Courtlandt Crescent

BRONX, NEW YORK

Revised Site Management Plan

NYSDEC Site Number: C203058

Prepared for:

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Revisions to Final Approved Site Management Plan:

Revision #	Submittal Date, Prepared By	Summary of Revision	DEC Approval Date
1	April 2016 prepared by AKRF Engineering, P.C.	• Reduction of groundwater sampling frequency to annual. • Conversion of SSDS to passive venting system.	May 2016

MAY 2016

2012 CERTIFICATION

I, Stephen J. Osmundsen, 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).

Stephen J. Osmundsen

11/30/2012
Date

2016 CERTIFICATION

I, Michelle Lapin, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Revised Site Management Plan, dated May 2016, was prepared to update the original Site Management Plan, dated November 2012, in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

NYS Professional Engineer # 073934-1	Date	Signature
	5-27-16	

TABLE OF CONTENTS

TABLE OF CONTENTS iv
1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM 2
1.1 INTRODUCTION 2
1.2 SITE BACKGROUND 3
1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS 4
1.4 SUMMARY OF REMEDIAL ACTIONS 7
2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN 12
2.1 INTRODUCTION 12
2.2 ENGINEERING CONTROLS 12
2.3 INSTITUTIONAL CONTROLS 15
2.4 INSPECTIONS AND NOTIFICATIONS 16
2.5 CONTINGENCY PLAN 17
3.0 SITE MONITORING PLAN 23
3.1 INTRODUCTION 23
3.2 COMPOSITE COVER SYSTEM MONITORING 24
3.3 MEDIA MONITORING PROGRAM 25
3.4 SITE-WIDE INSPECTION 26
3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL 27
3.6 MONITORING REPORTING REQUIREMENTS 28
4.0 OPERATION AND MAINTENANCE PLAN 29
4.1 INTRODUCTION 29
4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE 29
4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING 31
4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS 33
5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS 34
5.1 SITE INSPECTIONS 34
5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS 34
5.3 PERIODIC REVIEW REPORT 35
5.4 CORRECTIVE MEASURES PLAN 36

LIST OF TABLES

Table 1	Track 4 Site-Specific Soil Cleanup Objectives
Table 2	Emergency Contact Telephone Numbers
Table 3	Monitoring/Inspection Schedule
Table 4	Schedule of Monitoring/Inspection Reports
Table 5	Validated Analytical Results of Volatile Organic Compounds in Soil Endpoint Samples
Table 6	Validated Analytical Results of Semi-Volatile Organic Compounds in Soil Endpoint Samples
Table 7	Validated Analytical Results of Pesticides in Soil Endpoint Samples
Table 8	Validated Analytical Results of PCBs in Soil Endpoint Samples
Table 9	Validated Analytical Results of Metals in Soil Endpoint Samples
Table 10	SCOs for Import of Soil
Table 11a	Summary of Construction and Demolition Debris
Table 11b	Summary of Waste Disposal Receipts and Manifests

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Geologic Section
Figure 4	Groundwater Contour Map – August 22, 2012
Figure 5	RI Soil Concentrations Above Part 375 UUSCOs
Figure 6	RI Groundwater Concentrations Above NYSDEC TOGS
Figure 7	RI Soil Vapor Concentrations in Air
Figure 8	Extent of UST, Boiler, and Hydraulic Lift Excavations
Figure 9	Vapor Barrier and SSDS As-Built
Figure 10	ISCO Injection Locations
Figure 11	Composite Cover System As-Built
Figure 11a	As-Built Cross Section of Composite Cover System
Figure 11b	As-Built Cross Section of Composite Cover System
Figure 12	Extent of Soil Excavation, Endpoint Soil Sample Locations and Soil Concentrations above Track 1 SCOs
Figure 13	Truck Routes
Figure 14	Elevations of Residual Management Zone
Figure 15	Survey of Final Excavation Depths

LIST OF APPENDICES

Appendix A Excavation Work Plan

Appendix B Environmental Easement

Appendix C Metes and Bounds

Appendix D Vapor Barrier Specifications, Revised SSDS As-Built Drawings and Specifications

Appendix E Revised Generic Health and Safety Plan (HASP)

Appendix F Community Air Monitoring Plan (CAMP)

Appendix G Monitoring Well Construction Logs

Appendix H Quality Assurance Project Plan (QAPP)

Appendix I Groundwater Sampling Log

Appendix J Revised Inspection Forms

REVISED SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at Courtlandt Crescent (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# C205058-05-11 Site # C203058, which was executed on May 2011.

1.1.1 General

Courtlandt Crescent Associates, L.P. entered into a BCA with the NYSDEC to remediate a 0.91-acre property located in the Bronx, New York. This BCA required the Remedial Party, Courtlandt Crescent Associates, L.P., to investigate and remediate contaminated media at the Site. A figure showing the Site location and boundaries of this 0.91-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 in Appendix B; the boundaries are illustrated on Plate 1 (rear pocket).

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this Site, which is hereafter referred to as "remaining contamination." The Site Management Plan (SMP) was originally prepared in November 2012 and revised in May 2016 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.

The original SMP was prepared by Stephen J. Osmundsen, P.E., on behalf of Courtlandt Crescent Associates, L.P., 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. May 2016 modifications to the SMP were prepared by AKRF Engineering, P.C. (AKRF). This Revised 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 Office of the City Register, will require compliance with this Revised 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 Revised SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the Site. This

Revised SMP was approved by the NYSDEC in May 2016, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This Revised SMP may only be revised with the approval of the NYSDEC.

This Revised 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 (PRRs); and (5) defining criteria for termination of treatment system operations.

To address these needs, this Revised 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 PRRs for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This Revised SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the Revised SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC); and
- Failure to comply with this Revised SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # C205058-05-11; Site #C203058) 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 Revised SMP, and append these notices to the Revised SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in New York City, County of the Bronx, New York and is identified as Block 2408, Lots 35, 41, 43, 44, 45, 46, 49, 51, 52, and 53 on the Bronx County Tax Map. The Site is an approximately 0.91-acre area bounded by East 163rd Street to the north, East 162nd Street to the south, Melrose Avenue to the east, and Courtlandt Avenue to the west (see Figure 2). The boundaries of the Site are more fully described in Appendix C – Metes and Bounds.

1.2.2 Site History

The Site was developed with a filling station from 1951 through 1969 (Lots 49 and 51); an auto repair shop from 1965 through 1984 and from 1991 through 1993; machine shop in 1951 (Lot 35); an auto junkyard from 1984 through 1988 (Lot 41); an iron works from 1993 through 2007 (Lot 45); a boiler repair shop from 2000 to 2005 (Lot 53); a brass fabricator shop in 2000 (Lot 35); a universal machinery manufacturing (Lot 41); a waste paper company and cosmetic company in 1927 (Lot 41); and a saw works in 1965 through 1971 (Lot 46).

1.2.3 Geologic Conditions

According to the Surficial Geologic Map of New York, the subsurface soil is composed of poorly sorted glacial till with variable thickness of up to approximately 1 to 50 meters. According to the Geologic Map of New York Lower Hudson Sheet, the underlying bedrock is composed of Inwood Marble from the Cambrian era. A geologic section is shown in Figure 3.

The Site elevation ranges from 18 to 25 feet above mean sea level based on the Borough of the Bronx Datum. The on-site topography is relatively level with a gradual slope to the northeast along Courtlandt Avenue. The Site has no natural or artificial surface water bodies or impoundments. Water from rain events runs off into street storm drains. The uppermost groundwater surface occurs at a depth ranging from 13 to 14 feet below sidewalk grade within the unconsolidated materials. The regional direction of groundwater flow is believed to be southerly towards the confluence of the Harlem and East Rivers. Based upon site-specific groundwater elevation data, groundwater flows in a northeasterly direction under the Site, most likely due to influences from a gradual elevation change. Groundwater in this area of the Bronx is not used for potable supply purposes, and no potable groundwater resources appear to be threatened by local groundwater contamination. A groundwater flow figure is shown in Figure 4.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (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:

1. CA RICH. Remedial Investigation Report, February 2011.
2. CA RICH. Supplemental Investigation and Design Report, September 2011.

Generally, the RI and Supplemental Investigation determined that known contaminants including chlorinated solvents, semi-volatile organic compounds (SVOCs), metals, pesticides and other volatile organic compounds (VOCs) are present in the subsurface. These contaminants are impacting soil, groundwater, and soil vapor. The source of the VOCs, SVOCs, pesticides, and metals detected in soil and groundwater at the Site are generally related to the historic use of the property as a gasoline service station, an auto repair shop, a machine shop, an auto junkyard, an iron works, a boiler repair shop, a brass fabricator shop, a universal machinery manufacturing facility, a waste paper company, a cosmetic company, and a saw works. Based on the degree of soil and groundwater contamination, the former gasoline service station, auto repair shop, and auto junkyard have been identified as a primary source area for the VOCs and SVOCs. The machine shop, an iron works, a boiler repair shop, a brass fabricator shop, and machinery manufacturer most likely contributed to the detection of SVOCs and metals. Pesticides, VOCs,

and SVOCs can also be attributed to the Site being used as a waste paper company, a cosmetic company, and a saw works.

Below is a summary of Site conditions when the RI was performed in 2011:

Soil

- No unusual odors or Photoionization Detector (PID) readings above 0 ppm were noted in any of the soil encountered at the Site except for two borings located on the east side of a previous gasoline service station. The soil located just below the water table at 14 feet below grade contained a slight petroleum odor and exhibited PID readings of 385 parts per million (ppm) and 341 ppm in the borings, respectively.
- Fifty-four soil samples were analyzed from multiple depths across the Site. No poly-chlorinated biphenyls (PCBs) were detected above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs). One VOC, acetone, was detected above the SCOs in the sample collected from PD-SB-2 (4'-6') at a concentration of 100 micrograms per kilogram (µg/kg). Eight SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, chromium, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) commonly referred to as polycyclic aromatic hydrocarbons or "PAHs", seven heavy metals (barium, copper, lead, zinc, and mercury), and five pesticides (4,4'-DDT, dieldrin, 4,4'-DDD, 4,4,'-DDE, alpha-chlordane) were detected at various depths above 6 NYCRR Part 375 Unrestricted Use SCOs in soil samples throughout the Site. Concentrations of benzo(a)anthracene ranged from 1,480 to 7,520 µg/kg; benzo(a)pyrene ranged from 1,210 to 6,020 µg/kg; benzo(b)fluoranthene ranged from 1,290 to 5,820 µg/kg; benzo(k)fluoranthene ranged from 808 to 4,170 µg/kg; chrysene ranged from 1,170 to 7,310 µg/kg; dibenzo(a,h)anthracene ranged from 447 to 2,280 µg/kg; indeno(1,2,3-cd)pyrene ranged from 588 to 4,180 µg/kg; barium ranged from 373 to 2,640 mg/kg; copper ranged from 55.5 to 250 milligrams per kilogram (mg/kg); lead ranged from 73.6 to 43,800 mg/kg; mercury ranged from 0.22 to 5.2 mg/kg; zinc ranged from 115 to 1,380 mg/kg; 4,4'-DDT ranged from 4.7 to 1,980 µg/kg; dieldrin ranged from 5.1 to 122 µg/kg; 4,4'-DDD ranged from 12.5 to 144 µg/kg; and, 4,4,'-DDE ranged from 4.0 to 374 µg/kg. Alpha-chlordane was detected at 150 µg/kg and chromium was detected at 30.3 mg/kg.

Soil sample locations and the analytical results are illustrated on Figure 5.

Site-Related Groundwater

- During the RI in February 2011, two petroleum-related compounds, benzene and methyl tert butyl ether (MTBE), were detected above NYSDEC TOGS groundwater standards or guidance values in the groundwater samples collected from MW-2S and 2D in addition to GWSB-23D. Also, the chlorinated solvents, chloroform and 111-trichloroethane, were detected above NYSDEC TOGS in the samples collected from MW-3S, MW-4S, GWSB-23S, as well as the associated duplicate sample for MW-3S. Three dissolved metals: magnesium, manganese, and sodium, were detected above NYSDEC TOGS groundwater standards in the samples collected from MW-1S, 1D, 2S, 2D, 3D, 4D, SB-6GW (14'-18'), SBGW-9S, SBGW-9D, SBGW-11S, SBGW-12S, SBGW-12D, GWSB-16S, GWSB-16D, GWSB-21S, GWSW-21D, GWSB-23S, and GWSB-23D. One additional dissolved metal, iron, was detected above NYSDEC TOGS groundwater standards in the sample collected from GWSB-21S.
- During the Supplemental Investigation, seven groundwater samples were collected and analyzed from one boring and the three existing monitoring well clusters on the Site. The

detections of acetone, benzene, ethylbenzene, isopropylbenzene, naphthalene, toluene, m,p-xylene, o-xylene and total xylenes, and the dissolved concentrations of magnesium, manganese, and sodium in the sample collected from PD-SB-4GW; methyl tertiary butyl ether (MTBE) in the samples collected from MW-1S, MW-1D, MW-2S, and MW-2D; and, acetone and benzene in the sample collected from MW-2S were above NYSDEC TOGS groundwater standards.

