY						Brookly	n, New York					
DRILLIN	IG CONTRACTOR/	DRIL	LER				GEOGRAP		107 fa at		منا ما ا		Alitha Airen
ADT /	ROD		BORE		TER			OLIPMENT/METHOD	SAME		DUIIDIN ETHOD		ISH DATE
4.25-ir	n. / Drive Samp	⊳ler	10-in	iches			CME-55	/ HSA	2" N	lacro-C	Core	4/7/14-4/7	7/14
CASING	MAT./DIA.		SCRE	EN:			DV (O		45.0.		<u>.</u>		
ELEVAT	ION OF:	GRC	UND S	<u>/PE <b>SIOTTEC</b></u> URFACE	TOP C	MAT. F WEL	L CASING	TOTAL LENGTH TOP & BOTTOM S	15.0ft CREEN	DIA.	GRAVE	SLOT SIZE	20-5100
(Feet)								1			#1		
	8-inch flush mounted		/	2-inch j-plug	g O Li				В	Blow	PID		
lepth, feet	manhole		$\leq$		Graphic Log		Visua	l Description	Co	ounts er 6"	Values	REMA	RKS
				Concrete	LLL	L Ut	tilitv Pre-Clea	red	р. 			Location hand c	leared to 5
			Kin		PH.	21 -						feet	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1			HH	A							
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1			btt	1							
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				HH	21				$\sim$	1		
					PH -	A							
5					HH	1							
5	Ň						o recovery				1	No recovery	_:
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~												
	$\sim$												
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~									C			
				15 ft of 2-inch, schedule 40									
				PVC riser									
10													1
<u> </u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		×××-	Grout	17. T E -	- Da	ark brown, fin	e SAND and SILT, little			0.7	3' recovery	<u> </u>
	~~~~		~~~~			m	edium Sand,	trace gravel; wet					
				Bentonite									
				Demonito		- Da	ark brown, fin edium sand	e SAND and Silt, trace			0.5		
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						,						
15	\sim												1
						- Da	ark brown, fin	e SAND and SILT, trace			0.6	5' recovery	
						9"							
							ork brown SI				0.6		
					× × ×		ark drown, Si				0.6		
					[]]] []	- Da	ark brown, fin	e to medium SAND, little			1.4		
			-	#1 Sand			it, tiace grave	si, wei					
20	유 한					_							_2
						- Da	ark brown, fin It, trace grave	ie to coarse SAND, some el; wet	2		1.2	5' recovery	
				15 ft of 2-inch, 20-slot, PVC									
				screen									
25											12	2' recovery	2
											1.2	- 10000019	
					-	.							
						÷.							
20						÷						E . 1. (2)	
30												End of boring at	130' 3

Groundwater Sampling Log

Well Sampling Data Form

Client:	_				P	roject Number:				
Site Location:	_									
					M/oothor:					
Dete:	-			Durgo Wator	Disposel:					
Somolod By:	-				tor / Type:					
Sampleu by.	-				ter / Type					
Depth of Well (ft):	: _			Water Column (ft):						
Depth to Water(ft)):			Volur	me of Water in W	/ell (gal)				
Depth to Product ((ft):			Volumeo	f Water to Remov	ve(gal):				
well diame	ter:		1 in	2 in	4 in	6 in	8 in			
gallons per fo	oot:		0.041	0.163	0.653	1.469	2.611			
Start Purging					Pur	ae Rate:				
End Purging:	-			Volume	of Water Remove	ed (aal):				
Method of Purge:	-									
	-			-						
Physical Appearan	nce/									
Comments:	-									
Samples Collected	d:									
(analyses / no. dotties	5) -									
	-									
Sample Ti	me:	Laboratory :								
Duplicate Sample	e/Time:									
Field Measureme	ents:	Discha	rge Rate:	3.0	Refill Rate:	8.0	PSI : 15			
Time	DTW	Flow Rate	ORP	Conductivit	y Turbidity	рН	Temperature	Dissolved O ₂		
	ft	ml/min.	mV	mS/cm	NTU.	SU	C°	mg/L		
<u></u>	<u> </u>		. (+/- 10 mV)	(w/in 3%)	(w/m %10)	····(+/-·0.1)·	(w/in 3%)	(w/m 10%)		
			End	of Parameter	M easur ements					

Sub-Slab Depressurization System Component Specifications



The Leader in Blower & Vacuum Solutions 460 West Gay Street West Chester, PA 19380

Arctic Air Conditioning Systems 3815 Rombouts Avenue Bronx, NY 10466

PO # 29469

Submittal Documentation

Gasho SVE Blower Package Consisting of AMETEK Model # EN 505AX58ML, MS200PS, D-100DS Enclosure and NEMA 4 Panel

JG15B-2950

August 6, 2015

C		1100		Description	Date	Revision
G	ash	🕘 Ga	sho, Inc.			
The Leader in	Blower & Vacuu	II982 BLOW	er Package			
		DIOW	el l'ackage			
		JG15E	3-2950 Rev. B	Updated Control Panel Dwg	6/2/2015	A
		(2)	Identical Units	Updated ML with 900	8/5/2015	В
ltem	Qty.	Supplier	Description	Part Number	Misc ID	Weight
1	1	Ametek Rotron	Regenerative Blower	EN505AX58ML	P/N 038177	92
2	1	Gasho	Bent Plate	w/extension for KO tank		45
2.1	4	McMaster Carr	Lifting Lugs	3014T471		
3	1	Solberg Mfg.	2" Inline Filter	CSL-851-200HC		15
4	1	Westwood	1-1/2" Dilution Valve	EMSP-15		8
4.01	1	Apollo	1 1/2" Bronze Ball Valve	77F-107-01		2
5	1	Fisher	1" Relief Valve	289H-41	set @ 45" H2O	3
6	2	Gasho	Vacuum Gauges	25.0.012.HG.160.IWC		1
7	1	Gasho	Pressure Gauge	25.0.006.PSI.160.IWC		1
8	3	SMC Specialties	Isolation Valves	VA BRS 025-4F4M-BT		1
9	1	Ametek Rotron	Moisture Separator	MS200PS	P/N 038519	47
9.1	1	Dwyer	Level Switch	L6-EPB-B-S-3-O		1
10	1	Dyer Fiberglass	Weather Enclosure	D-100HS with fan		
10.1	1	Dyer Fiberglass	7" Ventilation fan with thermostat			
10.2	1	Dyer Fiberglass	Stainless Steel hinge			
10.3	2	Dyer Fiberglass	Hoods			
11	1	ICP	Nema 4 Control Panel	2950 GASH137A		40
900	1	ICP	Nema 12 Remote Alarm Panel			
					Total Weight	256



Environmental / Chemical Processing Blowers

ROTRON[®]

EN 505 & CP 505

2.0 / 2.5 HP Sealed Regenerative w/Explosion-Proof Motor



IN MM

NOTES

1>TERMINAL BOX CONNECTOR HOLE 3/4" NPT.

2 DRAWING NOT TO SCALE, CONTACT FACTORY FOR SCALE CAD DRAWING.

3 CONTACT FACTORY FOR BLOWER MODEL LENGTHS NOT SHOWN.

		Part/Model Number			
		EN505AX58ML	EN505AX72ML	CP505FS58MLR	CP505FS72MLR
Specification	Units	038177	038178	080655	038962
Motor Enclosure - Shaft Mtl.	-	Explosion-proof-CS	Explosion-proof-CS	Chem XP-SS	Chem XP-SS
Horsepower	-	2.0	2.0	2.0	2.0
Phase - Frequency	-	Single-60 hz	Three-60 hz	Single-60 hz	Three-60 hz
Voltage	AC	115/230	230/460	115/230	230/460
Motor Nameplate Amps	Amps (A)	22/11	5.8/2.9	22/11	5.8/2.9
Max. Blower Amps	Amps (A)	24/12	6.4/3.2	24/12	6.4/3.2
Inrush Amps	Amps (A)	112/56	56/28	112/56	56/28
Service Factor	-	1.0	1.0	1.0	1.0
Starter Size	-	1/0	0/0	1/0	0/0
Thermal Protection	-	Class B - Pilot Duty			
XP Motor Class - Group	-	I-D, II-F&G	I-D, II-F&G	I-D, II-F&G	I-D, II-F&G
Chipping Waight	Lbs	92	84	92	84
	Kg	41.7	38.1	41.7	38.1

Voltage - ROTRON motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: 208-230/415-460 VAC-3 ph-60 Hz and 190-208/380-415 VAC-3 ph-50 Hz. Our dual voltage 1 phase motors are factory tested and certified to operate on both: 104-115/208-230 VAC-1 ph-60 Hz and 100-110/200-220 VAC-1 ph-50 Hz. All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

Operating Temperatures - Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

Maximum Blower Amps - Corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

XP Motor Class - Group - See Explosive Atmosphere Classification Chart in Section I

This document is for informational purposes only and should not be considered as a binding description of the products or their performance in all applications. The performance data on this page depicts typical performance under controlled laboratory conditions. AMETEK is not responsible for blowers driven beyond factory specified speed, temperature, pressure, flow or without proper alignment. Actual performance will vary depending on the operating environment and application. AMETEK products are not designed for and should not be used in medical life support applications. AMETEK reserves the right to revise its products without notification. The above characteristics represent standard products. For product designed to meet specific applications, contact AMETEK Technical & Industrial Products Sales department.

D 7



Environmental / Chemical Processing Blowers

EN 505 & CP 505

2.0 / 2.5 HP Sealed Regenerative w/Explosion-Proof Motor

FEATURES

- Manufactured in the USA ISO 9001 and NAFTA compliant
- Maximum flow: 150 SCFM
- Maximum pressure: 75 IWG
- Maximum vacuum: 70 IWG
- Standard motor: 2.0 HP, explosion-proof
- Cast aluminum blower housing, impeller , cover & manifold; cast iron flanges (threaded); teflon[®] lip seal
- UL & CSA approved motor with permanently sealed ball bearings for explosive gas atmospheres Class I Group D minimum
- Sealed blower assembly
- · Quiet operation within OSHA standards

MOTOR OPTIONS

- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepowers for application-specific needs

BLOWER OPTIONS

- · Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- · Slip-on or face flanges for application-specific needs

ACCESSORIES

- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges, & relief valves
- Switches air flow, pressure, vacuum, or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)
- Variable frequency drive package





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ROTRON[®]

SERVICE AND PARTS MANUAL FOR BLOWER MODEL

EN454 – EN656



ROTRON Industrial Products 627 lake Street, Kent, ohio 44240 U.S.A. Telephone: 330-673-3452 Fax: 330-677-3306 e-mail: <u>rotronindustrial@ametek.com</u> internet: <u>www.ametektip.com</u>



Your Choice. Our Commitment.™

WARRANTY, INSTALLATION, MAINTENANCE AND TROUBLESHOOTING INSTRUCTIONS





TECHNICAL AND INDUSTRIAL PRODUCTS 627 Lake Street, Kent, Ohio 44240 USA Telephone: 330-673-3452 Fax: 330-677-3306 e-mail: <u>rotronindustrial@ametek.com</u> web site: <u>WWW.ametektip.com</u>

- 1. AMETEK Rotron DR, EN and HiE regenerative direct drive blowers are guaranteed for one full year from the date of installation (limited to 18 months from the date of shipment) to the original purchaser only. Should the blower fail we will evaluate the failure If failure is determined to be workmanship or material defect related, we will at our option repair or replace the blower.
- 2. AMETEK Rotron Minispiral, Revaflow, Multiflow, Nautilair, remote drive blowers, moisture separators, packaged units, CP blowers, Nasty Gas[™] models and special built (EO) products are guaranteed for one full year from date of shipment for workmanship and material defect to the original purchaser only. Should the blower fail, If failure is determined to be workmanship or material defect related, we will at our option repair or replace the blower.
- 3. **Parts Policy** AMETEK Rotron spare parts and accessories are guaranteed for three months from date of shipment for workmanship and material defect to the original purchaser only. If failure is determined to be workmanship or material defect related we will at our option repair or replace the part.

Corrective Action - A written report will be provided indicating reason(s) for failure, with suggestions for corrective action. Subsequent customer failures due to abuse, misuse, misapplication or repeat offense will not be covered. AMETEK Rotron will then notify you of your options. Any failed unit that is tampered with by attempting repair or diagnosis will void the warranty, unless authorized by the factory.

Terms and Conditions - Our warranty covers repairs or replacement of regenerative blowers only, and will not cover labor for installation, outbound and inbound shipping costs, accessories or other items not considered integral blower parts. Charges may be incurred on products returned for reasons other than failures covered by their appropriate warranty. Out-of-warranty product and in warranty product returned for failures determined to be caused by abuse, misuse, or repeat offense will be subject to an evaluation charge. Maximum liability will in no case exceed the value of the product purchased. Damage resulting from mishandling during shipment is not covered by this warranty. It is the responsibility of the purchaser to file claims with the carrier. Other terms and conditions of sale are stated on the back of the order acknowledgement.

Installation Instructions for SL, DR, EN, CP, and HiE Series Blowers

- 1. **Bolt It Down** Any blower must be secured against movement prior to starting or testing to prevent injury or damage. The blower does not vibrate much more than a standard electric motor.
- 2. **Filtration** All blowers should be filtered prior to starting. Care must be taken so that no foreign material enters the blower. If foreign material does enter the blower, it could cause internal damage or may exit at extremely high velocity.

Should excessive amounts of material pass through the blower, it is suggested that the cover(s) and impeller(s) be removed periodically and cleaned to avoid impeller imbalance. Impeller

imbalance greatly speeds bearing wear, thus reducing blower life. Disassembling the blower will void warranty, so contact the factory for cleaning authorization.

- 3. **Support the Piping** The blower flanges and nozzles are designed as connection points only and are not designed to be support members.
 - Caution: Plastic piping should not be used on blowers larger than 1 HP that are operating near their maximum pressure or suction point. Blower housing and nearby piping temperatures can exceed 200°F. Access by personnel to the blower or nearby piping should be limited, guarded, or marked, to prevent danger of burns.
- 4. **Wiring** Blowers must be wired and protected/fused in accordance with local and national electrical codes. All blowers must be grounded to prevent electrical shock. Slo-Blo or time delay fuses should be used to bypass the first second of start-up amperage.
- 5. **Pressure/Suction Maximums** The maximum pressure and/or suction listed on the model label should <u>not be exceeded</u>. This can be monitored by means of a pressure or suction gage (available from Rotron), installed in the piping at the blower outlet or inlet. Also, if problems do arise, the Rotron Field representative will need to know the operating pressure/suction to properly diagnose the problem.
- 6. Excess Air Bleed excess air off. DO NOT throttle to reduce flow. When bleeding off excess air, the blower draws less power and runs cooler.

Note: Remote Drive (Motorless) Blowers - Properly designed and installed guards should be used on all belts, pulleys, couplings, etc. Observe maximum remote drive speed allowable. Due to the range of uses, drive guards are the responsibility of the customer or user. Belts should be tensioned using belt gauge.

Maintenance Procedure

When properly piped, filtered, and applied, little or no routine maintenance is required. Keep the filter clean. Also, all standard models in the DR, EN, CP, and HiE series have sealed bearings that require no maintenance. Bearing should be changed after 15,000 to 20,000 hours, on average. Replacement bearing information is specified on the chart below.