The detections of acetone, benzene, and MTBE above NYSDEC TOGS groundwater standards ranged from 74.5 to 127 micrograms per liter (µg/L), 2.1 to 694 µg/l, and 10.9 to 17.5 µg/l, respectfully. The maximum detection of chloroform was 16.1 µg/l; ethylbenzene was 33.2 µg/l; iron was 818 µg/l; isopropylbenzene was 21.6 µg/l; naphthalene was 11 µg/l; 1,1,1-trichloroethane was 9.1 µg/l; toluene was 53.6 µg/l; m,p-xylene was 93.6 µg/l; o-xylene was 5.4 µg/l; and total xylenes was 99 µg/l. The detections of magnesium, manganese, and sodium above NYSDEC TOGS groundwater standards ranged from 40,700 to 67,300 µg/l; manganese ranged from 430 to 3,760 µg/l; and sodium ranged from 54,100 to 131,000 µg/l.

Groundwater sample locations and the analytical results are illustrated on Figure 6.

Site-Related Soil Vapor Intrusion

- During the RI in February 2011, two temporary soil vapor points and one sub-slab soil vapor point were installed at the Site. Samples collected from each of the soil vapor points indicated the presence of petroleum related compounds as well as solvents in the soil vapor. Compounds detected include acetone, heptane, hexane, propylene, tetrachloroethylene, toluene, m,p-xylenes, and total xylenes. When the analytical results from the sub-slab sample in the building on Lot 45 were compared to the indoor air/outdoor ambient air results using Tables 1 and 2 from the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (Ref. 3), no further action was determined with regard to vapor intrusion into the current structure.
- During the Supplemental Investigation, soil vapor samples were collected and analyzed from three locations on Lot 35 (PD-SV-1 through PD-SV-3). The VOCs acetone, benzene, carbon disulfide, chloroform, cyclohexane, 1,1-dichloroethane, dichlorodifluoromethane, ethanol, ethylbenzene, 4-ethyltoluene, heptane, hexane, isopropyl alcohol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, propylene, styrene, 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, tertiary butyl alcohol, tetrachloroethylene, tetrahydrofuran, toluene, trichloroethylene, trichlorofluoromethane, and xylenes were detected in the soil vapor. Concentrations ranged from 1.7 microgram per cubic meter (µg/m^3) of trichloroethylene at PD-SV-3 to 3,580 µg/m^3 of 1,1,-dichloroethane at PD-SV-2.

Soil vapor sample locations and the analytical results are illustrated on Figure 7.

Underground Storage Tanks

In addition to the fill ports and vents identified during the Phase I ESA conducted in 2009, an on-site geophysical investigation was conducted as part of the RI on Lots: 45, 46, 49, 51, and 52 and the sidewalk area adjacent to Lot 35. The geophysical investigation identified one suspect Underground Storage Tank (UST), a fill port, and two suspect hydraulic lifts on Lot 49, and underground utilities throughout the Site. Visual observations also indicated a partially buried UST was located on the northwestern portion of the Site.

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site was remediated in accordance with the NYSDEC-approved Remedial Action Work Plan dated June 2011 and Supplemental Investigation and Design Report dated September 2011.

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

1. Excavation of soil/fill exceeding Site Specific Soil Cleanup Objectives (SSSCOs), plus additional soil as needed to install the foundation for the new buildings and parking garage proposed for the Site. The SSSCOs for the Site are listed in Table 1. The limits of the soil excavation are shown on Figure 12.
2. Removal of all USTs, fill ports, vents, and hydraulic lifts and any associated grossly contaminated soil in accordance with applicable regulations.
3. Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of all excavated soil during any intrusive Site work.
4. Appropriate off-site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal. A waste disposal facility was selected based on the data that was collected during the RI as well as from additional soil waste characterization samples that were analyzed as needed to obtain an approval for soil disposal. Due to high lead and mercury concentrations in two areas of the Site, additional analysis for Toxicity Characteristic Leaching Protocol (TCLP) for both of those metals was performed to determine if the soil is considered hazardous in those two locations.
5. Collection and analysis of end-point samples in accordance with DER-10 to evaluate the performance of the remedy with respect to attainment of SSSCOs.
6. Injection of Regenox™ and ORC® In-Situ Chemical Oxidation (ISCO) into the shallow groundwater and soil in the "smear zone" on a portion of Lots 41 and 35.
7. Import of all materials to be used for fill were in compliance with (1) the soil cleanup objectives outlined in 6 NYCRR Part 375-6.7(d); and (2) all Federal, State and local rules and regulations for handling and transport of material.
8. Construction of an engineered composite cover consisting of: (1) a minimum two-foot clean fill buffer with demarcation barrier in all landscaped and non-covered areas; and (2) concrete building foundations, sidewalks/pathways, asphalt roadways, and a ventilated parking garage to prevent human exposure to residual contaminated soil remaining under the Site.
9. A vapor barrier and a sub-slab depressurization system (SSDS) were incorporated into the foundation of the two buildings as illustrated on Figure 9. The originally active SSDS was modified into a passive venting system in November 2015. The vapor barrier specifications, and passive venting system as-built drawings and specifications are enclosed as Appendix D.
10. Collection and analysis of post-remedial groundwater samples to evaluate the performance of the remedy. Post-remedial groundwater monitoring well locations are illustrated on Figure 4.
11. Recording of an Environmental Easement, including ICs, to prevent future exposure to any residual contamination remaining at the Site. A copy of the Environmental Easement is included as Appendix B.
12. 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 August 2012.

1.4.1 Removal of Contaminated Materials from the Site

The removal of materials from the Site included: 1) the demolition of existing structures and associated materials such as brick and concrete; 2) the excavation and removal of subsurface soils, and construction and demolition debris; and, 3) removal of seven USTs, one AST, one boiler, two hydraulic lifts, and associated tank liquid and sludge. The tank removals are illustrated on Figure 8 while the full extent of excavation is illustrated on Figure 12.

1.4.1.1 Soil Cleanup Objectives

The remedy selected for this Site included a Track 4 cleanup with SSSCOs and implementation of certain IC/ECs. All final excavation end-point soil samples met or exceeded the Track 4 SSSCOs. A list of the SSSCOs for the primary contaminants of concern (COCs) and applicable land use for this Site is provided in Table 1.

1.4.1.2 Removal Quantities

During the remedial action, a total of 22,646.63 tons of soil were removed from the Site. A total of 15,430.99 tons of soil were disposed of at the Clean Earth of Carteret facility in Carteret, NJ; 1,215.14 tons of soil/fill were disposed of at the Clean Earth of Philadelphia facility in Philadelphia, PA; 5,746.87 tons of soil were disposed of at the Middlesex Logistics Center, in Edison, NJ (ILR); 253.63 tons of soil were disposed of at the Clean Earth of North Jersey facility, in South Kearney, NJ; and, 1.13 tons of soil were disposed of at the Environmental Quality Company Detroit, Inc. facility in Detroit, MI. The volume of construction and demolition debris removed from the Site during demolition/excavation was 461.11 cubic yards. The construction and demolition debris was disposed of at Cardella Waste of North Bergen, NJ and City Recycling Corp. of Brooklyn, NY. In addition, seven USTs, one boiler, one AST, and two hydraulic lifts were removed from the Site and disposed of as scrap metal at Gershow Recycling. 2,549-gallons of a petroleum product/water mixture were removed from the USTs that contained liquid and disposed of at the FCC Environ facility of Bayonne, NJ. 610 gallons of a petroleum product/water mixture was removed from the AST and disposed of at the Clean Water facility of Staten Island, NY. Two 55-gallon drums (600 pounds) of tank sludge were disposed of at R.G.M. Earth Care facility in Deer Park, NY. Tables 11a and 11b contain a summary of the receipts and manifests.

1.4.1.3 Location of Materials Removed

To comply with the Track 4 SSSCOs, the excavation of soil site-wide to 5, 6, 10, or 12 feet below grade was required. A figure showing areas where excavation was performed as well as the final excavation depths is shown in Figure 12. Tables 5 through 9 include the analytical results from the endpoint soil sampling.

On June 2, 2011, during demolition activities by the New York City Housing Preservation Department (NYCHPD), one 2,000-gallon aboveground storage tank was removed by Gateway Demolition under PBS number 2-611549. The concrete underneath the tank was inspected. As no staining was observed, no endpoint samples were collected.

During excavation activities, seven USTs, two hydraulic lifts, and one boiler were encountered on the Site. The two hydraulic lifts and two 550-gallon USTs were located on Lot 49, the former gasoline filling station. The 2,100-gallon UST was located on Lot 35 within the footprint of the former building. One 550-gallon underground storage tank (UST) containing gasoline, one crushed 275-gallon UST, one 275-UST containing three inches of waste oil, and one "lube cube" (200 gallons) containing minor amounts of waste oil were encountered on Lot 46, the former auto repair shop. The boiler was located on Lot 41, the former junkyard. The seven USTs, associated tank liquid and sludge, and associated fill ports and vent pipes (if any) were removed during excavation activities in July and August 2011. The locations of the former USTs, lifts, and boiler as well as where excavation was conducted are illustrated on Figures 8 and 12.

1.4.2 Site-Related Treatment Systems

1.4.2.1 In-Situ Chemical Oxidation

After the final excavation depth was reached, injection of Regenox™ and ORC® Advanced was conducted in select areas of Lots 41 and 35 to treat the residual VOCs detected in the groundwater above NYSDEC TOGS. Regenox™ is an ISCO process using a solid oxidant complex (sodium percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). ORC® is primarily composed of magnesium peroxide. ORC® acts as an electron acceptor for the existing in-situ bacteria, thereby facilitating metabolism of residual fuel-related organic compounds. From September 14 to September 30, 2011, Regenox™ and ORC® Advanced (ISCO treatment) were injected into the shallow groundwater and soil in the smear zone. The locations of the injections are illustrated on Figure 10. From September 14 through 21, 2011 ISCO injection was performed at injection points IP-1 through IP-11 from a depth of 24 feet up to 14 feet below grade; at a dosage rate of 45 pounds of ORC® Advanced and 240 pounds of Regenox™ (mixed with water). From September 22 through 30, 2011, ISCO injection was performed at injection points IP-12 through IP-36 from a depth of 25 feet up to 16 feet below surface grade; at a dosage rate of 184-gallons of Regenox™/ORC® Advanced per point and a water/chemical ratio of one to one. These dosage rates are consistent with those approved in the remedial design. Prior to completion of the injections, approximately 3,000-gallons of groundwater were extracted from MW-5 and MW-6 using a whale pump and disposed of through the on-site dewatering treatment system into the New York City Sewer System under DEP #C-4970.

1.4.2.2 Passive Venting System[1]

To prevent infiltration of vapor from residual VOCs dissolved in groundwater into the new buildings' interior, installation of an SSDS was originally approved by NYSDEC, installed as an IC/EC, and included in the construction of the new buildings' foundation. Based on post-remediation data collected through April 2015, AKRF Engineering, P.C. petitioned NYSDEC/NYSDOH to convert the SSDS into a passive venting system. In July 2015, permission to convert the SSDS was granted. In November 2015, the SSDS was modified into a passive venting system by removing the three suction fans, but maintaining all remaining system components to maintain a preferred pathway for sub-slab vapors. The passive venting system consists of perforated pipe in horizontal

[1] Section 1.4.2.2 modified in May 2016.

trenches. The horizontal pipes are connected to vertical risers that are connected to six-inch headers that extend above the roof of the building. All pipe penetrations through the vapor barrier were sealed in accordance with the manufacturer's recommendations.

The passive venting system layout, trench, vent and modified roof detail, the as-built drawings and specifications for the passive venting system, and NYSDEC's July 2015 modification approval letter are included in Appendix D.

1.4.3 Remaining Contamination

To comply with the SSSCOs, soil was excavated down to depths required for the foundations of the buildings and parking garage on the Site. After completion of soil excavation activities, the top of the residual contaminated zone was surveyed. The elevation of the residual contaminated zone is illustrated on Figure 14. In addition, the elevation of the final excavation depths is illustrated on Figure 15. The residual contamination zone beneath the building's foundation was covered with a physical demarcation barrier/layer consisting of a Stego^{TM} 15-mil vapor barrier. This demarcation layer constitutes the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in this Revised SMP. Included within this zone are the utilities for the new building as well as the piping and gravel that were installed as part of the passive venting system. Exposure to residual contaminated soils will be prevented by the composite cover system, which includes the vapor barrier. This composite cover system is comprised of (1) a two-foot clean fill buffer in all landscaped areas. The two-foot thick cover consists of clean soil/sand underlain by concrete to demarcate the cover soil from the residual soil. Clean soil meets the soil cleanup objectives outlined in 6 NYCRR Part 375-6.7(d); and, (2) impermeable areas (concrete building foundations (slab/walls) and sidewalks/pathways) covered by concrete to prevent human exposure to residual contaminated soil remaining under the Site. The vapor barrier and the composite cover system are shown on Figure 11.

Soil excavation endpoint samples were collected from the final excavation depths. The analytical results from the samples illustrated that the remaining contamination consists of the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, the pesticides 4,4'-DDE, 4,4'-DDT, Dieldrin, and 4,4'-DDD, and the metals barium, chromium, copper, lead, and mercury in limited areas throughout the Site at levels above Track 1 UUSCOs. It is important to note that samples EP-22, EP-23, EP-25, and EP-37 were inadvertently collected outside the BCP Site and therefore do not represent on-site conditions.

Tables 5 through 9 and Figure 12 summarize the results of all soil samples remaining at the Site that exceed Track 1 (unrestricted) SCOs after completion of the Remedial Action Tables 5 through 9 also summarize the results of all soil samples that meet the SCOs for unrestricted use of the Site. It is noted that the metals data summarized on Table 9 includes samples EP-22, EP-23, EP-25, EP-37 and EP-42, which contain concentrations of select metals above the SSSCOs. Samples EP-22, EP-23, EP-25, and EP-37 were inadvertently collected outside the BCP Site and therefore no further action was warranted. In addition, the initial endpoint sample from location EP-42 was collected at 10.3 feet below grade. Based on the results from the 10.3 foot below grade sample additional excavation activities were conducted and a second deeper sample identified as EP-42RE was collected from 13 feet below grade. The results for sample EP-42RE

reflect the final excavation depth and indicate that the concentration of barium was reduced from 689 mg/kg to 146 mg/kg, which is below the Track 1 SCO.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil and groundwater/soil vapor exists 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 Revised 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 Composite Cover System

Exposure to remaining contamination in soil at the Site is prevented by a composite cover system placed over the Site. This cover system is comprised of a minimum of 24 inches of clean soil with demarcation barrier in all landscaped and non-covered areas, asphalt roadways, concrete-covered sidewalks/pathways, concrete building slabs/walls, and a ventilated parking garage underlain by a vapor barrier. The Excavation Work Plan that appears in Appendix A outlines the procedures required to be implemented in the event the 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 4 of this Revised SMP.

2.2.1.2 In-Situ Chemical Oxidation[2]

Based upon the detection and distribution of groundwater contaminants, groundwater treatment including in-situ chemical oxidation was conducted on Lots 41 and 35. After the final excavation depth was reached, injection of Regenox™ and ORC® Advanced was conducted in select areas of Lots 41 and 35 to treat the residual VOCs detected in the groundwater above NYSDEC TOGS. Regenox™ is an ISCO process using a solid oxidant complex (sodium percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). ORC® is primarily composed of magnesium peroxide. ORC® acts as an electron acceptor for the existing in-situ bacteria, thereby facilitating metabolism of residual fuel-related organic compounds. From September 14 to September 30, 2011, Regenox™ and ORC® Advanced (ISCO treatment) was injected into the shallow groundwater and soil in the smear zone. The locations of the injections are illustrated on Figure 10. From September 14 through 19, and September 20 through 21, 2011 ISCO injection was performed at injection points IP-1 through IP-11 from a depth of 24 feet up to 14 feet below grade; at a dosage rate of 45 pounds of ORC® Advanced and 240 pounds of Regenox (mixed with water). From September 22 through 30, 2011, ISCO injection was performed at injection points IP-12 through IP-36 from a depth of 25 feet up to 16 feet below grade; at a dosage rate of 184-gallons of Regenox™/ORC® Advanced per point and a water/chemical ratio of one to one. Prior to completion of the injections, approximately 3,000-gallons of groundwater were extracted from MW-5 and MW-6 using a whale pump. The objective of this injection was to enhance the natural attenuation of the residual organic chemicals within the shallow groundwater underlying the Site. The location of the injections is illustrated on Figure 10.

This treatment constituted a one-time injection via temporary injection points utilizing direct-push drilling. As such, no system operation or maintenance was required. The effectiveness of the chemical oxidation treatment was evaluated based on 18 months of post-remedial monitoring data and was discussed in the PRR for the May 31, 2014 to April 30, 2015 reporting period. It was determined that additional remediation was not needed. In the event a contingent remedy is needed, depending on the concentration and type of contaminants remaining in the groundwater above NYSDEC TOGS, the contingent remedy will consist of either the installation of ORC® Advanced filter socks into MW-8 and MW-9 or an additional dosing of ORC® Advanced and/or Regenox® into MW-8 and MW-9. MW-5, MW-6 and MW-7 will be used to measure the effectiveness of either one of these contingencies as downgradient groundwater monitoring wells.

The ORC® Advanced filter socks are permeable, fabric sleeves that will be filled with pure ORC® Advanced material and inserted into a colored, Naltex™ Flex-Guard for maximum durability. When hydrated, the filter socks produce controlled-release, molecular oxygen for periods of up to 12 months on a single application. The abundant oxygen is then readily available to facilitate the proven and cost-effective, enhanced aerobic biodegradation process. If a second dosing of ORC® Advanced and/or Regenox® is selected, the volume and density application rates will be based on the manufacturer's recommendations. Procedures for the maintenance of the monitoring well network and

[2] Sections 2.2.1.2 and 2.2.1.3 modified in May 2016.

the quarterly monitoring are outlined in the Monitoring Plan (Section 3 of this Revised SMP).

2.2.1.3 Passive Venting System

An SSDS was installed at the Site for additional protection in preventing the off-gassing of any residual VOCs in the groundwater. Based on post-remediation data collected through April 2015, AKRF Engineering, P.C. petitioned NYSDEC/NYSDOH to convert the SSDS into a passive venting system. In July 2015, permission to convert the SSDS was granted. In November 2015, the SSDS was modified into a passive venting system by removing the three suction fans, but maintaining all remaining system components to maintain a preferred pathway for sub-slab vapors. The passive venting system consists of horizontal trenches with perforated pipe, a filter sock, and gravel. The horizontal pipes are connected to vertical risers that connect to a header, which extends above the roof of the building. Any pipe penetrations through the vapor barrier were sealed in accordance with the manufacturer's recommendations. The SSDS layout, vent, roof, and trench detail is illustrated on Figure 9. The as-built drawings and specifications for the passive venting system are included in Appendix D.

Procedures for operating and maintaining the passive venting system are documented in the Operation and Maintenance Plan (Section 4 of this Revised SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this Revised SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

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 Composite Cover System

The composite 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 Passive Venting System[3]

The passive venting system will not be decommissioned unless prior written approval is granted by the NYSDEC. In the event that Site inspection data indicates that the passive venting system is no longer required, a proposal to decommission and remove the applicable components of the passive system will be submitted by the property owner to the NYSDEC and NYSDOH.

2.2.2.3 In-Situ Chemical Oxidation/Monitored Natural Attenuation

Groundwater monitoring activities to assess the effectiveness of the ISCO injections will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If conditions warrant, additional

[3] Section 2.2.2.2 was modified in May 2016.

treatment will be completed. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

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, commercial and/or industrial uses 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 Revised SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this Revised SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the Revised SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in this Revised SMP; and
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this Revised 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, commercial, and/or industrial uses provided that the long-term Engineering and Institutional Controls included in this Revised 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 Revised 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 (this does not include raised bed gardens with imported clean soil or green roofs); and
- The Site owner or remedial party will submit to NYSDEC a written statement 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 Revised 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. Any future intrusive work that will penetrate the composite cover system, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this Revised SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the Site (see Appendices E and F). A sample HASP is attached as Appendix E to this Revised SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A¬1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

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 and bridge footings). The Site owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this Revised 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 Revised 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 Revised 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 Revised 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 BCA, 6NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 24-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls 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 Revised 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 Revised 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 AKRF. These emergency contact lists must be maintained in an easily accessible location at the Site.

Table 2: Emergency Contact Telephone Numbers[4*]

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
AKRF	(212) 696-0670
Courtlandt Crescent Associates, L.P.	(646) 388-8216
Remedial Engineer (AKRF – Michelle Lapin, P.E.)	(646) 388-9520
NYSDEC Project Manager (Mandy Yau)	(718) 482-4897

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

[4] Modified May 2016.

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 383 East 162nd Street, Bronx, New York

Nearest Hospital Name: Bronx Lebanon Hospital

Hospital Location: 1650 Grand Concourse, Bronx, NY 10457

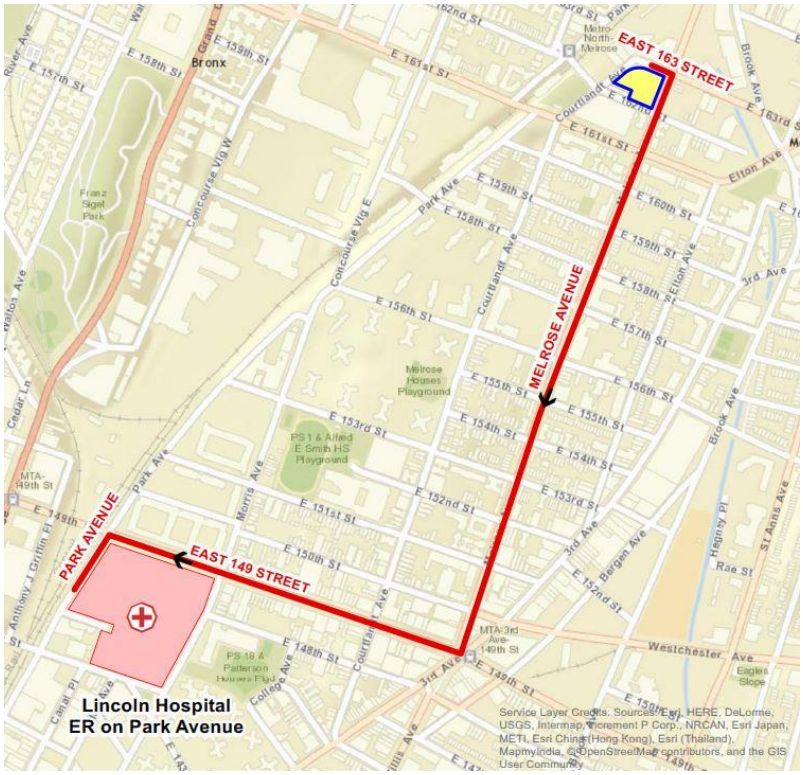
Hospital Telephone: 718-590-1800

Directions to the Hospital:

1. Start at 383 E 162ND ST, BRONX going toward COURTLANDT AVE, go 525 ft
2. Turn on TELLER AVE go 1.16 mi
3. Continue on MORRIS AVE go 0.13 mi
4. Turn on MT EDEN PKY go 0.12 mi
5. Turn on GRAND CONCOURSE go 85 ft
6. Arrive at 1650 GRAND CONCOURSE, BRONX

Total Distance: 1.52 miles

Total Estimated Time: 6 minutes



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 2). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

2.5.3.1 Procedures for spills

If visual inspection and/or soil screening identify evidence of a petroleum release, either from equipment inside the new building or petroleum encountered during future excavation/construction activities, the owner and Remedial Engineer will be contacted, and all work activities will be halted until further instructions are received from the Remedial Engineer. The spill will be reported to the NYSDEC Spill Hotline (1-800-457-7362) within two hours of discovery.

2.5.3.2 Evacuation plans

- In case of a fire, employees/contractors/residents should activate the nearest fire alarm box and/or make a telephone call to the local Fire Department via 911. The locations of the fire alarm boxes are noted on the evacuation floor plans in the new building.
- It may be necessary to activate additional fire alarm boxes, or shout the alarm, if people are still in the building and the alarm has stopped sounding, or if the alarm does not sound. This can be done while exiting.
- Persons discovering a fire, smoky condition, or explosion should pull the fire alarm box. Any pertinent fire or rescue information should be conveyed to the Fire Department. All emergency telephone numbers are listed in Section 2.5.1.
- When the fire alarm sounds, all personnel should ensure that nearby personnel are aware of the emergency, quickly shutdown operating equipment, close doors and exit the building using stairwells.
- All occupants should exit the building.
- All occupants and workers should know where primary and alternate exits are located, and be familiar with the various evacuation routes available. Floor plans with escape routes, alternate escape routes, and exit locations should be posted in the building.
- Building occupants must NOT use elevators as an escape route in the event of a fire.
- To report all other emergencies and injuries, a call should be placed to 911. State your name, your location, and the nature of the call. Speak slowly and clearly. Wait for the dispatcher to hang up first. On occasion, the dispatcher may need additional information or may provide you with additional instructions.
- Small fires can be extinguished only if you are trained to use a fire extinguisher. However, an immediate readiness to evacuate is essential.
- All fires, even those that have been extinguished, must be reported to the property owner immediately.
- Do not enter a room that is smoke filled.
- Do not enter a room if the door is warm to the touch.

2.5.3.3 Procedures for Breach of Composite Cover System

The following procedures will be required if breaching of the composite cover system is needed or occurs or is discovered during a monitoring/inspection event in accordance with Section 3.2. It is noted that no planned breach beneath any on-site building will be allowed that damages the passive venting system piping. The map of the PE-certified as-built drawings for the venting system (Appendix D) must be consulted prior to disturbance of the slab to avoid digging in pipe locations.