Bearing Part Number	Size	Seal Material	Grease	Heat Stabilized
510217 510218 510219	205 206 207	Polyacrylic	Nye Rheotemp 500 30% +/- 5% Fill	Yes – 325 F
510449 516440 516648	203 202 307	Buna N	Exxon Polyrex Grease	NO
516840 516841 516842 516843 516844 516845 516846 516847	206 207 208 210 309 310 311 313	Buna N	Exxon Polyrex Grease	NO

Troubleshooting

		PO	SSIBLE CAUSE	OU	T OF WARRANTY REMEDY ***
IMPELLER DOES NOT TURN	Humming Sound	1.	* One phase of power line not connected	1.	Connect
		2.	* One phase of stator winding open	2.	Rewind or buy new motor
		3.	Bearings defective	3.	Change bearings
		4.	Impeller jammed by foreign material	4.	Clean and add filter
		5.	Impeller jammed against housing or cover	5.	Adjust
		6.	** Capacitor open	6.	Change capacitor
	No Soun d	1.	* Two phases of power line not connected	1.	Connect
		2.	* Two phases of stator winding open	2.	Rewind or buy new motor
	Blown Fuse	1. 2.	Insufficient fuse capacity Short circuit	1.	Use time delay fuse of proper rating
				2.	Repair
	Motor Overheated Or Protector Trips	1.	High or low voltage	1.	Check input voltage
		2.	* Operating in single phase condition	2.	Check connections
		3.	Bearings defective	3.	Check bearings
		4.	Impeller rubbing against housing or cover	4.	Adjust
NS		5.	Impeller or air passage clogged by foreign material	5.	Clean and add filter
UR		6.	Unit operating beyond performance range	6.	Reduce system pressure/vacuum
RТ		7.	Capacitor shorted	7.	Change capacitor
Ë.		8.	* One phase of stator winding short circuited	8.	Rewind or buy new motor
EL	Abnormal Sound	1.	Impeller rubbing against housing or cover	1.	Adjust
Σ		2.	Impeller or air passages clogged by foreign	2.	Clean and add filter
			material	3.	Change bearings
		3.	Bearings defective		
	erformance low Standard	1.	Leak in piping	1.	Tighten
		2.	Piping and air passages clogged	2.	Clean
		3.	Impeller rotation reversed	3.	Check wiring
		4.	Leak in blower	4.	Tighten cover, flange
	Be	5.	Low voltage	5.	Check input voltage

** 1 phase units

*** Disassembly and repair of new blowers or motors will void the Rotron warranty. Factory should be contacted prior to any attempt to field repair an in-warranty unit.

Blower Disassembly:

WARNING: Attempting to repair or diagnose a blower may void Rotron's warranty. It may also be difficult to successfully disassemble and reassemble the unit.

- 1) Disconnect the power leads. **CAUTION:** Be sure the power is disconnected before doing any work whatsoever on the unit.
- 2) Remove or separate piping and/or mufflers and filters from the unit.
- 3) Remove the cover bolts and then the cover. **NOTE:** Some units are equipped with seals. It is mandatory that these seals be replaced once the unit has been opened.
- 4) Remove the impeller bolt and washers and then remove the impeller. **NOTE:** Never pry on the edges of the impeller. Use a puller as necessary.
- 5) Carefully note the number and location of the shims. Remove and set them aside. NOTE: If the disassembly was for inspection and cleaning the unit may now be reassembled by reversing the above steps. If motor servicing or replacement and/or impeller replacement is required the same shims may not be used. It will be necessary to re-shim the impeller according to the procedure explained under assembly.
- 6) Remove the housing bolts and remove the motor assembly (arbor/.housing on remote drive models).
- 7) Arbor disassembly (Applicable on remote drive models only):
 - a) Slide the bearing retraining sleeve off the shaft at the blower end.
 - b) Remove the four (4) screws and the bearing retaining plate from the blower end.
 - c) Lift the shaft assembly far enough out of the arbor to allow removal of the blower end snap ring.
 - d) Remove the shaft assembly from the arbor.
 - e) If necessary, remove the shaft dust seal from the pulley end of the arbor.

Muffler Material Replacement:

- 1) Remove the manifold cover bolts and them manifold cover.
- 2) The muffler material can now be removed and replaced if necessary. On blowers with fiberglass acoustical wrap the tubular retaining screens with the fiberglass matting before sliding the muffler pads over the screens.
- 3) Reassemble by reversing the procedure.

NOTE: On DR068 models with tubular mufflers it is necessary to remove the cover and impeller accessing the muffler material from the housing cavity.

Blower Reassembly:

- 1) Place the assembled motor (assembled arbor assembly for remote drive models) against the rear of the housing and fasten with the bolts and washer.
- 2) To ensure the impeller is centered within the housing cavity re-shim the impeller according to the procedure outlined below.
- 3) If blower had a seal replace the seal with a new one.
- 4) Place the impeller onto the shaft making sure the shaft key is in place and fasten with the bolt, washer and spacer as applicable. Torque the impeller bolt per the table below. Once fastened carefully rotate the impeller to be sure it turns freely.
- 5) Replace the cover and fasten with bolts.
- 6) Reconnect the power leads to the motor per the motor nameplate.

Bolt Size	Torque				
	Pound-Force-Foot				
1/4-20	6.25 +/- 0.25				
5/16-18	11.5 +/- 0.25				
3/8-16	20.0 +/- 0.5				
1⁄2-13	49.0 +/- 1				
5/8 –11	90.0 +/- 2				

Impeller Shimming Procedure:

WARNING: This unit may be difficult to shim. Extreme care may be exercised.

Tools Needed:Machinist's Parallel Bar

Vernier Caliper with depth measuring capability Feeler gauges or depth gauge

Measure the Following:

Distance from the flange face to the housing (A) Distance from the flange face to the motor shaft shoulder (B) Impeller Thickness (C)

Measurements (A) and (B) are made by laying the parallel bar across the housing flange face and measuring to the proper points. Each measurement should be made at three points, and the average of the readings should be used.

Shim Thickness = B - (A+C)/2

After the impeller installation (step #4 above) the impeller/cover clearance can be checked with feeler gauges, laying the parallel bar across the housing flange face. This clearance should nominally be (A-C)/2.





EXPLOSION-PROOF BLOWERS

75 North Street Saugerties, New York 12477 Phone: (845) 246-3401 Fax: (845) 246-3802



IMPORTANT: Read before wiring this Explosion-proof Blower

This AMETEK Rotron Explosion-proof Regenerative Blower may be equipped with Pilot Duty Thermal Overload (PDTO) or Automatic Thermal Overload (ATO) protection. When properly wired to a motor starter, this protection limits the motor winding temperature rise per the National Electric Code (NEC) article 500. Failure to properly wire this blower is an NEC violation and could cause an explosion. AMETEK Rotron assumes no responsibilities for damages incurred by negligent use of this product, and will not warranty a blower on which the PDTO is not properly connected. Some blowers 1 HP and under do not require PDTO and have built in ATO. Consult the factory if verification of wiring connections is required.

In all cases, follow the motor controller manufacturer's instructions. The following schematic is for conceptual understanding only, and may not apply to all motor/controller combinations.

The manufacturer's wiring diagram found on the motor takes precedent over reference diagrams supplied by AMETEK Rotron Technical Motor Division.



The schematic is shown for a three phase motor. For a single phase motor disregard L3 and M3. Pushing the START button completes the auxiliary control circuit, allowing current to flow through the magnetic coil. The contacts are magnetically closed, starting the motor and latching the auxiliary circuit. The motor will continue to run until the STOP push button is depressed, the motor reaches the overload temperature, or the current sensing overloads trip out.

Schematic

If you have any questions, contact AMETEK Rotron at 914-246-3401 for the location of your area representative.

POLICY REGARDING INSTALLATION OF AMETEK ROTRON REGENERATIVE BLOWERS IN HAZARDOUS LOCATIONS

AMETEK Rotron will not knowingly specify, design or build any regenerative blower for installation in a hazardous, explosive location without the proper NEMA motor enclosure. AMETEK Rotron does not recognize sealed blowers as a substitute for explosion-proof motors. Sealed units with standard TEFC motors should never be utilized where local, state, and/or federal codes specify the use of explosion-proof equipment.

AMETEK Rotron has a complete line of regenerative blowers with explosion-proof motors. Division 1 & 2, Class I, Group D; Class II, Groups F & G requirements are met with these standard explosion-proof blowers.

AMETEK Rotron will not knowingly specify, design or build any regenerative blower for installation in a hazardous, corrosive environment without the proper surface treatment and sealing options.

AMETEK Rotron has a complete line of Chemical Processing and Nasty Gas[™] regenerative blowers with Chem-Tough[™], stainless steel parts, and seals.

AMETEK Rotron offers general application guidance; however, suitability of the particular blower selection is ultimately the responsibility of the purchaser, not the manufacturer of the blower.

FS2 Rev. B 3/10/98





EN 454/513/523/505/555/606/656

Service a	and Part	s Manual	Parts Breakdown								
		Model: Part No.:	EN454 038175 038176	EN454 080487 080488 080916	EN513 038183 038037	EN523 038223 038184	EN505 038177 038178 038445	EN555 038045	EN606 038179 038222 038437 038536 038538		
Item	Qty.										
No.	Req'd	Description									
<u>M3</u>	1	Key Motor Shaft	510629	510629	510629	155099	510629	510629	510629		
<u>B1</u>	4	Screw, Flange	120162	120162	120162	120162	120162	120162	155095		
B2	6	Screw, Manifold	155496	155170	(10 pcs) 120214	(10 pcs) 120214	155170	155496	155176		
B3	2	Flange	510354	510354	510354	510354	510354	510354	511480		
B4	1	Housing	515737	551001	523419	523420	See Next Page	516721	See Next Page		
B5	4	Screw, Hsg /Motor	251791	155128	251791	251791	155128	251791	251791		
B6	4	Muffler Material	515743	515743	516560	516560	(6 pcs) 515743	515743	See Next Page		
	2	Muffler Insert	Not Used	551006	Not Used	Not Used	Not Used	Not Used	Not Used		
B7	1	Manifold Plate	516410	516410	529868	529868	517460	515482	516392		
B8	*	Shim .002"	510356	510356	510356	500664	510356	510356	510356		
	*	Shim .005"	510357	510357	510357	500665	510357	510357	510357		
	*	Shim .010"	510358	510358	510358	500666	510358	510358	510358		
	*	Shim .020"	510359	510359	510359	500667	510359	510359	510359		
	*	Shim .030"	Not Used	Not Used	Not Used	510292	Not Used	Not Used	Not Used		
B9	1	Impeller	515675	551067	516557	(2 pcs) 516562	517433	516678	511272		
B10	1	Bolt, Impeller	120214	120214	120325	120214	120214	120262	120325		
B11	1	Lockwasher, Impeller	120203	120203	120203	120203	120203	120203	120203		
B12		Washer, Impeller	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B13	1	Cover	517807	551065	516559	516559	517808	516675	511274		
B14	6	Screw, Cover	155236	155129	(8 pcs) 120255	(8 pcs) 155098	155236	(7 pcs) 155236	155236		
B16	1	Spacer, Impeller Bolt	510355	510355	510355	510355	510355	510355	510355		
B17		Lockwasher, Housing	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B18	1	Screen, Muffler Retaining, Right (**)	510362	551087	511718	511718	See Next Page	510362	See Next Page		
	1	Screen, Muffler Retaining, Left (**)	510362	551087	511718	511718	See Next Page	510362	See Next Page		
B19		Bolt, Muffler Hsg/Hsg	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B20		Muffler Housing	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
		Bolt, Motor/Muffler	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
		Lockwasher, Motor/Muffler	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
		Washer, Motor/Muffler	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
		Spacer, Motor/Muffler	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B23		Bolt, Mounting Rail	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B24		Lockwasher. Rail	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B25		Nut. Rail	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
B26		Rail Mounting	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used		
	1	Lip Seal	516587	516587	516587	516587	516587	516587	516587		

Model	Part No.	Motor	Wiring Diagram	Specific Parts	Bearing, Rear (M1)
EN454W58L	038175	515747	H+L		
EN454W72L	038176	515746	K + L		
EN454W58ML	080487	515747	H+L		
EN454W72ML	080488	515746	K + L		
EN454W86ML	080916	517391	N + L		510449
EN513W58L	038183	515747	H+L		
EN513W72L	038037	515746	K + L		
EN523M72L	038184	517675	K + L	-	
EN523M5L	038223	551373	M + L	B13 516555 1 pc Center Annulus	510217
EN505AX58ML	038177	510326	H+L		
				B4 517419	510449
EN505AX72ML	038178	510325	K + L	B18 517435 2 pcs	
EN505CJ5ML	038445		M + L	B4 529654	
		529622		B18 517436 2 pcs	
EN555M72L	038045	516687	K + L		
					510449
	038179				
EN606M72L	***	516687	K + L	B4 511276 1 pc	
EN606M5L	038222 **	551366	M + L	B6 511285 4 pcs	510217
EN606M86L	038437	529630	N + L	B4 529790 1 pc	510449
EN606M72ML	038536	516687	K + L	B6 529781 4 pcs	
EN606M5ML	038538	551366	M + L	B18 529782 2 pcs	510217
EN656M86XL	080058	529630	N + L		510449
EN656M72XL	080059	516687	K + L]	
EN656M5XL	080060	551366	M + L	B7 Muffler extension 551974 1 pc	510217

EN656 080058 080059 080060

510629
120255
155170
511480
550195
251791
(10 pcs.) 551585
Not Used
See Next Page
510356
510357
510358
510359
Not Used
550305
120325
120203
Not Used
550249
(8 pcs) 155236
510355
Not Used
517436
517436
Not Used
516587

Bearing, Impeller End (M2)
510217
510218
510217
510217
510218
510217
510218
510217
510218



SMALL COMPACT INLET VACUUM FILTERS

Intake Suction Filters

Pneumatic Conveying Systems

Remote Installations for Piston

Various media

Soil Venting/Remediation

& Screw Compressors

"CSL" Series 3/8" - 3" FPT

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APPLICATIONS & EQUIPMENT

- Vacuum Pumps & Systems P.D., Side Channel, Rotary Vane, Screw, Piston
- Vacuum Packaging Equipment
- Vacuum Lifters
- Blowers Side Channel & P.D.

FEATURES & SPECIFICATIONS

- Vacuum level: Typically 1x10⁻³ mmHg (1.3x10⁻³ mbar)
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron
- Brazed fittings for High vacuum duty
- Stainless steel torsion clips for durability
- Low pressure drop
- Positive engagement O-ring seal system
- Fully-drawn one piece canister

OPTIONS (Inquiries Encouraged)

- Vacuum gauge available
- Dome hood for high holding capacity
- Available in Stainless Steel
- Available in **Stanless Stee**

CONFIGURATION

CSL 824-851

Series

- Epoxy coated housings
- Activated carbon prefilter for odor

DRAWING

Support brackets

 Alternate top-to-canister fastening system for low pressure or pulsating systems

CSL 239/238

Series



Dimension tolerance + 1/4"

ł	with Polyester	with Paper	FPT Inlet &			DIMEN	ISIONS -	inches			Rated Flo Nominal	ow SCFM Element	Approx.