- The NYSDEC and NYSDOH will be notified of the request, and approval will need to be granted prior to the planned breach. If an unplanned breach occurs, the above agencies will be notified within 24 hours of the discovery of the occurrence.
- A written plan detailing the proposed repair or replacement activities will be submitted for review. A Site Plan indicating the area of the breach will be included in the plan.
- Once approval is received, the NYSDEC and NYSDOH will be notified at least 5 days prior to plan implementation to afford the ability to be on-Site during the repair/replacement activities.
- If a breach should occur, grout injection will be performed, where applicable, to eliminate water infiltrations, fill voids, and repair any cracks of the vapor barrier. It is noted that no planned breach will be allowed that damages the passive venting system piping. The map of the piping layout (Figure 9 and Appendix D) must be consulted to avoid digging in pipe locations. The basic steps for this type of crack repair are:
    1. Clean the area to be injected; remove any delaminated concrete, dust, dirt, etc. in and around the crack;
    2. Drill holes for injection packers at an angle to intersect the crack; the spacing for the holes is determined by a NYS-licensed P.E. based on the size and severity of the crack(s);
    3. Install and tighten packers;
    4. Flush crack with water; in the event that there is water seeping through the crack, this step shall not be necessary;
    5. Inject the chemical grout beginning at the bottom; continue along the crack from one end to the other; and,
    6. Remove the injection packers, patch the holes, remove any excess surface grout and clean the equipment.
- If a breach of an area greater than 12 inches in diameter is requested, the concrete foundation in the area will be saw cut, removed, and disposed of properly as construction and demolition debris. The concrete area to be saw cut will be greater than the area of vapor barrier to be breached. Upon completion of the subsurface activities, the vapor barrier will be installed according to the manufacturer's product specifications with the vapor barrier overlapping the original barrier appropriately. The ends of the barrier will be sealed as per the manufacturer's product specifications to ensure a vapor proof seal. It is noted that no planned breach will be allowed that

damages the passive venting system piping. The map of the piping layout (Figure 9 and Appendix D) must be consulted to avoid digging in pipe locations.

- As all soil was removed above the level of the vapor barrier, there will not be any soil to be removed or managed due to a breach. All soil remaining below the vapor barrier was within acceptable guidelines and limits.
- All repairs to Composite Cover System breaches must be inspected and certified by a Professional Engineer licensed in NY State.

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 composite 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, indoor air, soil vapor, soils);
- 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; and
- 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.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on-site was conducted for the 18-month period following initial approval of the SMP. Based on the quarterly post-remediation data collected through April 2015, the Site monitoring and inspection frequencies were revised. Monitoring programs are summarized in Table 3 and outlined in detail in Sections 3.2 and 3.3 below. Future revisions to the monitoring and inspection schedule will be determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals.

Table 3: Monitoring/Inspection Schedule

Monitoring Program	Monitoring Frequency*	Event	Matrix	Analysis	Termination Criteria
Groundwater Monitoring and Sampling	Annual	Monitoring and Sampling	Groundwater	VOCs via EPA Method 8260	See Section 2.2.2.3
Composite Cover System	Annual. First inspection no more than 18 months after COC.	Inspection	Visual	None	See Section 2.2.2.1
Passive Venting System	Annual	Inspection	Visual	None	See Section 2.2.2.2

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH. Frequency was last modified in May 2016.

3.2 COMPOSITE COVER SYSTEM MONITORING

Exposure to residual contaminated soils is being prevented by an engineered, composite cover system that was built on the Site. The composite cover system is shown on Figure 11.

The composite cover system will remain intact 24 hours a day, seven days a week, for 365 days a year. Breaching of the demarcation barrier underneath the clean fill buffer, concrete sidewalks, foundation walls and slabs or vapor barrier is prohibited by the Environmental Easement. In the unlikely event of an unanticipated accidental or requested breach, the procedure for response to breach of the composite cover system is outlined in Section 2.5.3.3.

Monitoring of the composite 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 inspection and certification by a NYS-licensed P.E. which shall qualitatively evaluate the concrete floor, support columns into the floor and the wall joints, and passive venting system piping which penetrates through the floor slab to assess their status as composite cover system elements. If any cracks or openings are identified, including on accessible aboveground venting system piping, they shall be screened for organic vapors with a field PID and any readings shall be noted. In addition, any cracks or openings in the floor shall then be sealed. The results of the inspection will be included in the Periodic Review Report. In addition, the composite cover system must be inspected and certified any time a breach 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 composite cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Groundwater Monitoring[5]

Groundwater monitoring will be performed on an annual basis to assess the performance of the remedy. The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the Site. The network of on-site wells has been designed based on the results of the RI and Supplemental Investigation. MW-5, MW-6, MW-7, MW-8, and MW-9 were installed at the Site in September and October 2011 and will serve as the groundwater monitoring wells for the post-remedial groundwater monitoring (see Figure 2 for well locations). Monitoring well construction logs are included in Appendix G. Groundwater samples will be collected from the wells using the low-flow sampling methodology as specified in the QAPP (Appendix H), submitted to an Environmental Laboratory Approval Program (ELAP) Certified Laboratory, and analyzed for TCL VOCs via EPA Method 8260 with NYSDEC ASP Category B deliverables. Additional ISCO parameters including dissolved oxygen (DO) and oxidation/reduction potential (ORP) will be monitored in the field during sampling.

The five wells will be sampled annually for five years (2015 to 2020). Sampling frequency will be reassessed with NYSDEC and NYSDOH following this five year period. Notwithstanding, groundwater monitoring will continue, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. QA/QC samples will be collected and analyzed in connection with the testing as set forth in the Quality Assurance Project Plan (QAPP) (Appendix H) and will include one trip blank, one field blank, one duplicate, one matrix spike, and one matrix spike duplicate. In addition, the data will be validated by a qualified third-party and a Data Usability Summary Report (DUSR) will be prepared and submitted with each PRR. All data will be submitted in the NYSDEC-approved Electronic Data Deliverable (EDD) format. The sampling frequency may be modified with the approval NYSDEC. The Revised SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix I. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

First, depth-to-water and depth-to-bottom measurements will be collected from the monitoring wells. Purging/sampling will be performed in accordance with EPA's Low-Flow (minimal drawdown) Groundwater Sampling Procedures[6] (see the QAPP in Appendix H). Purging and sampling will be performed using a low-flow sampling pump at a pumping rate no greater than 0.5 liters per min (LPM). Water levels within the well will be monitored using an electronic water level indicator and a pumping rate will be maintained to limit drawdown to less than 0.33 feet if possible. In-line water quality field

[5] Section 3.2 and 3.3.1 modified in May 2016.

[6] EPA Region 1. Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. January 2010.

parameters will be measured at a frequency no less than every five minutes. Purging will continue until the readings of pH, temperature, conductivity, ORP, and DO have stabilized (i.e. three successive readings within approximately 0.1 for pH, 3% for conductivity, 10mv for ORP, and 10% for DO). Purge water will be contained in 55-gallon drums and disposed of in accordance with applicable regulations.

After purging is complete, a sample of the groundwater will be collected at the established low-flow pumping rate directly from the pump discharge into laboratory-issued containers by a QEP. The samples will be placed in a cooler on ice and sent to an ELAP certified laboratory via overnight delivery for analysis as specified in Section 3.3.1, above. The following samples will also be collected for QA/QC purposes: trip blank, field blank, duplicate sample, matrix spike, and matrix spike duplicate.

A qualified third-party Data Validator will review the groundwater laboratory data and prepare a DUSR. All data will be provided in the NYSDEC-approved EDD format.

3.3.1.1 Sampling QA/QC

All on-site sampling equipment will be decontaminated between each use in the following manner: laboratory grade detergent and fresh water wash using scrub brush, followed by two fresh water rinses and final air dry. The submersible pump used for groundwater sample collection will be decontaminated between sample collection by passing the detergent and water mixture through the pump, followed by two fresh water rinses. Gloves worn for sample handling will be discarded between sample collections. Dedicated, new polyethylene tubing will be used at each well location for purging and sampling. Samples will be packaged in 40-mil vials supplied by the laboratory by QEPs and stored on ice pending same day or overnight shipment to a NYS-certified laboratory. The vials will be filled completely and checked to ensure no air bubbles are present. Additional field and laboratory QA/QC protocol is included in the QAPP (Appendix H).

3.3.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and 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 repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic 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 J). 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 are up to date.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the Site (Appendix H). 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 on-site. 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 of this Revised SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared and submitted within 15 days of receipt of validated data after each sampling event. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- 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);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 4 below.

Table 4: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Periodic Review Report	Annually beginning 18 months after receipt of COC until termination of Environmental Easement or termination of requirement by NYSDEC
Groundwater Sampling Report	Following each groundwater sampling event

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

4.0 OPERATION AND MAINTENANCE PLAN[7]

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. This Operation and Maintenance Plan:

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

Information on non-mechanical Engineering Controls (i.e., composite cover system) is provided in Section 3 - Engineering and Institutional Control Plan. A copy of this Operation and Maintenance Plan, along with the complete Revised SMP, will be kept at the Site and will be located in the on-site maintenance room and/or the building management's office. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the Revised SMP.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

4.2.1 Passive Venting System

4.2.1.1 Scope

As an additional measure to prevent vapor-phase VOCs remaining in groundwater from entering the new building's interior, installation of an SSDS was included in the construction of the new buildings' foundation. The sub-slab piping for the SSDS was installed in October and November 2011. In November 2015, the SSDS was modified into a passive venting system.

The passive venting system provides a preferred pathway for sub-slab vapors below the concrete building slab to vent without intruding into the building. The passive venting system consists of horizontal trenches with four-inch perforated PVC pipe, a filter sock, and gravel. The horizontal pipes are connected to vertical risers that extend above the roof of the building. Sample ports were also installed in each of the riser pipes to allow for the collection of sub-slab vapor samples, if needed. In addition, labels were affixed to each riser immediately below the sample ports indicating the following:

PASSIVE VENTING SYSTEM

This is a component of a Sub-Slab Depressurization System

DO NOT ALTER OR DISCONNECT

For Service call: AKRF646-388-9532

[7] Section 4.0 modified in May 2016.

The passive venting system has no active mechanical equipment and, therefore, cannot be altered without physically removing piping, gauges, or sampling ports. The criteria for decommissioning and termination of the passive venting system is outlined in Section 2.2.2.2 and will require, at a minimum, removal of all above grade system components and permanent closure of system-related penetrations through the building slab.

4.2.1.3 System Operation: Routine Operation Procedures

In accordance with Table 3, the passive venting system does not require monitoring of specific parameters. Visual inspections of the system components will be conducted in addition to inspections of the building floor for wear-related cracks or pitting, as part of the composite cover system inspection discussed in Section 3.2. The passive venting system will remain in place and will not be decommissioned without written approval by NYSDEC and NYSDOH. A proposal to decommission the system will be submitted by the property owner based on confirmatory data that justifies such request. Systems will remain in place until permission to discontinue use is granted in writing by NYSDEC and NYSDOH.

4.2.1.4 System Operation: Routine Equipment Maintenance

As there are no mechanical components of the passive venting system, periodic maintenance is not warranted.

4.2.1.5 System Operation: Non-Routine Equipment Maintenance

As there are no mechanical components of the passive venting system, periodic maintenance is not warranted.

4.2.2 In-Situ Chemical Oxidation

4.2.2.1 Scope

Based upon the detection and distribution of groundwater contaminants, groundwater treatment including ISCO was conducted on portions of Lots 35 and 41. Regenox™ and ORC® Advanced (ISCO treatment) was injected into the shallow groundwater and soil in the smear zone. The objective of this injection was to enhance the natural attenuation of the residual organic chemicals within the shallow groundwater underlying the Site. The location of the injections is illustrated on Figure 10.

This treatment constituted a one-time injection via temporary injection points utilizing direct-push drilling. As such, no system operation or maintenance is required. However, after Regenox™/ORC® Advanced was injected into the overburden, groundwater monitoring occurred after the initial injection, 24 hours later, and weekly for the first month. Monitoring consisted of obtaining field readings for pH, Dissolved Oxygen (DO), Oxidation/Reduction Potential (ORP), temperature, and conductivity from the downgradient monitoring wells MW-5 through MW-9. Procedures for the maintenance of the monitoring well network and the annual monitoring are outlined in the Monitoring Plan (Section 3 of this Revised SMP).

4.2.2.2 System Start-Up and Testing

As the in-situ-chemical oxidation is not a mechanical system, no start-up testing was required.

4.2.2.3 System Operation: Routine Operation Procedures

As the in-situ-chemical oxidation is not a mechanical system, there are no routine operating procedure requirements.

4.2.2.4 System Operation: Routine Equipment Maintenance

As there are no mechanical components of the in-situ-chemical oxidation, periodic maintenance is not warranted.