	Element	Element	Outlet	Α	В	С	D	E	F	G	Rating	Rating	Wt. Ibs
Ι	CSL-825-038HC	CSL-824-038HC	3/8"	3 5/8	9/16	3 3/4	1 7/8	9/16	3 1/2	3	18	25	0.88
Ι	CSL-825-050HC	CSL-824-050HC	1/2"	3 5/8	9/16	3 3/4	1 7/8	9/16	3 1/2	3	18	25	0.88
Ι	CSL-843-050HC	CSL-842-050HC	1/2"	4 3/8	9/16	5 7/8	2 1/2	9/16	5	3 1/4	20	55	3
Ι	CSL-825-075HC	CSL-824-075HC	3/4"	3 3/4	9/16	3 3/4	1 7/8	9/16	3 1/2	3	24	25	0.88
S	CSL-843-075HC	CSL-842-075HC	3/4"	4 3/8	9/16	5 7/8	2 1/2	9/16	5	3 1/4	25	55	3
Ι	CSL-843-100HC	CSL-842-100HC	1"	4 3/8	3/4	5 7/8	2 5/8	3/4	5	3 1/4	35	55	3
S	CSL-849-100HC	CSL-848-100HC	1"	6 1/2	3/4	7 5/16	4 1/4	3/4	6 13/16	5 1/4	40	115	5
Ι	CSL-843-125HC	CSL-842-125HC	1 1/4"	4 3/8	3/4	5 7/8	2 5/8	3/4	5	3 1/4	55	55	3
S	CSL-849-125HC	CSL-848-125HC	1 1/4"	6 1/2	3/4	7 5/16	4 1/2	3/4	6 13/16	5 1/4	60	115	5
Ι	CSL-849-150HC	CSL-848-150HC	1 1/2"	6 1/2	3/4	7 5/16	4 1/2	3/4	6 13/16	5 1/4	80	115	5
	CSL-851-200HC	CSL-850-200HC	2"	10 1/4	3/4	8 3/4	5	3/4	7 5/8	9 1/4	175	290	15
Ι	CSL-851-250HC	CSL-850-250HC	2 1/2"	10 1/2	1 1/4	8 3/4	5 1/2	1 1/4	7 5/8	9 1/4	210	290	15
Ι	CSL-239-300C*	CSL-238-300C*	3"	15 3/4	2 7/8	13 1/4	8 7/8	2 7/8	12	11	300	570	33

*1/4" taps standard on inlet and outlet

= Industrial Duty S = Severe Duty

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Large dirt holding capacity and Easy field cleaning.

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Medical Industry

INLET VACUUM FILTERS CSL, CT, VL, VS, LRS Series



Air Intake Filter/Silencers

Model EMS - Series



The "EMS" Series air intake filter/silencer is designed for both indoor and outdoor applications requiring 6 - 8 dB noise reduction and a high degree of filtration. The unique heavy gauge construction reduces noise transmission and enhances durability in even the most severe environments. This series is ideal for applications such as reciprocating engines, positive displacement blowers and centrifugal compressors. Easy filter element access reduces maintenance time during filter element replacement.

Standard Construction Features

- Available in sizes from 1 inch to 16 inch
- Female NPT discharge connection sizes 1 inch to 4 inch
- 125/150# ANSI drilled plate flanges for sizes 5 inch to 16 inch
- Carbon steel construction
- Removable weatherhood

- Available with paper, felt and wire mesh filter element
- Removable weatherhood
- Gray phenolic resin based fast drying primer suitable for overcoating with urethanes, acrylics, epoxies and industrial enamels. Standard two mil thickness
- 1/8" NPT pressure tab

Optional Construction Features and Accessories

- Stainless steel construction
- Aluminum construction
- Special finish per specification
- Pre-filter wraps
- Special filtration and back-pressure designs
- Special acoustic designs
- Oversized flanges
- Contact factory for additional features to meet your requirements

10/98 98BC-2004

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1" to 4" Female NPT Connection (4" flange connection available upon requrest) 5" and Larger-125/150# ANSI Drilled Plate Flange (5" FNPT connection available upon request)

				_					1000	Eleme	ent Model N	lumber
Model No.	А	С	В	D	N	R	Weight	CFM	Paper	Felt	Wire	
EMS-1	1	9 1/2	6 5/8	5 3/8	9/16	2 1/4	8	35	P-642	F-642	W-642	
EMS-125	1 1/4	9 1/2	6 5/8	5 3/8	9/16	2 1/4	8	35	P-642	F-642	W-642	
EMS-15	1 1/2	9 1/2	6 5/8	5 3/8	9/16	2 1/4	8	75	P-642	F-642	W-642	
EMS-2	2	9 1/2	6 5/8	5 7/16	5/8	2 1/4	8	120	P-642	F-642	W-642	
EMS-25	2 1/2	14 7/8	12	11 7/8	13/16	4 7/16	20	200	P-974	F-974	W-974	
EMS-3	3	14 7/8	12	13 5/8	13/16	4 7/16	20	275	P-974	F-974	W-974	
EMS-35	3 1/2	14 7/8	12	13 5/8	13/16	6 7/16	25	375	P-976	F-976	W-976	
EMS-4	4	14 7/8	12	13 5/8	1	6 7/16	25	500	P-976	F-976	W-976	
EMS-5	5	14 7/8	12	25 1/2	3	7 3/8	36	750	P-1197	F-1197	W-1197	
EMS-6	6	22	18	26 1/4	3	8 5/8	53	1100	P-13118	F-13118	W-13118	
EMS-8	8	22	18	25	3	10 3/4	70	2200	P-171310	F-171310	W-171310	
EMS-10	10	22	18	25	3	10 3/4	95	3000	P-171310	F-171310	W-171310	
EMS-12	12	22	18	25	3	10 3/4	108	4300	P-171310	F-171310	W-171310	
EMS-14	14	30	24	40	4	15 3/4	180	5900	P-231914	F-231914	W-231914	
EMS-16	16	30	24	40	4	15 3/4	190	7700	P-231914	F-231914	W-231914	

• When ordering specify paper (P); felt (F) or wire mesh (W) filter element.

1 inch to 4 inch standard female NPT connection; 4 inch flange connection available upon request

 5 inch to 16 inch standard 125/150# ANSI drilled plate flange connection; 5 inch female NPT connection available upon request

Dimensions in inches, weights in pounds. Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings for exact dimensions.

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The Leader in Blower & Vacuum Solutions 460 West Gay Street West Chester, PA 19380 610-692-5650 Fax 610-692-5837 cs@gasho.org

Gasho Replacement Inlet Filter Elements

High quality replacement elements are available for the filters of various manufactures used on packages built by Gasho.

Paper elements are normally used in inlet filters and replaced when they are dirty. Polyester elements are cleanable.

	Filter			0.D.	I.D.	Ht.	List
	Size, In.	Gasho	Box				Price
		Filter #	Quantity				
	1	GA-0470	6	5-13/16	4	2	\$17.00
\mathbf{L}	2	GA-0471	6	5-13/16	4	2-1/2	\$17.00
	2.5-3	GA-0472	2	9-3/4	7-1/4	4	\$23.00
	4	GA-1063	2	9-3/4	7-1/4	6	\$27.00
	5	GA-0474	1	11-1/2	9-7/8	7	\$35.00
	6	GA-0475	1	13-5/8	11-5/8	8-5/8	\$53.00
	8-12	GA-1163	1	17	13	10	\$185.00

GA-0471 Elements are frequently used to replace GA -0470

Manufacturer Cross Reference

	Gasho	Universal	EM Prod.	Full-On	Solberg #
	Filter #	Filter #	Filter #	Filters #	
	GA-0470	81-0470		FOF810470	32-00
-	GA-0471	81-0471	P-642	FOF810471	32-02
	GA-0472	81-0472	P-974	FOF810472	32-04
	GA-1063	81-1063	P-976	FOF811063	32-06
	GA-0474	81-0474	P-1197	FOF810474	32-08
	GA-0475	81-0475	P-13118	FOF810475	32-10
	GA-1163	81-1163	P-171310	FOF811163	32-12

Standards Compliance

IPG's 64 series brass ball valves comply with the latest editions of these published standards:

- AGA Z21.15.CGA9.1
- AGA No. 3-88
- ANSI B1.20.1
- ANSI B16.18
- CAN/CGA-3.16-M88
- ASME/ANSI B16.33
- ASME/ANSI B16.38 • MSS SP-110 • UL Guide YSDT
- UL Guide YRPV
- •UL Guide VQGU
- **Materials of Construction**

Description	Materials
1. Body	Brass UNI 5705-65
2. Retainer	Brass UNI 5705-65
3. Ball	Brass UNI 5705-65
4. Seats	PTFE
5. Stem Seals	PTFE
6. O-Ring	NBR 75 Shore A
7. Packing Gland	Brass UNI 5705-65
8. Nut	Plated Steel
9. Stem	Brass UNI 5705-65 Cr Plated
10. Lever Handle	Plated Steel 1/4" - 2" Models Aluminum 2 1/2" - 4" Models

Optional Kits										
Valve Size	Locking Handle	Stem Extensions	Balancing Stops							
1/4", 3/8" & 1/2"	78-1659-01	78-1501-0	78-1506-01							
3/4" & 1"	78-1660-01	78-1502-0	78-1507-01							
1-1/4" & 1-1/2"	78-1661-01	78-1503-0	78-1508-01							
2"	78-1662-01	78-1504-0	78-1509-01							
2-1/2" & 3"	-	78-1505-0	78-1510-01							

NOTE: Specify (-07) suffix for T-Handle i.e. 64-105-07.

64-100	Dimension	al Data				
Size	Part No.	A	В	C	D	(Cv)
1/4" NPT	64-101-01	0.39	2.02	1.75	3.85	6
3/8" NPT	64-102-01	0.39	2.02	1.75	3.85	7
1/2" NPT	64-103-01	0.59	2.44	1.88	3.85	19
3/4" NPT	64-104-01	0.78	2.71	2.28	4.80	34
1" NPT	64-105-01	0.98	3.07	2.44	4.80	50
1-1/4" NPT	64-106-01	1.25	3.42	3.07	6.02	104
> 1-1/2" NPT	64-107-01	1.57	3.89	3.34	6.02	268
2" NPT	64-108-01	1.96	4.33	3.79	6.37	309
2-1/2" NPT	64-109-01	2.56	5.59	5.02	8.07	629
3" NPT	64-100-01	3.15	6.45	5.45	8.07	1018
4" NPT	64-10A-01	3.94	7.60	6.34	10.23	1622







64-200 Dimensional Data							
Size	Part No.	A	В	C	D	(Cv)	
1/2"	64-203-01	0.59	2.53	1.88	3.85	19	
3/4"	64-204-01	0.78	2.99	2.28	4.80	34	
1"	64-205-01	0.98	3.58	2.44	4.80	50	
1-1/4"	64-206-01	1.25	4.09	3.07	6.02	104	
1-1/2"	64-207-01	1.57	4.56	3.34	6.02	268	
2"	64-208-01	1.96	5.43	3.79	6.37	309	
2-1/2"	64-209-01	2.56	6.93	5.02	8.07	629	
3"	64-200-01	3.15	8.09	5.45	8.07	1018	



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08/90

289 Series Spring-Loaded Relief Valves



1-INCH TYPE 289H AND 289HH

Figure 1. Type 289H and 289HH Relief Valves

2-INCHTYPE 289H

The 289 Series relief valve is a throttling relief valve used downstream of pressure regulators to protect the downstream system from overpressure. A smooth throttling action minimizes pressure surges in the system during emergency operation. These relief valves are available in 1/4, 3/4, 1, or 2-inch sizes with spring ranges (relief pressure settings) from 5 inches w.c. to 75 psig (0.01 to 5.2 bar).

All sizes above 1/4-inch feature a pitot tube booster (figure 1) for achieving the highest possible relief capacity with a minimum buildup of system pressure. When the valve is opening, high gas velocity through the orifice creates an area of relatively low pressure near the end of the pitot tube. This pitot tube effect forms a partial vacuum above the diaphragm which helps to open the valve.

The relief valve diaphragm functions as a valve disk to control flow in all types except the 289H and 289HH, which use O-ring seats. The nitrile or neoprene seating

surfaces provide tight shutoff. The 289 Series relief valves are ideal for low pressure settings due to the increased sensitivity provided by the large diaphragm area.

Features

• **Throttling Type Relief**—Smooth, sensitive throttling action minimizes pressure surges.

• **High Flow Rates**—As shown by the figure 4 capacity curves, high flow rates can be achieved with minimum pressure buildup due to the boosting system which increases the relief valve opening.

• **Small Size**—The 289 Series relief valves are small and compact, making them suitable for areas limited in space.

• Reliability Due to Simplicity—A single internal assembly decreases the possibility of mechanical failure.





Regulators

www.FISHERregulators.com

Specifications

Available Configurations

Type 289A (figure 2): 1/4-inch spring-loaded relief valve for relief pressure settings of 3 to 22 psig, (0.21 to 1.5 bar) two spring ranges

Type 289H (figure 1): 1 or 2-inch spring-loaded relief valve for relief pressure settings of 1 to 50 psig (0.07 to 3.5 bar) four spring ranges, in the 1-inch size and of 7-inches w.c. to 10 psig, (0.02 to 0.69 bar), four spring ranges, in the 2-inch size **Type 289HH** (figure 1): 1-inch spring-loaded relief valve for relief pressure settings of 45 to 75 psig (3.1 to 5.2 bar)

Type 289L (figure 3): 3/4 or 1-inch spring-loaded relief valve for relief pressure settings of 10 to 40-inches w.c., (0.03 to 0.1 bar), two spring ranges **Type 289U** (figure 2): 1/4-inch spring-loaded relief valve for relief pressure settings of 5-inches w.c. to 3 psig, (0.01 to 0.21 bar), two spring ranges

Inlet Connections

Type 289L: 3/4 or 1-inch NPT female Types 289A and 289U: 1/4-inch NPT female Type 289H: 1 or 2-inch NPT female Type 289HH: 1-inch NPT female

Outlet (Vent) Connections

Same size as inlet connection

Maximum Allowable Relief (Inlet) Pressure⁽¹⁾ and Maximum Relief Set Pressure

See table 1

Capacity Data

See figure 4

Standard Construction Materials

Valve Body and Spring Case Types 289A and 289U: Zinc Type 289H (1-inch), 289HH, and 289L: Aluminum Type 289H (2-inch): Cast iron body with aluminum

spring case **Diaphragm**

Type 289A: Neoprene

Types 289H and 289HH: Nitrile or fluoroelastomer *All Others:* Nitrile

Orifice

Types 289A and 289L: Aluminum *Type 289H (2-inch Only):* Brass or Stainless steel

O-Ring Seat (Types 289H and 289HH Only): Nitrile or Fluoroelastomer⁽²⁾

O-Ring Seat Holder and Washer (1-inch Types 289H and 289HH Only): Aluminum

Seat Washer (2-inch Type 289H Only): Stainless steel

Pitot Tube

Types 289H and 289HH (1-inch), and 289L: Aluminum

Type 289H (2-inch): Brass or Stainless steel

Gaskets

Type 289L: Neoprene *All Others:* Composition

Spring: Zinc-plated steel

Diaphragm Plate

Types 289A and 289U: Zinc *All Others:* Zinc-plated steel

Closing Cap

Type 289L: Plastic, Aluminum, or Zinc *Type 289H (2-inch):* Zinc

Material Temperature Capabilities⁽¹⁾

With Nitrile and Neoprene Elastomers: -20 to150°F (-29 to 66°C) With Fluoroelastomers: 20 to 300°F (-7 to 149°C) Available with Types 289H and 289HH only

Approximate Shipping Weight

Types 289A and 289U: 0.75 lb (0.34 kg) **Type 289H** *1-inch Size:* 4 lb (1.8 kg) *2-inch Size:* 15 lb (6.8 kg) **Type 289HH:** 4 lb (1.8 kg) **Type 289L:** 1.5 lb (0.7 kg)

Options

- TFE diaphragm protector (Types 289A and 289U only)
- wire-seal on closing cap (1-inch Type 289L only)

1. The pressure/temperature limits in this bulletin and any applicable standard limitation should not be exceeded. 2. Bubble-tight shutoff can not be attained at settings below 5 psig with fluoroelastomer O-ring seat.