4.2.2.5 System Operation: Non-Routine Equipment Maintenance

As the in-situ-chemical oxidation is not a mechanical system, there are no equipment maintenance requirements. In the event the initial chemical oxidation injection does not reduce the concentrations of VOCs in the overburden water in the on-site wells to or close to the NYSDEC TOGS groundwater standards or guidance values for class GA after one year of post remedial monitoring, a contingent remedy will be developed. Depending on the concentration and type of contaminants remaining in the groundwater above NYSDEC TOGS, the contingent remedy may consist of either the installation of ORC® Advanced filter socks into MW-8 and MW-9 or an additional dosing of ORC® Advanced and/or Regenox® into MW-8 and MW-9. MW-5 and MW-6 would be used to measure the effectiveness of either one of these contingencies as downgradient groundwater monitoring wells. The ORC® Advanced filter socks are permeable, fabric sleeves that will be filled with pure ORC® Advanced material and inserted into a colored, Naltex™ Flex-Guard for maximum durability. When hydrated, the filter socks produce controlled-release, molecular oxygen for periods of up to 12 months on a single application. The abundant oxygen is then readily available to facilitate the proven and cost-effective, enhanced aerobic biodegradation process. If a second dosing of ORC® Advanced and/or Regenox® is selected, the volume and density application rates will be based on the manufacturer's recommendations.

4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING

4.3.1 Passive Venting System Monitoring

A passive venting system has been installed to mitigate possible soil vapor intrusion into occupied buildings.

4.3.1.1 Monitoring Schedule

As summarized in Table 3, the passive venting system does not require routine inspections for operational parameters. Visual inspections will be conducted on an annual basis as part of the annual composite cover system inspection, discussed in Section 3.2. 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 composite cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the passive venting system are specified in Sections 4.4, 5.1, and 5.3 of this Plan.

4.3.1.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the composite cover system inspection. The passive venting system components to be monitored include, but are not limited to Photohelic® gages, and general system piping. A complete list of

components to be checked is provided in the Inspection Checklist, presented in Appendix J. Any significant problems will be noted in the subsequent PRR.

4.3.2 In-Situ Chemical Oxidation Monitoring

Based upon the detection and distribution of groundwater contaminants, groundwater treatment including in-situ chemical oxidation was conducted at the Site. In-situ chemical oxidation monitoring included the collection and analysis of groundwater samples from the newly-installed network of five groundwater monitoring wells. The location of the wells is illustrated on Figure 2 and well construction details and boring logs are included in Appendix G.

4.3.2.1 Monitoring Schedule

System monitoring will include annual groundwater monitoring for five years as of the latest revision date for this Revised Site Management Plan (2016 to 2021). 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 monitoring well network has been reported. Monitoring deliverables for the monitoring well network are specified in Sections 4.4, 5.1 and 5.3 of this Plan.

4.3.2.2 General Equipment Monitoring

A visual inspection of the monitoring well network will be conducted during each monitoring event. Procedures for the maintenance of the monitoring well network and the quarterly monitoring are outlined in the Monitoring Plan (Section 3 of this Revised SMP).

4.3.2.3 Sampling Event Protocol

Prior to sampling, a depth-to-water and depth-to-bottom measurements will be taken and recorded using a clean electronic water-level measurement device. Purging/sampling will be performed in accordance with EPA's Low-Flow (minimal drawdown) Groundwater Sampling Procedures. Purging and sampling will be performed using a low-flow sampling pump at a pumping rate no greater than 0.5 liters per min (LPM). Water levels within the well will be monitored using an electronic water level indicator and a pumping rate will be maintained to limit drawdown to less than 0.33 feet if possible. In-line water quality field parameters will be measured at a frequency no less than every five minutes. Purging will continue until the readings of pH, temperature, conductivity, ORP, and DO have stabilized (i.e. three successive readings within approximately 0.1 for pH, 3% for conductivity, 10mv for ORP, and 10% for DO). Purge water will be contained in 55-gallon drums and disposed of in accordance with applicable regulations.

After purging is complete, a sample of the groundwater will be collected at the established low-flow pumping rate directly from the pump discharge into laboratory-issued containers by a QEP. The samples will be placed in a cooler on ice and sent to an ELAP and CLP certified laboratory via overnight delivery for analysis as specified in Section 3.3.1, above. The following samples will also be collected for QA/QC purposes: trip blank, field blank, duplicate sample, matrix spike, and matrix spike duplicate.

A qualified third-party Data Validator will review the groundwater laboratory data and prepare a DUSR.

4.3.3 System Monitoring Devices and Alarms

The SSDS no longer requires a warning device to indicate that the system is not operating properly as it has been converted into a passive venting system. Any issues associated with the venting system components will be identified in the composite cover system inspection and significant problems will be noted in the subsequent PRR.

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 on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the PRR, as specified in Section 5 of this Revised SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (see Appendices H, I) 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;
- Presence of leaks;
- Date of leak repair;
- 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 Revised 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 an erosion or flooding event 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 H, and I). Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix J). 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 the 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, 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 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 the Revised SMP 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;
- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;
- 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; and
- The information presented in this report is accurate and complete.

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: I have been authorized and designated by all site owners to sign this certification for the Site.

No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

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

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen 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 Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also 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 conclusions or observations regarding Site contamination 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 hard-copy format, to the NYSDEC Central Office and Regional Office in which the Site is located, and in electronic format to NYSDEC Central Office, Regional 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 corrective measures plan 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

Table 1
Track 4 Site Specific Soil Cleanup Objectives (SSSCOs)
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Compound/Constituent	Track 4 SSSCOs	Units
VOCs with the exception of the following	Restricted Residential SCOs	
Benzene	0.06	mg/kg
Chloroform	0.37	mg/kg
1,1,1-Trichloroethane	0.68	mg/kg
MTBE	0.93	mg/kg
Total SVOCs	500	mg/kg
Metals	Commercial SCOs	

Notes:
mg/kg = milligrams per kilogram
VOC = volatile organic compound
SVOC = semi-volatile organic compound

TABLE 5 (Page 1 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-1 (10)	EP-2 (10)	EP-3	EP-XX	EP-4	EP-5	EP-6	EP-7	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	10	10	13.1	13.1	14.1	14.3	9.9	10.1			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
[1] = feet above mean sea level
EP-XX is a duplicate of EP-3
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 2 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	9.4	8.7	9.1	8.8	9.3	8.7	8.7			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	ND	ND	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND R	ND	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	4.7 J	ND	22.2	9.4	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

[1] = feet above mean sea level

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 3 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	8.9	8.7	9.9	10.6	10.8	9.8	9.0			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	ND UJ	ND	ND UJ	ND UJ	ND	ND	ND	50	100,000	100,000
Benzene	ND	0.48 J	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND R	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	0.70 J	ND	0.64 J	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND UJ	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	9.3	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	0.78 J	1,300	19,000	19,000
Toluene	ND	ND	0.64 J	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND UJ	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

[1] *= feet above mean sea level*

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 4 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-22	EP-23	EP-24	EP-25	EP-26	EP-27	EP-28	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	7.7	13.0	9.1	10.6	9.9	10.1	8.7			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND R	ND R	ND R	ND R	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	24.4	9.2	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	1.5 J	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

[1] *= feet above mean sea level*

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 5 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-29	EP-30	EP-31	EP-XXX	EP-32	EP-33	EP-34	EP-35	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	8.3	7.7	8.5	8.5	9.8	10.9	10.9	11.3			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/14/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	2.1	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	10.4	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	10.5	23.6	23.5	31.7	ND	ND	5.0 J	21.7	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	43.5	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	3.1	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	1.9	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	4.9	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
[1] = feet above mean sea level

EP-XXX is a duplicate of EP-31
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 6 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-36	EP-37	EP-38	EP-39	EP-40	EP-XXXX	EP-41	EP-42	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	11.4	9.9	10.9	8.7	10.6	10.6	10.3	10.3			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND UJ	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	3.9 J	14.8	13.1	6.5	6.4 J	ND	ND	5.5 J	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXX is a duplicate of EP-40

[1] = feet above mean sea level
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 7 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Cortlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-43	EP-44	EP-45	EP-46	EP-47	EP-48	EP-49	EP-50	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	8.5	9.5	10.3	10.4	10.5	9.7	9.2	9.7			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND R	ND R	ND R	ND R	ND R	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND UJ	ND UJ	ND UJ	ND UJ	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND UJ	ND UJ	ND UJ	ND UJ	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	2.8 J	ND	2.5 J	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	0.60 J	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	0.60 J	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXX is a duplicate of EP-40

[1] = feet above mean sea level
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 8 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-51	EP-52	EP-53	EP-54	EP-55	EP-56	EP-57	EP-58	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	9.5	10.9	11.8	13.1	8.8	8.7	8.5	13.9			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	ND	ND	ND	ND	ND R	ND R	ND R	ND R	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND R	ND R	ND R	ND R	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXX is a duplicate of EP-40

[1] = feet above mean sea level
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 9 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-59	EP-60	EP-61	EP-62	EP-XXXXX	EP-63	EP-64	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	13.7	12.6	8.4	8.5	8.5	9.5	9.5			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	ND R	ND R	ND R	ND R	ND R	ND R	ND R	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	0.38 J	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	0.38 J	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXXX is a duplicate of EP-62

[1] = feet above mean sea level
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 10 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	FIELD BLANK	FIELD BLANK	FIELD BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	NA	NA	NA	NA	NA	NA			
Matrix	AQ	AQ	AQ	AQ	AQ	AQ			
Date Sampled	9/12/2011	9/13/2011	9/13/2011	9/12/2011	9/13/2011	9/13/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics									
Acetone	ND	ND R	ND R	ND R	ND R	ND R	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromodichloromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromoform	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Bromomethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	760	2,400	2,400
Chlorobenzene	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
Chloroethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chloroform	ND	ND	ND	ND	ND	ND	370	100,000	370
Chloromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibromochloromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	1,800	13,000	13,000
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	270	26,000	26,000
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	20	3,100	3,100
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	330	100,000	100,000
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	250	100,000	100,000
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	190	100,000	100,000
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,4-Dioxane	ND	ND	ND	ND	ND	ND	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Tetrachloroethene	ND	ND	ND	ND	ND	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	680	100,000	680
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Trichloroethene	ND	ND	ND	ND	ND	ND	470	21,000	21,000
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	ND	ND	ND	ND	ND	ND	20	900	900
m,p-Xylene	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	ND	ND	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

[1] = feet above mean sea level

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 11 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	BLR EP-1	BLR EP-2	BLR EP-3	BLR EP-4	BLR EP-5	HL EP-1	HL-EP-2	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	6 feet	6 feet	6 feet	6 feet	12 feet	3 feet	3 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/27/2011	7/27/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	NA	NA	NA	NA	ND R	NA	NA	50	100,000	100,000
Benzene	0.28 J	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Bromodichloromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Bromoform	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Bromomethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
2-Butanone (MEK)	NA	NA	NA	NA	ND	NA	NA	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	ND	NA	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	0.30 J	ND	NA	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	ND	NA	ND	ND	5,900	100,000	100,000
Carbon disulfide	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Carbon tetrachloride	NA	NA	NA	NA	ND	NA	NA	760	2,400	2,400
Chlorobenzene	NA	NA	NA	NA	ND	NA	NA	1,100	100,000	100,000
Chloroethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Chloroform	NA	NA	NA	NA	ND UJ	NA	NA	370	100,000	370
Chloromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Cyclohexane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Dibromochloromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,2-Dibromoethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,2-Dichlorobenzene	NA	NA	NA	NA	ND	NA	NA	1,100	100,000	100,000
1,3-Dichlorobenzene	NA	NA	NA	NA	ND	NA	NA	2,400	49,000	49,000
1,4-Dichlorobenzene	NA	NA	NA	NA	ND	NA	NA	1,800	13,000	13,000
Dichlorodifluoromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,1-Dichloroethane	NA	NA	NA	NA	ND	NA	NA	270	26,000	26,000
1,2-Dichloroethane	NA	NA	NA	NA	ND	NA	NA	20	3,100	3,100
1,1-Dichloroethene	NA	NA	NA	NA	ND	NA	NA	330	100,000	100,000
cis-1,2-Dichloroethene	NA	NA	NA	NA	ND	NA	NA	250	100,000	100,000
trans-1,2-Dichloroethene	NA	NA	NA	NA	ND	NA	NA	190	100,000	100,000
1,2-Dichloropropane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
cis-1,3-Dichloropropene	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
trans-1,3-Dichloropropene	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,4-Dioxane	NA	NA	NA	NA	ND	NA	NA	100	13,000	13,000
Ethylbenzene	0.39 J	ND	0.43 J	ND	0.34 J	ND	ND	1,000	41,000	41,000
Freon 113	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
2-Hexanone	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Isopropylbenzene	ND	ND	0.29 J	ND	0.41 J	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	ND	NA	ND	ND	NVG	NVG	NVG
Methyl Acetate	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Methylcyclohexane	NA	NA	NA	NA	0.49 J	NA	NA	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Methylene chloride	NA	NA	NA	NA	ND	NA	NA	50	100,000	100,000
Naphthalene	ND	ND	ND	ND	NA	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	ND	NA	ND	ND	3,900	100,000	100,000
Styrene	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Tetrachloroethene	NA	NA	NA	NA	ND	NA	NA	1,300	19,000	19,000
Toluene	1.3	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,2,4-Trichlorobenzene	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,1,1-Trichloroethane	NA	NA	NA	NA	ND	NA	NA	680	100,000	680
1,1,2-Trichloroethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
Trichloroethene	NA	NA	NA	NA	ND	NA	NA	470	21,000	21,000
Trichlorofluoromethane	NA	NA	NA	NA	ND	NA	NA	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	ND	NA	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	0.54 J	ND	NA	ND	ND	8,400	52,000	52,000
Vinyl chloride	NA	NA	NA	NA	ND	NA	NA	20	900	900
m,p-Xylene	0.93 J	ND	0.87 J	ND	0.69 J	ND	ND	NVG	100,000	100,000
o-Xylene	0.49 J	ND	0.47 J	ND	0.33 J	ND	ND	NVG	100,000	100,000
Xylene (total)	1.4	ND	1.3	ND	1.0 J	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXXX is a duplicate of EP-62