Figure 2. Type 289U Relief Valve (Also Typical of Type 289A Relief Valve)



Figure 3. Type 289L Relief Valve



Figure 4. Capacity for 0.6 Specific Gas at 14.7 Psia and 60° F



Figure 4. Capacity for 0.6 Specific Gas at 14.7 Psia and 60° F (Continued)



INLET PRESSURE—PSIG

0.6 SPECIFIC GRAVITY GAS FLOW RATE— THOUSAND CUBIC FEET PER HOUR—14.7 PSIA AT 60°F

5000

6000

7000

8000

9000

10,000

NOTE:

0

1000

2000

3000

1. WHEN SELECTING ANY RELIEF VALVE FOR INSTALLATION DOWNATREAM OF A REGULATOR, THE CAPACITY OF THE RELIEF VALVE SHOULD BE COMPARED WITH THE WIDE-OPEN CAPACITY OF THE REGULATOR.

4000

2. BUBBLE POINT RELIEF SETTING AND SPRING PART NUMBER ARE NOTED ON EACH CURVE.

3. TO CONVERT TO EQUIVALENT CAPACITIES OF OTHER GASES, MULTIPLY VALUES OBTAINED FROM CURVE BY THE FOLLOWING FACTORS: AIR-0.78, PROPANE-0.628, BUTANE-0.548, NITROGEN-0.789 B2311

Figure 4. Capacity for 0.6 Specific Gas at 14.7 Psia and 60° F (Continued)

BODY SIZES, INCHES	TYPE	SPRING RA (RELIEF PRESSUR	SPRING RANGE (RELIEF PRESSURE SETTINGS)		MAXIMUM ALLOWABLE RELIEF SETTING ⁽¹⁾	MAXIMUM ALLOWABLE RELIEF (INLET) PRESSURE ⁽²⁾		
289U		5 to 25-inches w.c. 20-inches w.c. to 3 psig	(12 to 62 mbar) (50 mbar to 0.21 bar)	0V060227022 0F058227022	3 psig (0.21 bar)	10 psig (0.69 bar)		
1/4	289A	3 to 13 psig 11 to 22 psig	(0.21 to 0.9 bar) (0.76 to 1.5 bar)	0Z056327022 1B268227022	22 psig (1.52 bar)	45 psig (3.1 bar)		
3/4 or 1	289L	3 to 8-inches w.c. 5 to 18-inches w.c. 10 to 18-inches w.c. 12 to 40-inches w.c.	(7 to 20 mbar) (12 to 45 mbar) (25 to 45 mbar) (30 to 99 mbar)	1B413527022 1N3112X0012 13A7917X012 13A7916X012	40-inches w.c. (99 mbar)	7 psig (0.52 bar)		
1 289H		1 to 4.5 psig 4 to 15 psig 10 to 20 psig 15 to 50 psig	(0.069 to 0.3 bar) (0.28 to 1.0 bar) (0.69 to 1.4 bar) (1.0 to 3.4 bar)	1F826927052 1D892327022 1D751527022 1D745527142	50 psig (3.4 bar)	100 psig (6.9 bar)		
2 289H 7		7 to 18-inches w.c. 0.5 to 2.25 psig 1.75 to 7 psig 4 to 10 psig	(17 to 45 mbar) (0.034 to 0.16 bar) (0.12 to 0.52 bar) (0.28 to 0.69 bar)	1B536527052 1B536627052 1B536827052 1B536927052	10 psig (0.69 bar)	25 psig (1.7 bar)		
1	289HH	45 to 75 psig	(3.1 to 5.2 bar)	1D745527142	75 psig (5.2 bar)	100 psig (6.9 bar)		
 With highest sp Maximum relief 	1. With highest spring range available. 2. Maximum relief pressure setting plus buildup.							

Table 1. Spring Ranges and Maximum Allowable Relief (Inlet) Pressures

Installation

The 289 Series relief valves may be installed in any position. However, the outlet connection must be protected against the entrance of rain, snow, insects, or any other foreign material that may plug the outlet or affect the opening and closing of the valve (see figure 5). If it is necessary to pipe away the outlet, remove the outlet screen (if one is present).

Flow through the valve must be as indicated by the flow direction arrow on the body (inlet connection is marked on some sizes).

The spring case vent on the 2-inch Type 289H is tapped and plugged. This vent opening must remain plugged to allow the pitot tube booster to function.

Overpressure

Overpressure conditions in a regulating system may cause personal injury or equipment damage due to bursting of pressure-containing parts or explosion of accumulated gas. Check the system for damage if any of the maximum allowable relief (inlet) pressure ratings in table 1 are exceeded.

Ordering Information

When ordering, specify:

- 1. Type number and size
- 2. Relief pressure range and setting desired

3. Type of gas (natural gas, air, etc.); list any factors such as impurities in the gas that may affect compatibility of the gas with valve trim parts

- 4. Temperature and specific gravity of the gas
- 5. Maximum relief (inlet) pressure and flow rate desired
- 6. Line size and end connection size of adjacent piping

7. For Types 289H and 289HH, specify material of diaphragm and O-ring seat; for 2-inch Type 289H, specify material of orifice and pitot tube

8. Options desired, if any



Figure 5. Typical Installation of a 289 Series Relief Valve





TYPE 289L (3/4 AND 1-INCH)



Figure 6. Dimensions

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Pressure and Vacuum Gauges

We use both standard gauges and liquid filled gauges from a variety of manufacturers. Gauges are installed on our packages with gauge isolation valves (gauge cocks) part number BRS-VA-025-4F4M-BT. The gauge isolation valve can be used as a snubber while reading the gauge by opening it slightly. To protect gauges from damage due to shocks or pulsations in the system, gauge isolation valves should be closed except when the gauge is being read.

Liquid filled gauges may display incorrect readings due to variations in atmospheric pressure. To determine if a gauge is subject to this condition, the liquid filled cavity should be temporarily vented to atmosphere. Most liquid filled gauges have a seal plug in the liquid filled cavity. Remove this plug to allow the cavity to be vented to atmosphere. In some instances the case can be lightly squeezed to burp it. Replace the plug.









Maximum Operating Pressure - 500 psi Maximum Operating Temperature - 180 Degrees F Ball Through Hole Diameter - .218

025 SERIES BALL VALVE

025 One-Way Ball Valve Design Considerations

The 025 Series One-Way Ball Valve compact design promotes multiple configurations to fit the exact end use application. The 025 Ball Valve Series is rated to 500 psi and will support flow and pressure only in the flow direction. The 025 Series has a one-piece body construction, stamped with directional flow arrows, to cover 1/4" NPT end configuration applications. The Zinc Die Cast Lever Handle is standard. Handles can be ordered Reversed - to lie over the outlet when the valve is in the open position. UL configurations are available and rated to 250 psi. UR configurations are available and rated to 500 psi.

Example:	Example:Inlet EndOutlet EndSealHandlePlating1/4 FNPT1/4 MNPTBuna-NSteelENPSMC Part Number:025-4F4M-B,SH,ENP						
1/4 FNPT 1/4 MNPT Buna-N Steel ENP							
SMC Part Number: 025-4F4M-B,SH,ENP							

The handle will lie over the Inlet port when the valve is in the open position. SMC Part Numbers are a description of the valve as read left to right, Inlet to Outlet. **Example:** 025-4F4M-B,SH,ENP = 1/4 FNPT Inlet x 1/4 MNPT Outlet

025 Series Options

Material Options Brass Body, Nickel Plated Brass Ball, Teflon® Seats, Stainless Handle Screw

Seal Options Buna-N, Ethylene Propylene, Fluoroelastomer (Viton®), Neoprene

Body Options1/4 Female x 1/4 Female NPT1/4 Female x 11/16-16 Male1/4 Female x 1/4 Male NPT1/4 Female x 7/16-24 Female1/4 Female x 1/8 Female NPT1/4 Female x 1/4 Female Flare1/4 Female x 1/8 Male NPT1/4 Female x 3/8 Compression1/4 Female x 1/4 Hose Barb1/4 Female x 3/8 Compression

Handle OptionsZinc Die Cast Lever (Standard), Zinc Die Cast Lever with Red Vinyl Sleeve, Steel Lever, Steel Lever, Round Handle,
Steel Lever, Steel Lever with Red Vinyl Sleeve, Round Zinc Die Cast Handle, Black Nylon T-Handle,
Blue Nylon Knob, .312 x 1" Stem, Screw Slot Headed Ball

Plating Options Electroless Nickel, Black Zinc

SMC will quote alternate materials or customize our standard products when quantities ensure competitive pricing. Contact Customer Service at (651) 653-0599, FAX - (651) 653-0989, E-Mail - info@specialtymfg.com

Accessories

Filtration - Moisture Separator



By separating and containing entrained liquids, ROTRON'STM moisture separator helps protect our regenerative blowers and the end treatment system from corrosion and mineralization damage. Recommended for all soil vacuum extraction applications. SPECIFICATIONS: SEPARATION METHOD – High E ciency Cyclonic RELIEF VALVE MATERIAL – Brass & Sainless Steel FLOAT MATERIAL – Copper FLOAT SWITCH – SPDT, Explosion-proof NEMA 7&9, 5 Amp max.



PLASTIC "P" DESIGN

1/

METAL "D" DESIGN

METAL"B" DESIGN

Models without oat switch available. Metal MS200/300DS models are not the standard stocked, but are available.

		Y							
					Part/Mod	el Number			
		MS200PS	MS300PS	MS200DS	MS300DS	MS350BS	MS500BS	MS600BS	MS1000BS
Specification	Units	038519	038520	080086	080087	038357	080660	080659	038914
	Inches	2.38	2.88	2.00	2.50	3.25	3.25	4.00	6.00
Dimension A	mm	60.5	73.2	50.8	63.5	82.6	82.6	101.6	152.4
CEM Max	CFM	200	300	200	300	350	500	600	1000
CI WIWAX.	m3/hr	340	510	340	510	595	850	1020	1700
Dimension B	Inches	22.46	22.46	22.12	22.12	28.00	28.00	27.00	31.00
Dimension B	mm	570.5	570.5	561.8	561.8	711.2	711.2	685.8	787.4
Dimension C	Inches	16.00	16.00	16.75	16.75	23.00	23.00	23.00	27.00
Dimension C	mm	406.4	406.4	425.5	425.5	584.2	584.2	584.2	685.8
Dimension D	Inches	3.25	3.25	2.75	2.75	4.00	4.00	4.00	4.00
Dimension D	mm	82.6	82.6	69.9	69.9	101.6	101.6	101.6	101.6
Dimonsion E	Inches	31.05	31.05	27.92	27.92	37.25	37.37	37.37	47.32
DIMENSIONE	mm	788.7	788.7	709.2	709.2	946.2	949.2	949.2	1201.9
Dimension F	Inches	33.30	33.30	30.17	30.17	39.50	54.50	54.50	51.70
Dimension F	mm	845.8	845.8	766.3	766.3	1003.3	1384.3	1384.3	1313.2
Dimension	Inches	6	6.00	6.56	6.81	9.75	9.75	9.25	10.00
	mm	152.4	152.4	166.6	173	247.7	247.7	235	254
Dimension C	Inches	4.50 OD	4.50 D	4.50 D	4.50 OD	4.50 OD	6.63 ID	6.63 ID	8.62 OD
Dimension G	mm	114.3	114.3	114.3	114.3	114.3	168.4	168.4	218.9
Dimension I	Inches	13.25	13.25	12.62	12.62	17.50	17.50	17.50	19.88
Dimension 5	mm	336.6	336.6	320.5	320.5	444.5	444.5	444.5	505
Drain Internal Thd	-	3/4	3/4	3/4	3/4	1	1	1	1
Shipping Woight	Lbs	42	42	42	42	82	95	96	150
Shipping weight	Kq	19.1	19.1	19.1	19.1	37.2	43.1	43.5	68

This document is for informational purposes only and should not be considered as a binding description of the products or their performance in all applications. The performance data on this page depicts typical performance under controlled laboratory conditions. AMETEK is not responsible for blowers driven beyond factory specified speed, temperature, pressure, flow or without proper alignment. Actual performance will vary depending on the operating environment and applications. AMETEK products are not designed for and should not be used in medical life support applications. AMETEK reserves the right to revise its products without notification. The above characteristics represent standard products. For product designed to meet specific applications, contact AMETEK Technical & Industrial Products Sales department.





ROTRON[®]

2.0 Moisture Separator[™] Specifications

2.1 Duty

The moisture separator shall be designed for use in a soil vapor extraction system capable of continuous operation with a pressure drop of less than six inches of water at the rated flow of ______ SCFM. The separator shall be capable of operation under various inlet conditions randing from a fine mist to slugs of water with high efficiency.

2.2 Principle of Operation

The moisture separator shall incorporate cyclonic separation to remove entrained water. The separator must protect against an overflow by fail safe mechanical means. An electrical switch or contact(s) alone is not an acceptable means of protection against overflow, but is a good backup.

2.3 Construction

The body of the moisture separator shall be constructed of heavy wall plastic or heavy gauge cold rolled steel. The steel interior and exterior shall be epoxy (powder) coated to resist abrasion, corrosion, and chipping that might expose the surface. The inlet shall be tangentially located and welded to the body. The outlet port shall be constructed of PVC or cast aluminum alloy, flanged and sealed to the center of the top of the separator. The separator shall incorporate a non-sparking copper float ball and an adjustable relief valve to protect against overflow and overheating the blower.

2.4 Capacity and Dimension

The moisture separator must have a liquid capacity of _____ gallons. The inlet shall be _____ inch OD slip-on type. The outlet shall be _____ inch OD slip-on type.

2.5 Pressure Drop

For DR/EN/CP Blower Model	Selector Moisture Separator Model	Liquid- holding Capacity (gallons)	Inlet (OD)	Outlet	Max Vacuum Allow (IHG)
404 454 505 513	MS200PS	7	2.38		12
523 555 633 833	MS200DS	10	2.0	4.5 OD	22
656	MS300PS	7	2.88		12
757	MS300DS	10	2.5		
808	MS350BS				
858 1233	MS500BS	40	3.25	6.63 ID	22
909	MS600BS		4.0		
979 14	MS1000BS	65	6.0	8.62 OD	



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SERVICE AND PARTS MANUAL FOR

MOISTURE SEPARATORS



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OPERATION & MAINTENANCE MANUAL



Technical & Industrial Products 627 Lake Street, Kent, Ohio 44240 U.S.A. Telephone: 330-673-3452 Fax: 330-677-3306

Rotron Moisture Separator

Thank you for purchasing an AMETEK Rotron MS series moisture separator. When matched with the correct Rotron blower, and properly installed and maintained, this separator will effectively and efficiently remove moisture from the air stream. To ensure good results, please take the time to read these instructions before starting the installation of your moisture separator.

	Separator	Max. CFM	Max. Vac	Capacity	Blowers – DR, EN & CP	
\rightarrow	MS200P(S)	200	12* IHg	7 gal.	101-555, 513, 523, 623	
	MS200D(S)	200	22 IHg	10 gal.	101-555, 513, 523, 623	
	MS300P(S)	300	12* IHg	7 gal.	606, 6, 707, 823	
	MS300D(S)	300	22 IHg	10 gal.	606, 6, 707, 823	
	MS350B(S)	350	22 IHg	40 gal.	808, 1223	
	MS500B(S)	500	22 IHg	40 gal.	858	
	MS600B(S)	600	22 IHg	40 gal.	909	
	MS1000B(S)	1000	22 IHg	65 gal.	14	
	Note: "S" suffix denotes presence of XP high level switch.					
	* Special Construction	on with 20 IHg a	capability avail	able.		

Sizing for Optimal Efficiency

Installation

- 1. **Unpacking** For MS200/300, remove drain valve taped to packing material and box containing liquid level switch, if so equipped. For MS350/500/600, remove box containing valve hardware as well as box containing liquid level switch (if so equipped) and remove internal cardboard packaging and cable ties from screen assembly.
- 2. **Bolt Down** (w/ feet included) For MS200/300 models, built-in feet or a mounting ring is included. It is recommended that these units be bolted in place. All models will only work in an upright position.
- 3. **Piping** Attach to system piping with flexible couplings to minimize stress incurred by rigid system piping. The connections should be airtight but not sealed with an adhesive for ease of disassembly during routine maintenance. Install drain valve, using teflon tape on threads.
- 4. **Installation and Wiring of Liquid Level Switch** Remove plug from the bulkhead fitting. Thread the switch by hand until snug with index arrow pointing down. Wire in accordance with the nameplate wiring schematic. Typically, the wiring is connected back to the starter to shut down the system but can be used for other purposes.
- 5. **Install/Adjust Relief Valve** For MS500/600, first install the relief valve with teflon tape on threads. Use a wrench, but tighten only enough to prevent leakage. Next step for all MS units, back off the relief valve adjuster relaxing spring pressure. Then block the moisture separator inlet while measuring the motor current. Adjust the valve until the motor current is 90% of the max. nameplate blower amps.
- 6. **Continuous Service** For cold weather service, appropriate steps should be taken to prevent freezing. Also, the maximum vacuum ratings are based on 115°F maximum. Consult factory for higher potential ambients.

Note: A moisture separator is not a substitute for an inline air filter. A Rotron inline filter should be used to remove particles that pass through the separator.

Typical Vapor Extraction System



Operation

Moisture-laden air enters the separator through the tangential inlet. Cyclonic action removes free moisture from the air stream and allows the air to discharge through the top of the separator. When the separator is full, the float valve shuts off the air flow through the separator, and the relief valve opens to limit the vacuum of the blower.

To drain the separator, turn off the blower and open the drain valve at the bottom of the separator. Caution: The liquid contained in the separator should be analyzed before it is released back into the environment. It may be considered hazardous waste in certain geographical areas and require special treatment/disposal. Once the liquid is drained, the unit can be reset by turning the blower back on.

Automatic draining options are at the discretion of the customer.

Maintenance

This MS series moisture separator has been designed to require minimal maintenance. During normal operation a layer of sludge may build up on the bottom of the separator. As necessary, the top assembly of the moisture separator should be removed and the inside cleaned out with water. Keeping the inside clean will prevent the valve from becoming clogged with sediment. The relief valve should be inspected upon emptying the separator and readjusted (per installation instruction 5) upon restart.

If you have any questions regarding this product, contact your local sales representative or our Application Engineering Department at the factory.





GASKET







Moisture Separator

Service and Parts Manual



Item Qty.

No.	Reg'd	Description					
1	1	Drum Assembly	See Next Page	See Next Page	See Next Page	See Next Page	See Next Page
7	1	Bulkhead Fitting Drain	529830	529830	Not Used	529830	529830
8	1	Drain Valve	523374	523407	523374	523407	523407
9	1	Pipe Nipple Drain	551140	523406	155416	523406	523406
10	1	Relief Valve Stem	529318	529318	529318	Not Used	550621
11	1	Outlet	529323	529323	529323	See Outlet Assy #42 Below	550646
12	1	Spring - Relief Valve	155339	155339	155339	Not Used	155476
13	1	Nut-Knurled Relief Valve	155342	155342	155342	Not Used	155471
14	1	Lid	550674	523403	Not Used	523404	550566
	1	Gasket for lid	Not Used	551102	Not Used	551102	551640
15	3	Washer, Flat, Lid/Outlet	155159	155159	155091	Not Used	155159
16	3	Washer, Lock, Lid/Outlet	120338	120338	251787	Not Used	120338
17	3	Bolt, Lid/Outlet	155343	155343	120255	Not Used	155343
18	1	Lock Ring - Lid	See Next Page	528926	Not Used	528926	550652
19	1	Float Ball	528803	528803	528803	528956	550569
20	1	Cage, Float	551138	528957	529887	528958	550568
21	1	Endcap	529884	529884	529884	528954	550678
23	6	Screws Cage	251645	251645	251645	(9 pcs) 251645	(11 pcs) 251645
24	4	Tie Cable *	155276	155276	Not Used	155276	155276
25	13	Washer Cage - Various Places	155115	155115	(9 pcs) 155115	(16 pcs) 155115	(18 pcs) 155115
26	3	Screws Endcap	155415	155415	155415	(3 pcs) 251645	(3 pcs) 251645
27	3	Spacer Endcap	155417	155417	155417	Not Used	Not Used
28	1	Pipe Plug - Outlet	155344	155344	155344	Not Used	155344
29	1	Foot Clamp	See Next Page	Not Used	Not Used	Not Used	Not Used
30	1	Bolt, Foot Clamp	120325	Not Used	Not Used	Not Used	Not Used
31	1	Nut, Foot Clamp	155049	Not Used	Not Used	Not Used	Not Used
32	1	Lockwasher, Foot Clamp	120203	Not Used	Not Used	Not Used	Not Used
33	1	Bulkhead Fitting Float Switch	See Next Page	See Next Page	Not Used	See Next Page	See Next Page
34	1	Float Switch	See Next Page	See Next Page	See Next Page	See Next Page	See Next Page
36	1	Bushing, Float Switch	See Next Page	See Next Page	Not Used	See Next Page	See Next Page
37	1	Gasket, Blulkhead Fitting - Drain Spigot	529831	529831	Not Used	529831	529831
38	1	Gasket, Bulkhead Fitting	See Next Page	See Next Page	Not Used	See Next Page	See Next Page
39	1	Bushing, Drain Valve	529849	Not Used	Not Used	Not Used	Not Used
40		Gasket, Outlet	529514	529514	529514	Not Used	550653
41		Pipe Plug, Float Switch	Not Used	Not Used	See Next Page	Not Used	Not Used
42		Outlet Assembly (consists of one each of the following)			Ti Pi S R	ee - 523402 ipe - 116135 eat Float - 528955 educer, Relief Valve - 528959	
					В	ushing, Reliet Valve - 551639	

	43	Relief Valve Complete	Not Used	Not Used	Not Used	523230	Not Used
--	----	-----------------------	----------	----------	----------	--------	----------

Model	Model Part No.	Item No.	Item Part #	N
MS200DS	038355	1	529463	
		14	529006	
		18	529004	
		29*	529367	N
		33	529841	
l .		34	529461	
		36	552634	N
		38	529842	
MS300DS	038356	1	529464	
		14	529006	N
		18	529004	
		29*	529367	
		33	529841	
		34	529461	
		36	552634	N
		38	529842	
MS200D	038275	1	523362	
		14	529006	
		18	529004	
		29*	529367	
		33	Not Used	I.
		34	Not Used	
		36	Not Used	
		20	Not Llood	
M\$300D	038276	1	5511/1	
WI3300D	030270	14	520006	N.
		14	529000	
		10	529004	
		29	J29307	
		33	Not Used	-
		34	Not Used	N
		36	Not Used	
		38	Not Used	
MS350BS	038357	1	529465	
		33	529841	
		34	529461	N
		36	552634	
		38	529842	
MS350B	038277	1	523399	
		33	Not Used	
		34	Not Used	
		36	Not Used	
		38	Not Used	N
MS300PS	038520	1	529668	
		34	529461	
		41	Not Used	
MS1000B	038916	1	550560	
		33,34,36,38	Not Used	
MS1000B2S	080019	1	550566	
		18	Not Used	
		33 (2 pcs)	529841	l l'
		34 (2 pcs)	529461	
l		36 (2 pcs)	552634	
		38 (2 pcc)	529842	

Model	Model Part No.	Item No.	Item Part #
MS200PS	038519	1	529435
		34	529461
		41	Not Used
MS300P	038518	1	529668
		34	Not Used
		41	155405
MS200P	038517	1	529435
		34	Not Used
		41	155405
MS500B	038354	1	529465
	(Obsolete)	33	529841
		34	529461
	080660	36	552634
	(New P/N)	38	529842
MS600BS	038353	1	529466
	(Obsolete)	33	529841
		34	529461
	080659	36	552634
	(New P/N)	38	529842
MS500B	038075(Obsolete)	1	523399
		33	Not Used
	080658 (New P/N)	34	Not Used
		36	Not Used
		38	Not Used
MS600B	038003	1	551143
	(Obsolete)	33	Not Used
	, ,	34	Not Used
	080657	36	Not Used
	(New P/N)	38	Not Used
MS1000BS	038914	1	550561
		33	529841
		34	529461
		36	552634
		38	529842
MS300DS	080087	1	550672
		18	523296
		29	550688
		33	529841
		34	529461
		36	552634
		38	529842
MS200DS	080086	1	550669
	000000	18	523296
		29	550688
		33	529841
		34	529461
		36	552634
		38	529842
MS50082S	080662	1	550650
10000020	000002	33 (2 pcs)	529841
		34 (2 pcs)	529/61
		36 (2 pcs)	552634
		$(2 \mu cs)$	502034
1		SO (Z pcs)	JZ904Z



FLOIECT MODEL L-6 FLOAT SWITCH

Installation and Operating Instructions





WETTED MATERIALS CHART

Model	Brass	Bronze	Ceramic	Polypropylene	301SS	30388	304SS
B-S-3-A	х		х		х		X
B-S-3-B	х	x	x	х	X		
B-S-3-C	х		x		X		X
B-S-3-H	х	X	X		X		X
B-S-3-O	х		X	X	X		
S-S-3-A			X	х	X		X
S-S-3-C			х		X	X	X
S-S-3-L			X		X	X	X
S-S-3-O			X	X	X	X	
S-S-3-S			X	Х	Х	Х	

INSTALLATION:

Unpack switch and remove any packing material found inside lower housing or float chamber.

Switch must be installed with body in a horizontal plane and arrow on side pointing down.

If switch has an external float chamber (tee), connect it to vertical sections of 1" NPT pipe installed outside vessel walls at appropriate levels. If unit has no external float chamber, it must be mounted in a 1" NPT half coupling welded to the vessel wall. The coupling must extend through the wall.

Inspect and clean wetted parts at regular intervals.

ELECTRICAL CONNECTIONS:

Connect wire leads in accordance with local electrical codes and switch action required. N.O. contacts will close and N.C. contacts will open when liquid level causes float to rise. They will return to "normal" condition on decreasing liquid level. Black = common, Blue = N.O. and Red = N.C.

For units supplied with both internal and external grounds, the ground screw inside the housing must be used to ground the control. The

Explosion-Proof; U.L. and C.S.A. Listed -Class I, Groups *A, B, C & D Class II, Groups E, F & G CENELEC: EExd IIC T6 (T amb=75°C) *(Group A, stainless steel body only) PHYSICAL DATA Temperature Limit: 220°F (105°C) maximum Maximum Pressure: See chart below Switches: One or two SPDT snap switches Electrical Rating: U.L.: 5A @ 125/250 VAC. C.S.A. and CENELEC: 5A @ 125/250 VAC, 5A resistive, 3A inductive @ 30 VDC. Optional ratings: MV option-Gold contacts for dry circuits. Rated 0.1A @ 125 VAC MT option: 400°F (205°C) 5A @ 125/250 VAC (not listed). Wiring Connections: 3-18" (460mm) wire leads, 18 ga. CENELEC models only: push-in type terminal blocks Black = common, blue = N.O., red = N.C. Minimum Specific Gravity: Polypropylene float - 0.9 Round SS float - 0.7 Cylindrical SS float - 0.5 Switch Body: Brass 3/4" NPT conduit connection.

Switch Body: Brass 3/4" NPT conduit connection. For SS switch body, change model no. to L6EPS. Piping/Mounting Connection: 1" NPT

Installation: Horizontal, index arrow pointing down. Weight: 1 lb. (.5 KG); w/external chamber 1-3/4 lb. (.8 KG)

MAXIMUM PRESSURE CHART

Model Number	Float	Pressure Rating PSIG (KG/CM ²)
L6EPB-B-S-3-A L6EPB-B-S-3-B L6EPB-B-S-3-C L6EPB-B-S-3-H L6EPB-B-S-3-A L6EPB-S-S-3-A L6EPB-S-S-3-C L6EPB-S-S-3-L	Cylindrical SS Polypropylene Round SS Polypropylene Cylindrical SS Round SS Round SS	200 (14) 250 (18) 350 (25) 250 (18) 1000 (70) 200 (14) 350 (25) 350 (25)
L6EPB-S-S-3-O L6EPB-S-S-3-S	Polypropylene Polypropylene	2000 (140) 2000 (140)

external ground screw is for supplementary bonding when allowed or required by local code. Some CSA listed models are furnished with a separate green ground wire. Such units must be equipped with a junction box, not supplied but available on special order.

CENELEC certified models include a junction box. Cable should enter enclosure through an approved EX cable gland, not supplied. Push stripped and tinned leads into appropriate openings in terminal block(s). To connect fine stranded leads or to remove any wire, depress spring release with small screwdriver first.

All wiring, conduit and enclosures must meet applicable codes for hazardous areas. Conduits and enclosures must be properly sealed. For outdoor or other locations where temperatures vary widely, precautions should be taken to prevent condensation inside switch or enclosure. Electrical components must be kept dry at all times. **CAUTION:** To prevent ignition of hazardous atmospheres, disconnect the device from the supply circuit before opening. Keep assembly tightly closed when in use.

Dimensions on reverse

W.E. ANDERSON DIV., DWYER INSTRUMENTS, INC. P. O. BOX 358 • MICHIGAN CITY, INDIANA 46360, U.S.A.