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 12 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	HL EP-3	HL EP-4	HL EP-5	EP-XX	T001 EP-1	T001 EP-2	T001 EP-3	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	3 feet	3 feet	6 feet	6 feet	3 feet	3 feet	3 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	NA	NA	NA	ND R	NA	NA	NA	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Bromodichloromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Bromoform	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Bromomethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2-Butanone (MEK)	NA	NA	NA	ND	NA	NA	NA	120	NVG	NVG
n-Butylbenzene	ND	ND	ND	NA	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	ND	ND	NA	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	ND	ND	NA	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Carbon tetrachloride	NA	NA	NA	ND	NA	NA	NA	760	2,400	2,400
Chlorobenzene	NA	NA	NA	ND	NA	NA	NA	1,100	100,000	100,000
Chloroethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Chloroform	NA	NA	NA	ND	NA	NA	NA	370	100,000	370
Chloromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Cyclohexane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Dibromochloromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dibromoethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dichlorobenzene	NA	NA	NA	ND	NA	NA	NA	1,100	100,000	100,000
1,3-Dichlorobenzene	NA	NA	NA	ND	NA	NA	NA	2,400	49,000	49,000
1,4-Dichlorobenzene	NA	NA	NA	ND	NA	NA	NA	1,800	13,000	13,000
Dichlorodifluoromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,1-Dichloroethane	NA	NA	NA	ND	NA	NA	NA	270	26,000	26,000
1,2-Dichloroethane	NA	NA	NA	ND	NA	NA	NA	20	3,100	3,100
1,1-Dichloroethene	NA	NA	NA	ND	NA	NA	NA	330	100,000	100,000
cis-1,2-Dichloroethene	NA	NA	NA	ND	NA	NA	NA	250	100,000	100,000
trans-1,2-Dichloroethene	NA	NA	NA	ND	NA	NA	NA	190	100,000	100,000
1,2-Dichloropropane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
cis-1,3-Dichloropropene	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
trans-1,3-Dichloropropene	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,4-Dioxane	NA	NA	NA	ND	NA	NA	NA	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2-Hexanone	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	ND	ND	NA	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Methylcyclohexane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Methylene chloride	NA	NA	NA	ND	NA	NA	NA	50	100,000	100,000
Naphthalene	ND	ND	ND	NA	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	ND	ND	NA	ND	ND	ND	3,900	100,000	100,000
Styrene	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Tetrachloroethene	NA	NA	NA	ND	NA	NA	NA	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,2,4-Trichlorobenzene	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,1,1-Trichloroethane	NA	NA	NA	ND	NA	NA	NA	680	100,000	680
1,1,2-Trichloroethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Trichloroethene	NA	NA	NA	ND	NA	NA	NA	470	21,000	21,000
Trichlorofluoromethane	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	ND	ND	NA	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	ND	ND	NA	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	NA	NA	NA	ND	NA	NA	NA	20	900	900
m,p-Xylene	ND	ND	0.44 J	ND UJ	ND	0.56 J	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	ND	0.44 J	ND UJ	ND	0.56 J	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-XX=Duplicate of T001 EP-5 at 6 feet

TABLE 5 (Page 13 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	T001 EP-4	T001 EP-5	Field Blank	Trip Blank	T002 North	T002 South	T002 East	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	3 feet	6 feet	NA	NA	10 feet	10 feet	10 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/28/2011	8/16/2011	8/16/2011	8/16/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics										
Acetone	NA	ND	ND	ND UJ	NA	NA	NA	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Bromodichloromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Bromoform	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Bromomethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
2-Butanone (MEK)	NA	ND	ND R	ND R	NA	NA	NA	120	NVG	NVG
n-Butylbenzene	ND	NA	NA	NA	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	ND	NA	NA	NA	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	NA	NA	NA	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	NA	ND	ND	1.3 J	NA	NA	NA	NVG	NVG	NVG
Carbon tetrachloride	NA	ND	ND	ND	NA	NA	NA	760	2,400	2,400
Chlorobenzene	NA	ND	ND	ND	NA	NA	NA	1,100	100,000	100,000
Chloroethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Chloroform	NA	ND	ND	ND	NA	NA	NA	370	100,000	370
Chloromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Cyclohexane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Dibromochloromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dibromoethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,2-Dichlorobenzene	NA	ND	ND	ND	NA	NA	NA	1,100	100,000	100,000
1,3-Dichlorobenzene	NA	ND	ND	ND	NA	NA	NA	2,400	49,000	49,000
1,4-Dichlorobenzene	NA	ND	ND	ND	NA	NA	NA	1,800	13,000	13,000
Dichlorodifluoromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,1-Dichloroethane	NA	ND	ND	ND	NA	NA	NA	270	26,000	26,000
1,2-Dichloroethane	NA	ND	ND	ND	NA	NA	NA	20	3,100	3,100
1,1-Dichloroethene	NA	ND	ND	ND	NA	NA	NA	330	100,000	100,000
cis-1,2-Dichloroethene	NA	ND	ND	ND	NA	NA	NA	250	100,000	100,000
trans-1,2-Dichloroethene	NA	ND	ND	ND	NA	NA	NA	190	100,000	100,000
1,2-Dichloropropane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
cis-1,3-Dichloropropene	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
trans-1,3-Dichloropropene	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,4-Dioxane	NA	ND	ND	ND	NA	NA	NA	100	13,000	13,000
Ethylbenzene	ND	ND	ND	ND	0.32 J	ND	ND	1,000	41,000	41,000
Freon 113	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
2-Hexanone	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	ND	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Methylcyclohexane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Methylene chloride	NA	ND	ND	ND	NA	NA	NA	50	100,000	100,000
Naphthalene	ND	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	NA	NA	NA	ND	ND	ND	3,900	100,000	100,000
Styrene	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Tetrachloroethene	NA	ND	ND	ND	NA	NA	NA	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	0.61 J	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,2,4-Trichlorobenzene	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,1,1-Trichloroethane	NA	ND	ND	ND	NA	NA	NA	680	100,000	680
1,1,2-Trichloroethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Trichloroethene	NA	ND	ND	ND	NA	NA	NA	470	21,000	21,000
Trichlorofluoromethane	NA	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
1,2,4-Trimethylbenzene	ND	NA	NA	NA	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	ND	NA	NA	NA	ND	0.18 J	ND	8,400	52,000	52,000
Vinyl chloride	NA	ND	ND	ND	NA	NA	NA	20	900	900
m,p-Xylene	ND	0.42 J	ND	ND	0.71 J	ND	ND	NVG	100,000	100,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	ND	0.42 J	ND	ND	0.71 J	ND	ND	260	100,000	100,000

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
EP-XXXXX is a duplicate of EP-62

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 14 of 14)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	T002 West	T002 Bottom	Trip Blank	Excavation 1 North	Excavation 1 South	Excavation 1 East	Excavation 1 West	Excavation 1 Bottom	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	10 feet	10 feet	NA	12	12 feet	12 feet	12 feet	12 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	8/16/2011	8/16/2011	8/16/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011			
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics											
Acetone	NA	ND	ND R	NA	NA	NA	NA	ND	50	100,000	100,000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800	60
Bromochloromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Bromodichloromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Bromoform	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Bromomethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Butanone (MEK)	NA	ND R	ND	NA	NA	NA	NA	ND	120	NVG	NVG
n-Butylbenzene	0.63 J	NA	ND	ND	ND	ND	ND	ND	12,000	NVG	NVG
sec-Butylbenzene	0.54 J	NA	ND	ND	ND	ND	ND	ND	11,000	100,000	100,000
tert-Butylbenzene	ND	NA	ND	ND	ND	ND	ND	ND	5,900	100,000	100,000
Carbon disulfide	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Carbon tetrachloride	NA	ND	ND	NA	NA	NA	NA	ND	760	2,400	2,400
Chlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	1,100	100,000	100,000
Chloroethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Chloroform	NA	ND	ND	NA	NA	NA	NA	ND	370	100,000	370
Chloromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Cyclohexane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Dibromochloromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,2-Dibromoethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,2-Dichlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	1,100	100,000	100,000
1,3-Dichlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	2,400	49,000	49,000
1,4-Dichlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	1,800	13,000	13,000
Dichlorodifluoromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,1-Dichloroethane	NA	ND	ND	NA	NA	NA	NA	ND	270	26,000	26,000
1,2-Dichloroethane	NA	ND	ND	NA	NA	NA	NA	ND	20	3,100	3,100
1,1-Dichloroethene	NA	ND	ND	NA	NA	NA	NA	ND	330	100,000	100,000
cis-1,2-Dichloroethene	NA	ND	ND	NA	NA	NA	NA	ND	250	100,000	100,000
trans-1,2-Dichloroethene	NA	ND	ND	NA	NA	NA	NA	ND	190	100,000	100,000
1,2-Dichloropropane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
cis-1,3-Dichloropropene	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
trans-1,3-Dichloropropene	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,4-Dioxane	NA	ND	ND	NA	NA	NA	NA	ND	100	13,000	13,000
Ethylbenzene	0.26 J	ND	ND	ND	ND	ND	ND	ND	1,000	41,000	41,000
Freon 113	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Hexanone	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
p-Isopropyltoluene	0.62 J	NA	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methyl Acetate	NA	5.9 J	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Methylcyclohexane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Methyl Tert Butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000	930
4-Methyl-2-pentanone(MIBK)	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Methylene chloride	NA	ND	ND	NA	NA	NA	NA	ND	50	100,000	100,000
Naphthalene	1.6 J	NA	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
n-Propylbenzene	ND	NA	ND	ND	ND	ND	ND	ND	3,900	100,000	100,000
Styrene	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Tetrachloroethene	NA	ND	ND	NA	NA	NA	NA	ND	1,300	19,000	19,000
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000	100,000
1,2,3-Trichlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,2,4-Trichlorobenzene	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,1,1-Trichloroethane	NA	ND	ND	NA	NA	NA	NA	ND	680	100,000	680
1,1,2-Trichloroethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Trichloroethene	NA	ND	ND	NA	NA	NA	NA	ND	470	21,000	21,000
Trichlorofluoromethane	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,2,4-Trimethylbenzene	5.1 J	NA	ND	ND	ND	ND	ND	ND	3,600	52,000	52,000
1,3,5-Trimethylbenzene	1.9 J	NA	ND	ND	ND	ND	ND	ND	8,400	52,000	52,000
Vinyl chloride	NA	ND	ND	NA	NA	NA	NA	ND	20	900	900
m,p-Xylene	0.96 J	ND	ND	ND	ND	0.65 J	ND	ND	NVG	100,000	100,000
o-Xylene	0.89 J	ND	ND	ND	ND	ND	ND	ND	NVG	100,000	100,000
Xylene (total)	1.9	ND	ND	ND	ND	0.65 J	ND	ND	260	100,000	100,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

EP-XXXXX is a duplicate of EP-62

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 1 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-1 (10)	EP-2 (10)	EP-3	EP-XX	EP-4	EP-5	EP-6	EP-7	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	10 feet	10 feet									
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11			
Semi Volatile Organics											
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	NVG	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	800	800	NVG
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	46.8	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	291	ND	ND	ND	100,000	100,000	NVG
Atrazine	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	ND	536	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	ND	342	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	346	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	ND	250	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	214	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbazole	ND	ND	ND	ND	21.0 J	ND	ND	ND	NVG	NVG	NVG
Caprolactam	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Chrysene	ND	ND	ND	ND	528	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	93.7	ND	ND	ND	330	330	NVG
Dibenzofuran	ND	ND	ND	ND	19.6 J	ND	ND	ND	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	40.6	ND	ND	ND	1,300	ND	ND	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	61.6	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	NVG	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	213	ND	ND	ND	500	500	NVG
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	ND	1,370	ND	ND	ND	100,000	100,000	NVG
Pyrene	36.2	ND	ND	ND	1,210	45.4	ND	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	76.8	0	0	0	6,887.7	177.4	0	0	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 UUSCOs.