Telephone 219/879-8000 Fax 219/872-9057
FLOIECT. MODEL L-6 FLOAT SWITCH — DIMENSION DRAWINGS



Cylindrical Stainless Steel Float

With External Float Chamber (Tee)



CSA, CENELEC Conduit Enclosure

Limited Warranty: The Seller warrants all Dwyer instruments and equipment to be free from defects in workmanship or material under normal use and service for a period of one year from date of shipment. Liability under this warranty is limited to repair or replacement FO.B. factory of any parts which prove to be defective within that time or repayment of the purchase price at the Seller's opinion provided the instruments have been returned, transportation prepaid, within one year from the date of purchase. All technical advice, recommendations and services are based on technical data and information which the Seller believes to be reliable and are intended for use by persons having skill and knowledge of the business, at their own discretion. In no case is Seller liable beyond replacement of equipment FO.B. factory or the full purchase price. This warranty does not apply if the maximum ratings label is removed or if the instrument or equipment is abused, altered, used at ratings above the maximum specified, or otherwise

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	FRP Molded Shelter			D-100
Date: 7/01		Scale: 1"=1'		wn: JRP
P.O. Box 3	311	 Dyer, TN 383 	Ckd:	
We've G	ot	(731) 692-39	СН	
You Covered!		Fax: (731) 6	92-	4209

The HEAVY DUTY molded series is a one-piece fiberglass composite construction made with rigid thixotropic resins and 30% chopped glass to a thickness of 3/16". The enclosure is insulated with a 2" polyesterene convoluted sound foam rated at roughly 8-10dBa reduction. The outside surface is white, polyester gelcoat with a UV inhibitor. The FRP base has a 2-1/4" mounting flange around the bottom for anchoring. The enclosure is equipped with a 7" cast aluminum handle, a 30# spring-loaded hook, a stainless steel hasp, and 4" x 3" stainless steel hinges. Fasteners are 1/4" stainless steel nuts & bolts. Other specs are available for special needs.

FEATURES

- One-piece Molded Fiberglass
- Polyurethane Foam Insulation
- Polycross Link 3½ x 3½ Hinges Non-corrosive
- Nylon Bolts and Nuts
 7" Cast Aluminum

Handle

- 30 lb. Spring Loaded Latch
- Molded Fiber-glass Base
- Nest for Shipping
- Easy Access
- Light Weight

TYPICAL MOLDED COVER



SIZES	AVAILABLE
D-207-4	8:63"l,44"w,48"h
D-207:	60"l, 41"w, 38"h
D-101:	63"l, 36"w, 40"h
D-106:	50"l, 40"w, 42"h
D-100:	43"l, 30"w, 36"h
D-105:	47"l, 23"w, 26"h
D-102:	27"l, 20"w, 29"h

SPECIFICATIONS: The molded fiberglass enclosure shall be constructed with rigid thixotropic resin and 30% glass chopped in 2" random pattern 3/32" to 3/16". Exterior finish to be white orthophthalic polyester gel-coat .02" to .04". Inside surface to be insulated with 2 lb. density sprayed-on polyurethane foam $\frac{1}{2}$ " to 1 $\frac{1}{2}$ ". Fiberglass base is hinged using polycross link $\frac{3}{2}$ " x $\frac{3}{2}$ " non-corrosive hinges. Thirty pound spring loaded latch hooks to 7" cast aluminum handle. All hardware is attached with nylon bolts and nuts.

FIBERGLASS MODULAR ENCLOSURE



GENERAL SPECIFICATIONS: The enclosure shall be constructed of a durable xylem frame coated with rigid thixotropic resin and 30% glass chopped in 2" random pattern 3/32" to 3/16". Exterior finish to be white isophthalic polyester gel-coat .02" to .04" with ultra-violet inhibitors. The interior of the wall is insulated with 2 lb. density sprayed-on polyurethane foam ½" to 1½". Interior and exterior surfaces are reinforced with 3/32" to ½" chopped fiberglass. The interior of the enclosure shall be accessible by door(s) of the same composit construction as the walls and roof. Each door(s) shall have stainless step? hinges and shall have a locking type handle. Integral fiberglass flanges hold the roof to the walls and the walls to the floor. The enclosure shall be designed and constructed so that all side walls, doors and roof can be removed if required.

FEATURES

- Variation in Size & Design
- 2" or 4" Wall Construction
- Corrosion Resistant Fiberglass Encapsulation
- Polyurethane Foam Insulation
- Quick Installation
- Standard White Color
- Removable Walls & Roof
- Hinged or Lift-Off Doors
- Stainless Steel Fasteners
- Door Seal Gasket
- No Painting
- Easily Assembled or Disassembled
- Shipped Knocked Down
- Non-Corrosive Hardware

OPTIONS

- Louvered Vent
- Exhaust Fan
- Thermostat for Fan
- Electrical Package
- Plexiglass Door Window
- Various Colors Available
- Stainless Steel Handle
- Stainless Steel Slip-Joint Hinges
- Lifting Eyes
- Fiberglass Vent Hood



P.O. BOX 311 • DYER, TN. 38330 • 731-692-3986

SERIES ' D '

MOLDED FIBERGLASS ENCLOSURES

The Dyer Fiberglass 'D' Series is a one-piece female-molded series of enclosures that consists of (12) basic sizes from the D-103 to the D-303. These enclosures are used for a variety of jobs in any industry where equipment must be protected from the environment--or the environment protected from the equipment. Typically, DFI's customers have used the 'D' Series covers to protect wellheads, small tanks or pumps, small-to-medium sized lift-stations, and small-to-medium sized blowers or compressors. The 'D' Series covers have thermal insulation values ranging from R-14 to R-19, and sound reduction values ranging from 5 to 12 dBa (averaged across all frequencies and at all points on the cover.) Each basic model in the 'D' Series has a number of option packages.

The WHOLESALE OPTION package is the basic package, designed for private use and intended for quantity sales. Each cover is constructed of a fiberglass composite laminate made with rigid thixotropic resins and 30% chopped strand glass to a thickness of 1/8". Each cover is insulated with a 2 lb. polyurethane foam, resulting in an R-14 thermal insulation value--and about 5 dBa in sound reduction. The outside surface is a polyester gelcoat, usually white, with an UV inhibitor. The enclosure is attached by hardware to an FRP open-base flange with the bottom wide enough to anchor to a surface. This package includes polyerosslink (plastic) hinges; stainless steel nuts and bolts; one 7" cast aluminum handle; and a 30 lb. spring-loaded latch (also known as a 'hook'). On the smaller covers, our customers often prefer to use hooks and handles on each end, so that they can lift the cover straight off their equipment without tilting it back. We will gladly substitute this modification at no extra cost. This option package is generally offered to supply houses and well-drillers who keep a stock on hand, and is designed to be sold eventually to private individuals as a residential application.

The STAINLESS STEEL OPTION package substitutes a pair of stainless steel hinges (3 hinges on some larger models); stainless steel nuts and bolts; a stainless steel hasp; and up to (2) 4" adjustable aluminum vents. On some smaller covers, we will substitute an extra hook, handle and lockable hasp for the hinges, upon customer request, at no additional cost. Other options, such as a continuous stainless steel piano hinge or larger vents, are available at extra cost.

The **HEAVY DUTY OPTION** package adds 1/3 extra resin and glass to the SS Option Package. Insulation values increase to R-19, sound reduction moves into the 6-9 dBa range, and the cover itself is more resistant to damage. This is the package we recommend for covering small blowers, or small engines; or if the equipment is located in the northern U.S., Canada, Alaska, or similar climates.

The HEAVY DUTY SOUND OPTION package is the same as the HD Option Package, but replaces the sprayed-in polyurethane foam with a dual-purpose acoustical foam, which retains the thermal insulation values but improves sound attenuation to 10-12 dBa.

Fiberglass Covers, Buildings & Enclosures of All Types

www.dyerfiberglass.com



				BILL OF MATERIALS	
ITEM	QTY	item Label	MFG.	DESCRIPTION	PART NUMBER
1	1	ENCL1	RITTAL	20x15x8 NEMA 4 ENCLOSURE	AE1045.500
2	2	ENCL1	RITTAL	SCREWDRIVER INSERT	SZ2464
3	1	DISC.	ABB	3P 40 AMP DISCONNECT	0T40F3
4	1	DISC.	ABB	NEMA 4 DISCONNECT HANDLE	OHB65L6
5	1	DISC.	ABB	DISCONNECT SHAFT	0XP6X210
6	1	FB-1	MERSEN	2P 30A CLASS CC FUSE BLOCK	30322R
7	3	FU1,2,3	BUSSMANN	20 AMP CLASS CC FUSE	FNQR-20
8	1	М	SIEMENS	17 AMP IEC CONTACTOR	3RT1025-1AK60
9	1	OL	SIEMENS	OVERLOAD RELAY (9–12.5 FLA)	3RU1126-1KB0
10	1	SS-1	ABB	3 POS. S.S. SPRG. RET. L TO C (2 N.O.)	M3SS7-30B-20
11	1	PL-1	ABB	GREEN F.V. PILOT LIGHT - 120V	CL-100G
12	3	PL-2,3,4	ABB	RED F.V. PILOT LIGHT - 120V	CL-100R
13	1	PB-1	ABB	BLACK FLUSH P.B. (1 N.O./1 N.C.)	MP1-30B-11
14	1	ETM	ENM	BLACK FLUSH P.B. (1 N.O./1 N.C.)	MP1-30B-11
15	1	T1	SIEMENS	250VA CONTROL TRANSFORMER	MT0250F
16	1	FB-2	MERSEN	2P 30A CLASS CC FUSE BLOCK	30322R
17	2	FU-4,5	MERSEN	3 2/10 AMP CLASS CC FUSE	ATDR-3 2/10
18	1	FU-6	MERSEN	2 AMP TIME DELAY FUSE	TRM-2
19	1	TR1	FINDER	2 POLE TIMER - 120V	85.02.0.125.0000
20	1	TR1	FINDER	2 POLE TIMER SOCKET	94.82
21	3	R1,2,3	FINDER	4 POLE RELAY – 120V	56.34.8.120.0040
22	3	R1,2,3	FINDER	4 POLE RELAY SOCKET	96.74
23	14	T.B.'S	PHOENIX	TERMINAL BLOCK	3004362
24	1	T.B.'S	PHOENIX	TERMINAL BLOCK END COVER	3003020
25	2	T.B.'S	PHOENIX	DIN RAIL END RETAINER	0800886
26	2	GROUND	BURNDY	14-2 AWG GROUND LUG	DLA2
27	1	ENCL2	ABB	3.5x3.25x2.75 NEMA 12 ENCLOSURE	1436A
28	1	PL-5	ABB	RED F.V. PILOT LIGHT - 120V	CL-100R

REVISIONS								
REV.	DATE	BY	CHKD.	DESCRIPTIO	N			
A	8/5/15	S.G.	R.M.	ADDED ADDITIONAL	ALARMS			
J.E. GASHO & ASSOCIATES PO# 42503-2950 THE ABSED ANY INFOR					THIS DOCUME EXPLOITATION THE ABSENCE ANY INFORMA	NT IS THE PR OR TRANSFER OF ANY AGRE	operty of inte of any infor Eement with in d in this doci	Ernational control products. The Mation Herein is not permitted in Ternational control products and UMENT MAY NOT BE RELEASED WITHOUT
ICF	° S.O	.#	XXX		THE CONSENT	OF INTERNATI	ONAL CONTROL	PRODUCTS.
H	IP	_		2		TITLE	TARTER C	CONTROL PANEL
V	/OLTAG	Ε_	208,	/1/60	DATE 6/1/15	PAGE 2 OF 2	DWG NO. GASH137	INTERNATIONAL CONTROL PRODUCTS, INC.





1436/1438 Series Junction Boxes - NEMA 12, 13 Lift Off, Screw Cover



1436 Standard Depth

Application

- Designed for use as instrument enclosures, electrical junction boxes or terminal wiring enclosures.
- Provides a degree of protection from falling dirt, dust, oil and water.

Standards

- UL 508 Type 12 and 13
- CSA Type 12 and 13
- Complies with
 - NEMA Type 12 and 13
 - IEC 60529, IP54



1438 Extra Depth

Construction

- Formed from 14 gauge steel.
- Smooth, continuously welded seams without knockouts, cutouts or holes.
- Welded brackets provide for enclosure mounting.
- Lift off cover is secured with captive, plated steel screws, and supported on internal hinges except as noted on charts.
- Cover screws fasten into threaded, sealed wells.
- Oil resistant gaskets are permanently secured.
- A bonding stud is provided on the door and a grounding stud is provided in the enclosure.

Finish

 Cover and enclosure are phosphatized and finished in ANSI 61 gray recoatable powder coating.

15

Standard Depth Series (1436)

				Cer	iters	Overall Di	mensions	Ship Wt.
Part No.	А	В	С	D	E	L	W	lbs
1436A ¹	3.50	3.25	2.75	2.38	4.00	4.50	3.56	2
1436B ¹	5.75	3.25	2.75	2.38	6.25	6.75	3.56	2
1436C ¹	8.00	3.25	2.75	2.38	8.50	9.00	3.56	3
1436D1	10.25	3.25	2.75	2.38	10.75	11.25	3.56	4
1436F	7.25	6.25	3.00	5.38	7.75	8.25	6.56	5
1436H	9.50	6.25	3.00	5.38	10.00	10.50	6.56	5
1436K	9.50	8.50	3.00	7.63	10.00	10.50	8.81	7
14360	11.75	8.50	3.00	7.63	12.25	12.75	8.81	8
1436S	11.75	10.75	3.00	9.88	12.25	12.75	11.06	9
1436V	14.00	10.75	3.00	9.88	14.50	15.00	11.06	11

¹ Not hinged

Technical references and CAD downloads available at www.hammondmfg.com

All dimensions in inches unless specified otherwise

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1436/1438 Series Junction Boxes - NEMA 12, 13

Lift Off, Screw Cover



Hinge Detail Retractable pin allows door to be mounted on left or right side

Extra Deep Series (1438)

Dort No					Centers		Overall Dimensions	
Part No.	А	В	С	D	E	L	W	lbs
1438A ¹	4.00	4.00	4.75	3.13	4.50	5.00	4.31	3
1438B	6.00	4.00	4.75	3.13	6.50	7.00	4.31	4
1438C	8.00	4.00	4.75	3.13	8.50	9.00	4.31	5
1438D	10.00	4.00	4.75	3.13	10.50	11.00	4.31	5
1438F	7.25	6.25	4.75	5.38	7.75	8.25	6.56	5
1438H	9.50	6.25	4.75	5.38	10.00	10.50	6.56	5
1438K	9.50	8.50	4.75	7.63	10.00	10.50	8.81	7
14380	11.75	8.50	4.75	7.63	12.25	12.75	8.81	8
1438S	11.75	10.75	4.75	9.88	12.25	12.75	11.06	9
1438V	14.00	10.75	4.75	9.88	14.50	15.00	11.06	11

¹ Not hinged

Technical references and CAD downloads available at www.hammondmfg.com

All dimensions in inches unless specified otherwise

16

Compact enclosures AE

Width: 380 - 800, height: 500 - 1000





Surface finish:

Enclosure and door: Dipcoat-primed, powder-coated on the outside in textured RAL 7035 Mounting plate: Zinc-plated

Protection category: to EN 60 529/10.91: IP 56, IP 66 for AE 1038.500, AE 1338.500, AE 1045.500, AE 1050.500, AE 1350.500, AE 1060.500, AE 1360.500, Complies with NEMA 4.



Supply includes:

r/h door hinge,

with 2 cam locks, foamed-in door seal, zinc-plated mounting plate.

base.

side.

Enclosure of all-round solid con-

struction, single door, 1 gland plate in the enclosure

may be swapped to opposite



Approvals, see page 26. Detailed drawing, see page 1083.