[1] *= feet above mean sea level*

NA=Not Applicable

EP-XX is a duplicate of EP-3.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 2 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	10 feet	10 feet								
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	Use		
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	ND UJ	ND UJ	ND	ND	ND	ND	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	ND UJ	ND UJ	ND	ND	ND	ND	ND	NVG	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	800	800	NVG
Phenol	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	29.6 J	ND	ND	ND	100,000	100,000	NVG
Atrazine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	30.7 J	132	ND	16.6 J	21.8 J	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	26.9 J	123	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	26.3 J	123	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	21.6 J	80.8	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	17.6 J	80.7	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbazole	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Caprolactam	ND	ND	41.5 J	49.5 J	ND	53.3 J	54.3 J	NVG	NVG	NVG
Chrysene	ND	ND	29.0 J	134	ND	15.1 J	16.2 J	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	24.6 J	ND	ND	ND	330	330	NVG
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	ND	ND	42.1	233	ND	24.4 J	28.3 J	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND UJ	ND UJ	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	17.0 J	76	ND	ND	ND	500	500	NVG
Isophorone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	27.3 J	141	ND	21.9 J	20.4 J	100,000	100,000	NVG
Pyrene	ND	ND	49.2	259	ND	30.1 J	36.9 J	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	0	0	329	1,530.4	0.0	161	178	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

[1] = feet above mean sea level

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 3 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]									
Matrix	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	9-12-11	Use		
Semi Volatile Organics									
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	800	800	NVG
Phenol	ND	ND	ND	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbazole	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Caprolactam	71.3 J	43.5 J	63.1	98	90.7	ND	NVG	NVG	NVG
Chrysene	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dimethyl phthalate	40.5 J	ND	ND	ND	39.6 J	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	500	500	NVG
Isophorone	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Pyrene	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	111.8	43.5	63.1	98	130.3	0	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NVG=No Value Given
J=Analyte detected below quantitation limits
[1] = feet above mean sea level

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*
***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*
****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 4 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-21	EP-22	EP-23	EP-24	EP-25	EP-26	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]									
Matrix	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/13/2011			
Semi Volatile Organics									
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND	NVG	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	800	800	NVG
Phenol	ND	ND	ND	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	50	65	145	ND	319	ND	20,000	20,000	NVG
Acenaphthylene	44.2	202	484	ND	390	ND	100,000	100,000	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Anthracene	162	377	829	ND	1,070	ND	100,000	100,000	NVG
Atrazine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	217	**1,260**	**2,880**	ND	**2,480**	ND	1,000	1,000	NVG
Benzo(a)pyrene	176	**1,170**	**2,920**	ND	**2,150**	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	177	**1,310**	**2,920**	ND	**2,220**	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	86.2	763	2,250	ND	1,460	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	88.7	**856**	**1,770**	ND	**1,480**	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	296	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	18.5 J	ND	37.5 J	ND	NVG	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbazole	ND	118	322	ND	463	ND	NVG	NVG	NVG
Caprolactam	ND	ND	ND UJ	ND	ND UJ	133	NVG	NVG	NVG
Chrysene	223	**1,390**	**3,190**	ND	**2,780**	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	322	**903**	ND	**622**	ND	330	330	NVG
Dibenzofuran	35.3 J	59.6 J	97.6	ND	253	ND	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	150	ND	722	125	203	ND	NVG	NVG	NVG
Dimethyl phthalate	87.3	68.3 J	164	ND	108	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	701	2,520	4,540	ND	5,500	ND	100,000	100,000	NVG
Fluorene	53.4	95.3	226	ND	448	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND	NVG	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	75.6	**711**	**2,000**	ND	**1,320**	ND	500	500	NVG
Isophorone	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	ND	32.9 J	45.7 J	ND	134	ND	NVG	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	50.8	71.7	ND	241	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	598	1,740	3,240	ND	5,240	ND	100,000	100,000	NVG
Pyrene	421	2,150	4,350	ND	5,080	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	3,345.7	15,328.9	32,187.4	0	37,169.5	133	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

[1] = feet above mean sea level

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

TABLE 6 (Page 5 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-27	EP-28	EP-29	EP-30	EP-31	EP-XXX	EP-32	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]										
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	800	800	NVG
Phenol	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	15.2 J	ND	ND	ND	100,000	100,000	NVG
Atrazine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	72.6	20.6 J	26.6 J	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	69.2	21.1 J	21.5 J	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	74.7	22.3 J	26.3 J	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	50.7	14.4 J	17.9 J	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	45.9	ND UJ	15.0 J	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Carbazole	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Caprolactam	172	ND	92.5	106	ND UJ	176 J	91.4	NVG	NVG	NVG
Chrysene	ND	ND	ND	73.9	19.2 J	24.5 J	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	16.2 J	ND	ND	ND	330	330	NVG
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dimethyl phthalate	ND	38.2 J	ND	ND	ND	ND	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	ND	ND	ND	120	30.1 J	38.5	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	44.7	ND	14.8 J	ND	500	500	NVG
Isophorone	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	71.6	16.8 J	17.7 J	ND	100,000	100,000	NVG
Pyrene	ND	ND	ND	125	35	44.6	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	172.0	38.2	92.5	885.7	179.9	#VALUE!	91.4	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

EP-XXX is a duplicate of EP-31

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 6 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-33	EP-34	EP-35	EP-36	EP-37	EP-38	EP-39	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]										
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dichlorophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dimethylphenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrophenol	ND	ND UJ	NA	NA	NA	NA	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylphenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
3&4-Methylphenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitrophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitrophenol	ND	ND UJ	NA	NA	NA	NA	NA	NVG	NVG	NVG
Pentachlorophenol	ND	ND	NA	NA	NA	NA	NA	800	800	NVG
Phenol	ND	ND	NA	NA	NA	NA	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Acenaphthene	ND	ND	298	ND	45.8	16.2 J	16.8 J	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	169	33.3 J	36.1	100,000	100,000	NVG
Acetophenone	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Anthracene	ND	ND	52.7	ND	238	87.8	77.2	100,000	100,000	NVG
Atrazine	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzo(a)anthracene	20.0 J	ND	31.1 J	ND	826	225	214	1,000	1,000	NVG
Benzo(a)pyrene	18.5 J	ND	28.6 J	ND	795	214	218	1,000	1,000	NVG
Benzo(b)fluoranthene	17.3 J	ND	31.2 J	ND	609	191	143	1,000	1,000	NVG
Benzo(g,h,i)perylene	14.8 J	ND	25.4 J	ND	620	182	176	100,000	100,000	NVG
Benzo(k)fluoranthene	13.6 J	ND	21.1 J	ND	604	138	174	800	800	NVG
4-Bromophenyl phenyl ether	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Butyl benzyl phthalate	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
1,1'-Biphenyl	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzaldehyde	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Chloronaphthalene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloroaniline	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Carbazole	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Caprolactam	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chrysene	19.0 J	ND	60.3	ND	878	248	230	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	290	84.7	77.5	330	330	NVG
Dibenzofuran	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-butyl phthalate	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-octyl phthalate	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Diethyl phthalate	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dimethyl phthalate	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	565	NA	NA	NA	NA	NA	NVG	NVG	NVG
Fluoranthene	36	31.9	79.7	ND	1,460	523	435	100,000	100,000	NVG
Fluorene	ND	ND	376	ND	64.5	18.2 J	16.2 J	30,000	30,000	NVG
Hexachlorobenzene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorobutadiene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND	ND UJ	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachloroethane	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	12.7 J	ND	17.0 J	ND	**520**	150	143	500	500	NVG
Isophorone	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylnaphthalene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitroaniline	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
3-Nitroaniline	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitroaniline	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	30.3 J	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	NA	NA	NA	NA	NA	NVG	NVG	NVG
Phenanthrene	24.2 J	ND	845	ND	777	305	252	100,000	100,000	NVG
Pyrene	35.7	30.1 J	164	ND	1,390	492	403	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	ND	ND	ND	NA	NA	NA	NVG	NVG	NVG
Total SVOCs	211.8	627.0	2,029.8	0	9,316.6	2908.2	2611.8	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 7 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-40	EP-XXXX	EP-41	EP-42	EP-43	EP-44	EP-45	EP-46	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]											
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Semi Volatile Organics											
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	800	800	NVG
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	125	ND	ND	31.7 J	44.6	20,000	20,000	NVG
Acenaphthylene	ND	ND	33.2	235	19.9 J	ND	89.6	85.6	100,000	100,000	NVG
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Anthracene	ND UJ	50.9 J	62.1	631	40.6	ND	178	216	100,000	100,000	NVG
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzo(a)anthracene	59.7 J	169 J	157	**1,570**	106	ND	494	561	1,000	1,000	NVG
Benzo(a)pyrene	54.1 J	151 J	156	**1,510**	118	ND	482	512	1,000	1,000	NVG
Benzo(b)fluoranthene	43.8 J	127 J	123	**1,730**	104	ND	461	468	1,000	1,000	NVG
Benzo(g,h,i)perylene	56.3	103	107	1,070	91.3	ND	365	393	100,000	100,000	NVG
Benzo(k)fluoranthene	63	117	141	712	81.5	ND	319	349	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chrysene	78.1 J	185 J	188	**1,590**	126	ND	532	580	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	19.8 J	34.4 J	40.4	**507**	41.6	ND	173	180	330	330	NVG
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Fluoranthene	126 J	342 J	413	3,410	255	ND	1,150	1,420	100,000	100,000	NVG
Fluorene	ND	ND	29.4 J	155	ND	ND	43.9	40.6	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	42.1 J	89.6 J	90.9	**992**	80.2	ND	324	352	500	500	NVG
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Naphthalene	ND	ND	ND	40.4	ND	ND	16.9 J	19.9 J	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Phenanthrene	60.2 J	128 J	269	2,230	128	ND	655	753	100,000	100,000	NVG
Pyrene	127 J	336 J	336	3,420	212	ND	1,030	1,190	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Total SVOCs	#VALUE!	1,832.9	2,112.8	19,927.4	1404.1	0.0	6,345.1	7,164.7	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