Width (B1) in mm	Packs of	380	380	400	500	50	D 500	600	600
Height (H1) in mm		600	600	500	500	50	D 700	600	600
Depth (T1) in mm		210	350	210	210	30	250	210	350
Mounting plate width (F1) in mm		334	334	354	449	44	9 449	549	549
Mounting plate height (G1) in mm		570	570	475	470	47	0 670	570	570
Mounting plate thickness in mm		2.5	2.5	2.0	2.5	2.5	5 3.0	2.5	2.5
Model No. AE	1	1038.500	1338.500	1045.500	1050.500	1350.	500 1057.5	00 1060.500	1360.500
Weight (kg)		15.6	19.4	13.0	16.8	19.	6 31.2	22.8	28.4
Width (B1) in mm	Packs of	600	600	600)	600	760	760	800
Height (H1) in mm		760	760	800)	1000	760	760	1000
Depth (T1) in mm		210	350	250)	250	210	300	300
Mounting plate width (F1) in mm		549	549	549)	539	704	704	739
Mounting plate height (G1) in mm		730	730	770)	955	730	730	955
Mounting plate thickness in mm		3.0	3.0	3.0		3.0	3.0	3.0	3.0
Model No. AE	1	1076.500	1376.500	0 1058.	500 10	90.500	1077.500	1073.500	1180.500
Weight (kg)		32.1	36.0	34.	2	50.5	40.0	44.5	57.0

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, lock cylinder, plastic handles and T handles, type B, see page 886 – 889.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800. Delivery times available on request.

Accessories Page 832 AE IP 69K Page 121 AE stainless steel Page 273 AE EMC-shielded Page 290 AE Ex-proof Page 287



Metal gland plates, pre-punched, Model No. see page 968.



Plastic wiring plan pocket, screw-fastened, Model No. see page 897.

В 1.2 **Compact enclosures AE**

PLATES

- 1. Generalized Hydrogeologic Cross Section A-A'
- 2. Generalized Hydrogeologic Cross Section B-B'
- 3. Remedy for the Site: Remedial Alternatives S2 for Soil (Track 4-Restricted Residential Use); G1, G2 and G3 for Groundwater; and SV1, SV2 and SV3 for Soil Vapor
- 4. Elevation of Top of Remaining Contamination and As-Built Details of the Site Cover System
- 5. Confirmation Soil Samples
- 6. Documentation Soil Samples



NORTH 5TH STREET

€ _{GWP-7}

Α'

▲ ^{SV-3}

₩ MW-4/B-4/SG

♥● _{RA-19}

RA-30

RA-18

MW-5/B-5/SG-5 ♥



LEGEND







PRIMARILY SILT AND FINE—MEDIUM SAND, AND FINE TO MEDIUM SAND WITH VARYING AMOUNTS OF GRAVEL AND COARSE SAND

PRIMARILY SILT WITH VARYING AMOUNTS OF SAND, GRAVEL AND CLAY

PRIMARILY SILT WITH SHELL AND VARYING AMOUNTS OF SAND

PRIMARILY CLAY AND SILT WITH VARYING AMOUNTS OF SAND AND GRAVEL

INFERRED GROUNDWATER ELEVATION FROM FEBRUARY 2013 IN FEET ABOVE BROOKLYN BOROUGH TOPOGRAPHIC/HIGHWAY DATUM

LAND SURFACE

SCREENED INTERVAL

- SUMP

------ SOIL BORING

NOTES

1. GEOLOGIC CONDITIONS ARE NOT PROJECTED ONTO THE CROSS SECTION, ONLY SOIL AND WATER QUALITY DATA.

2. ALL SOIL SAMPLE RESULTS SHOWN IN μ g/kg.



GENERALIZED HYDROGEOLOGIC **CROSS SECTION A-A'**

149 KENT AVENUE BROOKLYN, NEW YORK					
Prepared For:					
KENT & WYTHE OWNERS LLC					
	Compiled by: D.T.B.	Date: 17JUL15	PLAT		
ROUX	Prepared by: J.A.D.	Scale: AS SHOWN			
ROUX ASSOCIATES, INC.	Project Mgr: W.M.	Project: 2158.0001Y000	1		
& Management	File: 2158.0001Y19	7R.05.DWG			

- -80

-90



GWP-5 RA-6 RA-7/MW-7D

▲ ^{SV-3}

Α'

SS-6 RA-32

RA-16 MW-3/B-3/SG-3

N N

LOADING DOCKS

₩ 🔶

GWP-7

RA-1+ RA-33

RA-20149 KENT AVENUE

RA-31

- CONCRETE PUMP PAD 💭

₩₩-4/B-4/SG-4 RA-19

RA-30

■ _{RA-23}

RA-34_ MW-6/B-6/SG-6

MW-5/B-5/SG-5 [♥]

URS-6

SS-5

RA-18





NOTES

- 1. GEOLOGIC CONDITIONS ARE NOT PROJECTED ONTO THE CROSS SECTION, ONLY SOIL AND WATER QUALITY DATA.
- 2. ALL SOIL SAMPLE RESULTS SHOWN IN μ g/kg.
- 3. ALL GROUNDWATER SAMPLE RESULTS SHOWN IN μ g/L.



GENERALIZED HYDROGEOLOGIC **CROSS SECTION B-B'**

149 KENT AVENUE BROOKLYN, NEW YORK						
Prepared For:	Prepared For:					
KENT & WYTHE OWNERS LLC						
	Compiled by: D.T.B.	Date: 17JUL15	PLATE			
ROUA	Prepared by: G.M.	Scale: AS SHOWN				
ROUX ASSOCIATES, INC.	Project Mgr: W.M.	Project: 2158.0001Y000	2			
& Management	File: 2158.0001Y19	7R.06.DWG				





<u>INSET 1 – HOT SPOT 2 AREA</u> SCALE: 1"=10'



LEGEND

MW-1/B-1/SG-1	LOCATION OF GROUND WATER MONITORING WELL/ SOIL BORING/SUBSLAB SOIL VAPOR SAMPLING POINT INSTALLED BY AKRF ENVIRONMENTAL CONSULTANTS (ABANDONED/REMOVED IN 2014/2015)
^{SS−1} ①	APPROXIMATE LOCATION OF SUB SLAB VAPOR SAMPLING POINT INSTALLED BY ROUX ASSOCIATES, INC. (ABANDONED/REMOVED IN 2014)
RA-1	LOCATION OF SOIL BORING (COMPLETED FEBRUARY 2013 BY ROUX ASSOCIATES, INC.)
RA-13/MW-13	LOCATION OF SOIL BORING AND MONITORING WELL (ABANDONED/REMOVED IN 2014)
SV-1	LOCATION OF SOIL VAPOR SAMPLING POINT (ABANDONED/REMOVED IN 2014)
GWP−1 ●	LOCATION OF GROUNDWATER PROFILE BORING
RA-32	LOCATION OF SOIL BORING (RA—32 THROUGH RA—34) (CONTINUOUS SAMPLING TO +10 FEET ELEVATION)
RA-29	LOCATION OF SOIL BORING (RA–29 THROUGH RA–31) (CONTINUOUS SAMPLING TO WATER TABLE)
RA-35	LOCATION OF SUPPLEMENTAL SOIL BORING (RA–35 AND RA–36) COMPLETED ON AUGUST 5, 2013
NE	NO EXCEEDANCES

REMEDIATION	LEGEND

REMEDIATION LEGE	ND
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO -19 FEET ELEVATION (SEE NOTE 1)
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +6 FEET ELEVATION (SEE NOTE 1)
	ACTUAL LIMITS OF EXCAVATION AND BACKFILL TO —19 FEET ELEVATION IN HOT SPOTS 1 AND 2 (SEE NOTE 1)
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +1 FEET ELEVATION
	LIMITS OF SITE COVER SYSTEM AND EXCAVATION (SEE REMEDIATION NOTES 1 AND 2)
SDS−1 ⊗	LOCATION OF 2014 SIDEWALL CONFIRMATION SOIL SAMPLE
BCS-1	LOCATION OF 2014 BOTTOM CONFIRMATION SOIL SAMPLE
SDS−1 ⊗	LOCATION OF 2014 SIDEWALL DOCUMENTATION SOIL SAMPLE
BDS-1	LOCATION OF 2014 BOTTOM DOCUMENTATION SOIL SAMPLE
ow−4 🔶	LOCATION OF EXISTING OFFSITE MONITORING WELL

IP-2 IP-15	
B−3 ● TP−1	

2014 IN SITU ZERO VALENT IRON INJECTION POINT 2015 IN SITU ZERO VALENT IRON/EMULSIFIED VEGETABLE OIL INJECTION POINT 2014 WASTE CHARACTERIZATION SOIL SAMPLE 2014 TEST PIT

LIMITS OF SOIL REQUIRED TO BE HANDLED AS U210 LISTED HAZARDOUS WASTE IF EXCAVATED IN THE INTERVAL FROM +16 TO -6 FEET ELECATION BASED ON NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION-APPROVED FEBRUARY 11, 2014 "CONTAINED-OUT" MODIFICATION REQUEST LETTER LIMITS OF SOIL REQUIRED TO BE HANDLED AS U210 LISTED HAZARDOUS WASTE IF EXCAVATED BELOW -6 FEET ELEVATION BASED ON NEW

YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION—APPROVED FEBRUARY 11, 2014 "CONTAINED—OUT" MODIFICATION REQUEST LETTER SECANT PILE WALL

------ ALPHA-NUMERIC GRID LINE

<u>INSET 2 – HOT SPOT 1 AREA</u> SCALE: 1"=10'

GENERAL NOTES

- 1. THE ACTUAL LIMITS OF EXCAVATION IN HOT SPOTS 1 AND 2 EXTENDED BEYOND THE LIMITS REQUIRED FOR REMEDIATION TO ACCOMMODATE THE CONSTRUCTION OF THE BUILDING FOUNDATION.
- 2. THE ENTIRE PROPERTY (INCLUDING THE HOT SPOT AREAS) WAS EXCAVATED AND COVERED BY THE SITE COVER SYSTEM COMPRISED OF BUILDING FLOOR SLAB/FOUNDATION, TWO TO THREE INCH MUD SLAB AND SIX INCH GRAVEL BASE, AND,
- IN HOT SPOTS 1 AND 2, THE CEMENT-BENTONITE BACKFILL. 3. EXCAVATION FOR BUILDING CONSTRUCTION EXTENDED THREE TO FIVE FEET BEYOND THE WESTERN, EASTERN AND SOUTHERN PROPERTY LINES. EXCAVATION ACROSS THE SITE
- WAS TO A MINIMUM OF +4 FEET ELEVATION.
- 4. ALL ELEVATIONS ARE REFERENCED TO THE BROOKLYN BOROUGH TOPOGRAPHICAL/HIGHWAY DATUM.
- 5. THE FORMER FLOOR SLAB WAS LOCATED AT +16 FEET ELEVATION.
- 6. BASEMAP PREPARED BASED ON SURVEY DATA COLLECTED BY ANGLE OF ATTACK LAND SURVEYORS, LLC ON JUNE 1, 2013. 2014 SOIL BORING AND WELL LOCATIONS WERE SURVEYED
- BY MONTROSE SURVEYING CO., LLP. 7. ALPHA-NUMERIC GRID LINES ARE SPACED EVERY 50 FEET.
- 8. RAWP DECEMBER 9, 2013 REMEDIAL ACTION WORK PLAN.











LEGEND

RCA

0.14_×

- 1. ALL ELEVATIONS ARE REFERENCED TO THE BROOKLYN
- BOROUGH TOPOGRAPHICAL/HIGHWAY DATUM.

(SEE PLATE 8)

CONTAMINATION IN FEET

ARROW

SECANT PILE WALL

- 2. THE FORMER FLOOR SLAB WAS LOCATED AT +16 FEET ELEVATION.
- 3. ALPHA-NUMERIC GRID LINES ARE SPACED EVERY 50 FEET. 4. THE ACTUAL LIMITS OF EXCAVATION IN HOT SPOTS 1 AND 2

- EXTEND BEYOND THE LIMITS REQUIRED FOR REMEDIATION TO ACCOMMODATE THE CONSTRUCTION OF THE BUILDING
- FOUNDATION. 5. BASEMAP PREPARED BASED ON SURVEY DATA COLLECTED BY
- ANGLE OF ATTACK LAND SURVEYORS. LLC ON JUNE 1, 2013. 6. UNLESS OTHERWISE NOTED, SEE AS-BUILT DETAIL NO. 1



LIMITS OF EXCAVATION +2 TO 0 FEET ELEVATION

LIMITS OF EXCAVATION 0 TO -2 FEET ELEVATION

LIMITS OF EXCAVATION TO -19 FEET ELEVATION

LIMITS OF HOT SPOT EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES

DENOTES DOWNWARD SLOPE IN DIRECTION OF

SPOT ELEVATION OF TOP OF REMAINING

RECYCLED CONCRETE AGGREGATE















LEGEND

	PROPERTY LINE
B-1E	LOCATION AND DESIGNATION OF BOTTOM CONFIRMATION SAMPLE
RA-25	LOCATION AND DESIGNATION OF SIDEWALL CONFIRMATION SAMPLE
RA-24 🔵	LOCATION AND DESIGNATION OF BOTTOM AND SIDEWALL CONFIRMATION SAMPLE
<u> </u>	SECANT PILE WALL
	ALPHA-NUMERIC GRID LINE

Parameter	Standards*	Standards**	Standards**
VOCs (Concentrations in µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
2-Butanone (MEK)	120	100000	120
Acetone	50	100000	50
cis-1,2-Dichloroethene	250	100000	250
Tetrachloroethene	1300	19000	1300
trans-1,2-Dichloroethene	190	100000	190
Trichloroethene	470	21000	470
Vinyl chloride	20	900	20

µg∕kg	_	Ν
*	-	N S
**	-	N O
***	-	N R
NYSDEC	-	N E
-	-	N C
J	_	E
DUP	-	C
VOCS	-	۷
NE	-	Ν
ND	-	Ν
NA	-	Ν
FT BFFS	-	F
PI	-	T T N

REMEDIATION LEGE	ND
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO -19 FEET ELEVATION (SEE NOTE 1)
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +6 FEET ELEVATION (SEE NOTE 1)
	ACTUAL LIMITS OF EXCAVATION AND BACKFILL TO -19 FEET ELEVATION IN HOT SPOTS 1 AND 2 (SEE NOTE 1)
	LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +1 FEET ELEVATION
	LIMITS OF SITE COVER SYSTEM AND EXCAVATION (SEE REMEDIATION NOTES 1 AND 2)

BACKFILL TO

NOTES

- 1. THE ACTUAL LIMITS OF EXCAVATION IN HOT SPOTS 1 AND 2 EXTENDED BEYOND THE LIMITS REQUIRED FOR REMEDIATION TO ACCOMMODATE THE CONSTRUCTION OF THE BUILDING FOUNDATION.
- 2. THE ENTIRE PROPERTY (INCLUDING THE HOT SPOT AREAS) WAS EXCAVATED AND COVERED BY THE SITE COVER SYSTEM COMPRISED OF BUILDING FLOOR SLAB/FOUNDATION, WATERPROOFING, TWO TO THREE INCH MUD SLAB AND SIX INCH GRAVEL OR RECYCLED AGGREGATE BASE, AND, IN HOT SPOTS 1 AND 2, THE CEMENT-BENTONITE BACKFILL.
- 3. EXCAVATION FOR BUILDING CONSTRUCTION EXTENDED THREE TO FIVE FEET BEYOND THE WESTERN, EASTERN AND SOUTHERN PROPERTY LINES. EXCAVATION ACROSS THE SITE WAS TO A MINIMUM OF +4 FEET ELEVATION
- 4. ALL ELEVATIONS ARE REFERENCED TO THE BROOKLYN BOROUGH TOPOGRAPHIC/HIGHWAY DATUM.
- 5. THE FORMER FLOOR SLAB WAS LOCATED AT +16 FEET ELEVATION.
- 6. BASEMAP PREPARED BASED ON SURVEY DATA COLLECTED BY ANGLE OF ATTACK LAND SURVEYORS, LLC ON JUNE 1, 2013. LOCATIONS OF CONFIRMATION SAMPLES SURVEYED BY MONTROSE SURVEYING CO., LLP.
- 7. ALPHA-NUMERIC GRID LINES ARE SPACED EVERY 50 FEET.
- 8. RAWP DECEMBER 9, 2013 REMEDIAL ACTION WORK PLAN.





- MICROGRAMS PER KILOGRAM
- NYSDEC PART 375 UNRESTRICTED USE STANDARDS
- NYSDEC PART 375 PROTECTION OF GROUNDWATER STANDARDS
- NYSDEC PART 375 RESTRICTED RESIDENTIAL STANDARDS
- NEW YORK STATE DEPARTMENT OF
- ENVIRONMENTAL CONSERVATION NOT DETECTED ABOVE NYSDEC CP-51
- CONTAMINATED SOIL CLEANUP LEVELS ESTIMATED VALUE
- DUPLICATE SAMPLE
- VOLATILE ORGANIC COMPOUNDS
- NO EXCEEDANCE NO DETECTION
- NOT ANALYZED FOR BY LABORATORY
- FEET BELOW FORMER FLOOR SLAB THE RPD BETWEEN THE RESULTS FOR
- THE TWO COLUMNS EXCEEDS THE
- METHOD-SPECIFIED CRITERIA. THE LOWER VALUE FOR THE TWO
- COLUMNS HAS BEEN REPORTED

- RESULTS SHOWN IN BLACK TYPE EXCEED PART 375 UNRESTRICTED USE CRITERIA - RESULTS SHOWN IN BLUE TYPE EXCEED PART 375 PROTECTION OF GROUNDWATER CRITERIA - RESULTS SHOWN IN RED TYPE EXCEED PART 375 RESTRICTED RESIDENTIAL CRITERIA - RESULTS WITH YELLOW BACKGROUND EXCEED MORE THAN ONE SET OF CRITERIA

					-
RA-11A/ RA-11B/ MW-11	3/18/13	3/21/13	3/21/13	3/21/13	3/21/13
Depth (ft bffs)	10-12	23-25	23-25 DUP	33-35	38-40
VOCs (µg/kg)					
Tetrachloroethene	NE	NE	NE	12200 JV	NE
SVOCs (µg/kg)	NE	NE	NE	NA	NA
Metals (mg/kg)	NE	NE	NE	NA	NA
PCBs (µg/kg)	NE	NE	NE	NA	NA
Pesticides (µg/kg)					
4,4'-DDD	NE	NE	NE	NA	NA
4,4'-DDE	NE	NE	NE	NA	NA
4,4'-DDT	7.2	NE	NE	NA	NA

RA-12	2/21/13	2/21/13	2/21/13
Depth (ft bffs)	11-12.5	23-25	23-25 DUP
VOCs (µg/kg)			
Tetrachloroethene	11600	NE	NE
SVOCs (µg/kg)	NE	NE	NE
Metals (mg/kg)			
Chromium, Hexavalent	1.5	ND	ND
Chromium	43.9	NE	NE
PCBs (µg/kg)	NE	NE	NE
Pesticides (µg/kg)			
4,4'-DDD	4.4 NJV	ND	ND
4,4'-DDE	5	ND	ND
4,4'-DDT	38.3	ND	ND

RA-36 Depth (ft bffs) VOCs (µg/kg) Tetrachloroethene SVOCs (µg/kg) Benzo[b]fluoranthene Indeno[1,2,3-cd]pyrene **Metals** (mg/kg) Chromium, Hexavalent Lead

Mercury

PCBs (µg/kg)

2/26/13	2/26/13	2/26/13	5/13/13
10-12	23-25	29-30	34-35
ND	ND	196 JV	NE
NE	NE	2910	NE
NE	NE	NA	NA
NE	NE	NA	NA
NE	NE	NA	NA
5.7 JV	ND	NA	NA
7.8	ND	NA	NA
181	ND	NA	NA
	2/26/13 10-12 ND NE NE NE 5.7 JV 7.8 181	2/26/13 2/26/13 10-12 23-25 ND ND NE NE NE NE NE NE NE NE S.7 JV ND 7.8 ND 181 ND	2/26/13 2/26/13 2/26/13 10-12 23-25 29-30 ND ND 196 JV NE NE 2910 NE NE NA NE NE NA NE NE NA S.7 JV ND NA 17.8 ND NA

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	<u> </u>	
		_

RA-35	8/5/13	8/5/13
Depth (ft bffs)	4 - 6	6 - 8
VOCs (µg/kg)	NE	NE
SVOCs (µg/kg)	NE	NE
Metals (mg/kg)		
Chromium	NE	33.4
PCBs (µg/kg)	NE	NE
Pesticides (µg/kg)		
4,4'-DDT	ND	25.2

RA-5	2/26/13
Depth (ft bffs) (See Note 3)	7-9
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	NE
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

RA-21	3/15/13
Depth (ft bffs)	10-12
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	NE
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

BCS-1/ HA-1B	1/13/14
Depth (ft bffs)	20-30
VOCs (µg/kg)	NA
SVOCs (µg/kg)	NE
Metals (mg/kg)	NE
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NA

B-1W3

VOCs (µg/kg)

Metals (mg/kg)

PCBs (µg/kg)

Pesticides (µg/kg)

SVOCs (µg/kg)

Depth (ft bffs) (See Note 4)

Chromium, Hexavalent

	/		
2/14/14	SCS-2A (B-1W2)	2/12/14	BDS-1 (B-2)
25-30	Depth (ft bffs)	25-30	Depth (ft bffs)
NA	VOCs (µg/kg)	NE	VOCs (µg/kg)
NE	SVOCs (µg/kg)	NE	SVOCs (µg/kg)
	Metals (mg/kg)		Metals (mg/kg)
7.3	Chromium, Hexavalent	9.4	PCBs (µg/kg)
NE	PCBs (µg/kg)	NE	Pesticides (µg/kg)
NA	Pesticides (µg/kg)	NA	

L	EG	ΕN	D

LEOLIND	
	PROPERTY LINE
BCS-1	LOCATION AND DESIGNATION OF BOTTOM DOCUMENTATION SAMPLE
RA-25	LOCATION AND DESIGNATION OF SIDEWALL DOCUMENTATION SAMPLE
SDS-1 (A-2)	LOCATION AND DESIGNATION OF BOTTOM AND SIDEWALL DOCUMENTATION SAMPLE
<u> </u>	SECANT PILE WALL
	ALPHA-NUMERIC GRID LINE

REMEDIATION LEGEND

LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO -19 FEET ELEVATION (SEE NOTE 1)
LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +6 FEET ELEVATION (SEE NOTE 1)
 ACTUAL LIMITS OF EXCAVATION AND BACKFILL TO -19 FEET ELEVATION IN HOT SPOTS 1 AND 2 (SEE NOTE 1)
LIMITS OF EXCAVATION AND BACKFILL REQUIRED FOR REMEDIATION PURPOSES TO +1 FEET ELEVATION
LIMITS OF SITE COVER SYSTEM AND EXCAVATION (SEE REMEDIATION NOTES 1 AND 2)

NOTES

- 1. THE ACTUAL LIMITS OF EXCAVATION IN HOT SPOTS 1 AND 2 EXTENDED BEYOND THE LIMITS REQUIRED FOR REMEDIATION TO ACCOMMODATE THE CONSTRUCTION OF THE BUILDING FOUNDATION.
- 2. THE ENTIRE PROPERTY (INCLUDING THE HOT SPOT AREAS) WAS EXCAVATED AND COVERED BY THE SITE COVER SYSTEM COMPRISED OF BUILDING FLOOR SLAB/FOUNDATION, WATERPROOFING, TWO TO THREE INCH MUD SLAB AND SIX INCH GRAVEL OR RECYCLED AGGREGATE BASE, AND, IN HOT SPOTS 1 AND 2, THE CEMENT-BENTONITE BACKFILL.
- 3. SAMPLES RA-5 AND RA-22 WERE COLLECTED IN THE FORMER LOADING DOCKS, SO THE FLOOR SLAB ELEVATION WAS APPROXIMATELY 3 FEET LOWER THAN THE REMAINDER OF THE FLOOR SLAB. RELATIVE TO THE OTHER SAMPLES, THE ACTUAL DEPTH BELOW FORMER FLOOR SLAB WOULD BE 10-12 FEET. 4. SDS-2 WAS ORIGINALLY INTENDED TO REPRESENT THE REMAINING SOIL QUALITY IN A WEDGE OF SOIL TO REMAIN IN THAT AREA. HOWEVER, ALL SOIL WAS REMOVED TO A DEPTH OF 12 FEET BELOW
- FORMER FLOOR SLAB IN THAT ARE; THEREFORE, THIS SAMPLE REPRESENTS SOIL QUALITY AT THE BOTTOM OF THE EXCAVATION. 5. EXCAVATION FOR BUILDING CONSTRUCTION EXTENDED THREE TO FIVE FEET BEYOND THE WESTERN,
- EASTERN AND SOUTHERN PROPERTY LINES. EXCAVATION ACROSS THE SITE WAS TO A MINIMUM OF +4 FEET ELEVATION
- 6. ALL ELEVATIONS ARE REFERENCED TO THE BROOKLYN BOROUGH TOPOGRAPHIC/HIGHWAY DATUM. 7. THE FORMER FLOOR SLAB WAS LOCATED AT +16 FEET ELEVATION.
- 8. BASEMAP PREPARED BASED ON SURVEY DATA COLLECTED BY ANGLE OF ATTACK LAND SURVEYORS, LLC ON JUNE 1, 2013. LOCATIONS OF DOCUMENTATION SAMPLES SURVEYED BY MONTROSE SURVEYING CO. LLP.
- 9. ALPHA-NUMERIC GRID LINES ARE SPACED EVERY 50 FEET.
- 10. RAWP DECEMBER 9, 2013 REMEDIAL ACTION WORK PLAN.
- 11. PROTECTION OF GROUNDWATER STANDARDS WERE ONLY CONSIDERED FOR VOLATILE ORGANIC COMPOUNDS.



NA —	NOT ANALYZED FOR BY LABORATORY
FT BFFS -	FEET BELOW FORMER FLOOR SLAB
PI —	THE RPD BETWEEN THE RESULTS FOR
	THE TWO COLUMNS EXCEEDS THE

romium

PCBs (Concentrations in µg/kg)

Pesticides (Concentrations in µg/kg)

opper

Mercury

Total PCBs

4,4'-DDD

4,4'-DDE

4.4'-DDT

.ead

Nickel

30

50

63

0.18

109

100

3.3

3.3

3.3

30

270

0.81

10000

(µg/kg) (µg/kg) (µg/kg)

1000

(µg/kg) (µg/kg) (µg/kg)

13000

8900

1720

450

0.73

130

2480

3200

14000

17000

136000

METHOD-SPECIFIED CRITERIA. THE LOWER VALUE FOR THE TWO

COLUMNS HAS BEEN REPORTED

V – QUALIFIER ADDED BY VALIDATOR

- RESULTS SHOWN IN BLACK TYPE EXCEED PART 375 UNRESTRICTED USE CRITERIA

- RESULTS SHOWN IN BLUE TYPE EXCEED PART 375 PROTECTION OF GROUNDWATER CRITERIA

- RESULTS SHOWN IN RED TYPE EXCEED PART 375 RESTRICTED RESIDENTIAL CRITERIA - RESULTS WITH YELLOW BACKGROUND EXCEED MORE THAN ONE SET OF CRITERIA

	2/13/13
fs)	11-13
/kg)	NE
g/kg)	NE
J/kg)	
ı	42.3
<g)< td=""><td>NE</td></g)<>	NE
(µg/kg)	NE

SDS-2	1/10/14
Depth (ft bffs) (See Note 4)	10-14
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	
Chromium	31
Lead	71
Mercury	0.38
PCBs (µg/kg)	NE
Pesticides (µg/kg)	
4,4'-DDD	31.4
4,4'-DDE	12.9
4,4'-DDT	15.2

BDS-2	1/1:	3/14	1/13/14
Depth (ft bffs)	10	-14	10-14 DUP
VOCs (µg/kg)	N	E	NE
SVOCs (µg/kg)	N	E	NE
Metals (mg/kg)			
Arsenic	2	21	NE
Chromium	3	9	37
Copper	5	51	NE
Mercury	0.	44	0.57
PCBs (µg/kg)			
Total PCBs	10	5.3	129.3
Pesticides (µg/kg)			
4,4'-DDD	24	1.8	22.9
4,4'-DDE	8.	31	6.32
4,4'-DDT	9.0	2 PI	10.6 PI

RA-14	2/12/13
Depth (ft bffs)	11-13
VOCs (µg/kg)	NE
SVOCs (µg/kg)	
Benzo[a]anthracene	2970 JV
Benzo[a]pyrene	2620 JV
Benzo[b]fluoranthene	2140
Benzo[k]fluoranthene	1930 JV
Chrysene	2830 JV
Dibenzo[a,h]anthracene	632
Indeno[1,2,3-cd]pyrene	1370
Metals (mg/kg)	
Chromium, Hexavalent	3.6
Chromium	78.2
PCBs (µg/kg)	NE
Pesticides (µg/kg)	
4,4'-DDT	14.2

RA-17	2/12/13	2/12/13
Depth (ft bffs)	10-12	10-12 DUP
VOCs (µg/kg)	NE	NE
SVOCs (µg/kg)	NE	NE
Metals (mg/kg)		
Chromium	37 JV	NE
PCBs (µg/kg)	NE	NE
Pesticides (µg/kg)	NE	NE

-	
RA-13	2/14/13
Depth (ft bffs)	11-13
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	
Chromium	49.7
Nickel	33.8
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

RA-18	2/15/13
Depth (ft bffs)	11-13
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	NE
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

BDS-3	1/10/ [.]
Depth (ft bffs)	10-1
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	NE
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

2/13/13
11-13
NE
NE
46.6
31.7
116
NE
NE

RA-23	2/13/13
Depth (ft bffs)	11-13
VOCs (µg/kg)	NE
SVOCs (µg/kg)	NE
Metals (mg/kg)	
Chromium	50
Nickel	33.9
PCBs (µg/kg)	NE
Pesticides (µg/kg)	NE

DOCUMENTATION SOIL SAMPLES

PLATE

6

149 KENT AVENUE BROOKLYN, NEW YORK				
ared For:				
KENT & WIEITI OWNERS EEC				
	Compiled by: D.T.B.	Date: 14JUL15		
	Prepared by: G.M.	Scale: AS SHOWN		

ROUX ASSOCIATES, INC. Project Mgr: J.D. Project: 2158.0001Y004

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Environmental Consulting & Management