EP-XXXX is a duplicate of EP-40

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 8 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-47	EP-48	EP-49	EP-50	EP-51	EP-52	EP-53	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]										
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	800	800	NVG
Phenol	NA	NA	NA	NA	NA	NA	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzo(a)anthracene	ND	32.2	15.9 J	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	16.7 J	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	21.2 J	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	21.3 J	ND	ND	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	22.8 J	ND	ND	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Carbazole	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chrysene	ND	40.6	17.3 J	ND	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Fluoranthene	ND	60.6	23.3 J	ND	ND	ND	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	14.4 J	ND	ND	ND	ND	ND	500	500	NVG
Isophorone	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Phenanthrene	ND	71.6	ND	ND	ND	ND	ND	100,000	100,000	NVG
Pyrene	ND	67.1	19.8 J	ND	ND	ND	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Total SVOCs								NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 9 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-54	EP-55	EP-56	EP-57	EP-58	EP-59	EP-60	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]										
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	800	800	NVG
Phenol	NA	NA	NA	NA	NA	NA	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	25.1 J	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	27.8 J	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	18.6 J	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	22.2 J	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	29.1 J	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Carbazole	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chrysene	ND	ND	ND	ND	ND	ND	32.5	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Fluoranthene	ND	ND	ND	ND	ND	ND	47.3	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	18.6 J	500	500	NVG
Isophorone	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	ND	ND	ND	28.0 J	100,000	100,000	NVG
Pyrene	ND	ND	ND	ND	ND	13.5 J	47	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Total SVOCs	0.0	0.0	0.0	0.0	0.0	13.5	296.2	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 10 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-61	EP-62	EP-XXXXX	EP-63	EP-64	Field Blank	Field Blank	Field Blank	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]											
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/12/2011	9/13/2011	9/13/2011			
Semi Volatile Organics											
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	800	800	NVG
Phenol	NA	NA	NA	NA	NA	ND	ND	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	48.3	16.7 J	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	37.6	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	43.9	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	38.5	ND	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	41.8	ND	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Carbazole	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Caprolactam	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Chrysene	ND	ND	ND	61.1	21.1 J	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Fluoranthene	ND	ND	ND	104	23.8 J	ND	ND	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	38.8	ND	ND	ND	ND	500	500	NVG
Isophorone	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	42.9	21.1 J	ND	ND	ND	100,000	100,000	NVG
Pyrene	ND	ND	ND	89.7	25.9 J	ND	ND	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	NA	NA	ND	ND	ND	NVG	NVG	NVG
Total SVOCs	0.0	0.0	0.0	546.6	108.6	0.0	0.0	0.0	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 11 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	BLR EP-1	BLR EP-2	BLR EP-3	BLR EP-4	BLR EP-5	HL EP-1	HL-EP-2	HL EP-3	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	6 feet	6 feet	6 feet	6 feet	12 feet	3 feet	3 feet	3 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/27/2011	7/27/2011	7/27/2011			
Semi Volatile Organics											
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	NA	ND R	NA	NA	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	NA	ND R	NA	NA	NA	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	800	800	NVG
Phenol	NA	NA	NA	NA	ND	NA	NA	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Acenaphthene	176	15.0 J	72.6	ND	351	26.9 J	36	29.2 J	20,000	20,000	NVG
Acenaphthylene	536	47.6	213	66.9	524	75.2	130	107	100,000	100,000	NVG
Acetophenone	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Anthracene	710	61.9	310	75.9	1030	114	139	131	100,000	100,000	NVG
Atrazine	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Benzo(a)anthracene	2680	259	1140	592	2670	516	615	592	1,000	1,000	NVG
Benzo(a)pyrene	2680	253	1180	523	2490	485	639	587	1,000	1,000	NVG
Benzo(b)fluoranthene	2230	257	1020	448	2320	483	567	585	1,000	1,000	NVG
Benzo(g,h,i)perylene	2180	203	949	348	1710	346	495	443	100,000	100,000	NVG
Benzo(k)fluoranthene	2130	188	890	404	1980	446	600	491	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	NA	217	NA	NA	NA	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	NA	86.8	NA	NA	NA	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Carbazole	NA	NA	NA	NA	535	NA	NA	NA	NVG	NVG	NVG
Caprolactam	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Chrysene	2640	261	1160	562	2910	564	667	624	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	698	63.8	316	81.4	511	126	160	156	330	330	NVG
Dibenzofuran	NA	NA	NA	NA	411	NA	NA	NA	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	NA	99.5	NA	NA	NA	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	NA	125	NA	NA	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	487	NA	NA	NA	NVG	NVG	NVG
Fluoranthene	4,550 a	435	1870	888	6,570 a	1030	1240	1080	100,000	100,000	NVG
Fluorene	346	17.0 J	168	ND	613	35.1	49	34.6	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	1910	175	828	309	1570	325	457	403	500	500	NVG
Isophorone	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	NA	327	NA	NA	NA	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Naphthalene	326	ND	64.2	ND	525	ND	28.0 J	18.6 J	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Phenanthrene	3,810 a	274	1340	282	7,030 a	629	705	540	100,000	100,000	NVG
Pyrene	4,630 a	458	1950	1100	6,220 a	875	1020	1030	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	NA	ND	NA	NA	NA	NVG	NVG	NVG
Total SVOCs	19,242.0	2,968.3	13,470.8	5680.2	21,492.3	6049.3	7519.0	6803.6	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 12 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	HL EP-4	HL EP-5	EP-XX	T001 EP-1	T001 EP-2	T001 EP-3	T001 EP-4	T001 EP-5	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	3 feet	6 feet	6 feet	3 feet	3 feet	3 feet	3 feet	6 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011			
Semi Volatile Organics											
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	ND R	NA	NA	NA	NA	ND R	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	ND R	NA	NA	NA	NA	ND R	NVG	NVG	NVG
2-Methylphenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Nitrophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
4-Nitrophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Pentachlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	800	800	NVG
Phenol	NA	NA	ND R	NA	NA	NA	NA	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Acenaphthene	15.6 J	381	76.5 R	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	112	794	135 R	ND	ND	23.8 J	22.2 J	ND	100,000	100,000	NVG
Acetophenone	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Anthracene	98.3	1260	207 R	ND	ND	16.1 J	20.3 J	ND	100,000	100,000	NVG
Atrazine	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Benzo(a)anthracene	493	4,630 a	752 R	25.4 J	14.9 J	69.9	79.8	ND	1,000	1,000	NVG
Benzo(a)pyrene	498	3,720 a	700 R	ND	13.9 J	71.2	81.8	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	486	3,960 a	738 R	ND	15.3 J	76.8	82.4	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	401	2450	524 R	ND	ND	62.9	70.6	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	443	2,900 a	598 R	ND	ND	54.6	69.3	ND	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Benzaldehyde	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
4-Chloroaniline	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Carbazole	NA	NA	192 R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Caprolactam	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Chrysene	523	4810	867 R	21.4 J	ND	74.2	88.8	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	129	924	186 R	ND	ND	16.4 J	18.2 J	ND	330	330	NVG
Dibenzofuran	NA	NA	56.6 J R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Diethyl phthalate	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	ND R	NA	NA	NA	NA	149	NVG	NVG	NVG
Fluoranthene	826	9,060 a	1570 R	24.6 J	22.9 J	114	154	ND	100,000	100,000	NVG
Fluorene	19.7 J	621	91.7 R	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Hexachloroethane	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	368	2290	486 R	ND	ND	50.2	58.5	ND	500	500	NVG
Isophorone	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
2-Nitroaniline	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
3-Nitroaniline	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
4-Nitroaniline	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Naphthalene	ND	477	61.1 R	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Phenanthrene	391	7,310 a	1,190 R	ND	ND	49.8	95.4	ND	100,000	100,000	NVG
Pyrene	850	8,400 a	1,430 R	27.1 J	22.0 J	112	142	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	ND R	NA	NA	NA	NA	ND	NVG	NVG	NVG
Total SVOCs	5,618.3	14,007.0	0.0	98.5	89.0	1432.7	983.3	149.0	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

EP-XX=Duplicate of T001 EP-5 at 6 feet

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 13 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	Field Blank	T002 North	T002 South	T002 East	T002 West	T002 Bottom	Excavation 1 North	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	NA	10 feet	10 feet	10 feet	10 feet	10 feet	12 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/27/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/18/2011			
Semi Volatile Organics										
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4-Chloro-3-methyl phenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4-Dichlorophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4-Dimethylphenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4-Dinitrophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4,6-Dinitro-o-cresol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2-Methylphenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
3&4-Methylphenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2-Nitrophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4-Nitrophenol	ND UJ	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Pentachlorophenol	ND	NA	NA	NA	NA	ND	NA	800	800	NVG
Phenol	ND	NA	NA	NA	NA	ND	NA	330	330	NVG
2,3,4,6-Tetrachlorophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4,5-Trichlorophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4,6-Trichlorophenol	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Butyl benzyl phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
1,1'-Biphenyl	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Benzaldehyde	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2-Chloronaphthalene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4-Chloroaniline	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Carbazole	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Caprolactam	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Chrysene	ND	34.3	ND	ND	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
bis(2-Chloroethyl)ether	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,4-Dinitrotoluene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2,6-Dinitrotoluene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
3,3'-Dichlorobenzidine	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Di-n-butyl phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Di-n-octyl phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Diethyl phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Dimethyl phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Hexachlorobutadiene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Hexachlorocyclopentadiene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Hexachloroethane	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	500	500	NVG
Isophorone	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2-Methylnaphthalene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
2-Nitroaniline	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
3-Nitroaniline	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
4-Nitroaniline	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
N-Nitrosodiphenylamine	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Phenanthrene	ND	92.1	ND	ND	ND	ND	ND	100,000	100,000	NVG
Pyrene	ND	66.4	ND	ND	ND	ND	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	ND	NA	NA	NA	NA	ND	NA	NVG	NVG	NVG
Total SVOCs	0.0	192.8	0.0	0	0.0	0.0	0.0	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 6 (Page 14 of 14)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	Excavation 1 South	Excavation 1 East	Excavation 1 West	Excavation 1 Bottom	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	12 feet	12 feet	12 feet	12 feet			
Matrix	Soil	Soil	Soil	Soil			
Date Sampled	8/18/2011	8/18/2011	8/18/2011	8/18/2011			
Semi Volatile Organics							
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
2-Chlorophenol	NA	NA	NA	ND	NVG	NVG	NVG
4-Chloro-3-methyl phenol	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dichlorophenol	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dimethylphenol	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dinitrophenol	NA	NA	NA	ND	NVG	NVG	NVG
4,6-Dinitro-o-cresol	NA	NA	NA	ND	NVG	NVG	NVG
2-Methylphenol	NA	NA	NA	ND	NVG	NVG	NVG
3&4-Methylphenol	NA	NA	NA	ND	NVG	NVG	NVG
2-Nitrophenol	NA	NA	NA	ND	NVG	NVG	NVG
4-Nitrophenol	NA	NA	NA	ND	NVG	NVG	NVG
Pentachlorophenol	NA	NA	NA	ND	800	800	NVG
Phenol	NA	NA	NA	ND	330	330	NVG
2,3,4,6-Tetrachlorophenol	NA	NA	NA	ND	NVG	NVG	NVG
2,4,5-Trichlorophenol	NA	NA	NA	ND	NVG	NVG	NVG
2,4,6-Trichlorophenol	NA	NA	NA	ND	NVG	NVG	NVG
Acenaphthene	ND	ND	ND	ND	20,000	20,000	NVG
Acenaphthylene	ND	ND	ND	ND	100,000	100,000	NVG
Acetophenone	NA	NA	NA	ND	NVG	NVG	NVG
Anthracene	ND	ND	ND	ND	100,000	100,000	NVG
Atrazine	NA	NA	NA	ND	NVG	NVG	NVG
Benzo(a)anthracene	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(a)pyrene	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	1,000	1,000	NVG
Benzo(g,h,i)perylene	ND	ND	ND	ND	100,000	100,000	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	800	800	NVG
4-Bromophenyl phenyl ether	NA	NA	NA	ND	NVG	NVG	NVG
Butyl benzyl phthalate	NA	NA	NA	ND	NVG	NVG	NVG
1,1'-Biphenyl	NA	NA	NA	ND	NVG	NVG	NVG
Benzaldehyde	NA	NA	NA	ND	NVG	NVG	NVG
2-Chloronaphthalene	NA	NA	NA	ND	NVG	NVG	NVG
4-Chloroaniline	NA	NA	NA	ND	NVG	NVG	NVG
Carbazole	NA	NA	NA	ND	NVG	NVG	NVG
Caprolactam	NA	NA	NA	39.7 J	NVG	NVG	NVG
Chrysene	ND	ND	ND	ND	1,000	1,000	NVG
bis(2-Chloroethoxy)methane	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Chloroethyl)ether	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Chloroisopropyl)ether	NA	NA	NA	ND	NVG	NVG	NVG
4-Chlorophenyl phenyl ether	NA	NA	NA	ND	NVG	NVG	NVG
2,4-Dinitrotoluene	NA	NA	NA	ND	NVG	NVG	NVG
2,6-Dinitrotoluene	NA	NA	NA	ND	NVG	NVG	NVG
3,3'-Dichlorobenzidine	NA	NA	NA	ND	NVG	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	ND	ND	330	330	NVG
Dibenzofuran	NA	NA	NA	ND	NVG	NVG	NVG
Di-n-butyl phthalate	NA	NA	NA	ND	NVG	NVG	NVG
Di-n-octyl phthalate	NA	NA	NA	ND	NVG	NVG	NVG
Diethyl phthalate	NA	NA	NA	71.2 J	NVG	NVG	NVG
Dimethyl phthalate	NA	NA	NA	ND	NVG	NVG	NVG
bis(2-Ethylhexyl)phthalate	NA	NA	NA	ND	NVG	NVG	NVG
Fluoranthene	ND	ND	47.3	ND	100,000	100,000	NVG
Fluorene	ND	ND	ND	ND	30,000	30,000	NVG
Hexachlorobenzene	NA	NA	NA	ND	NVG	NVG	NVG
Hexachlorobutadiene	NA	NA	NA	ND	NVG	NVG	NVG
Hexachlorocyclopentadiene	NA	NA	NA	ND UJ	NVG	NVG	NVG
Hexachloroethane	NA	NA	NA	ND	NVG	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	500	500	NVG
Isophorone	NA	NA	NA	ND	NVG	NVG	NVG
2-Methylnaphthalene	NA	NA	NA	ND	NVG	NVG	NVG
2-Nitroaniline	NA	NA	NA	ND	NVG	NVG	NVG
3-Nitroaniline	NA	NA	NA	ND	NVG	NVG	NVG
4-Nitroaniline	NA	NA	NA	ND	NVG	NVG	NVG
Naphthalene	ND	ND	ND	ND	12,000	12,000	NVG
Nitrobenzene	NA	NA	NA	ND	NVG	NVG	NVG
N-Nitroso-di-n-propylamine	NA	NA	NA	ND	NVG	NVG	NVG
N-Nitrosodiphenylamine	NA	NA	NA	ND	NVG	NVG	NVG
Phenanthrene	ND	ND	ND	ND	100,000	100,000	NVG
Pyrene	17.9 J	ND	36	ND	100,000	100,000	NVG
1,2,4,5,-Tetrachlorobenzene	NA	NA	NA	ND	NVG	NVG	NVG
Total SVOCs	17.9	0.0	83.3	110.9	NA	NA	500,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NVG=No Value Given

J=Analyte detected below quantitation limits

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

NA = Not Analyzed

TABLE 7 (Page 1 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-1(10)	EP-2	EP-3	EP-XX	EP-4	EP-5	EP-6	EP-7	EP-8	EP-9	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	94	4,200	NVG
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	200	NVG
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	13,000	NVG
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	8,900	NVG
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

Notes:

EP-XX is a duplicate of EP-3

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 2 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	0.95	1.8 J	ND	ND	ND	ND	ND	ND	ND	ND	94	4,200	NVG
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dieldrin	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	200	NVG
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	13,000	NVG
4,4'-DDE	1.2	1.4	ND	**3.4**	ND	ND	ND	ND	ND	ND	3.3	8,900	NVG
4,4'-DDT	**7.3**	**3.7**	1	4.2	1.2	ND	ND	ND	ND	ND	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 3 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	EP-26	EP-27	EP-28	EP-29	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	ND	ND	10.7 JN	58.7 J	ND	8.8	ND	ND	ND	ND	94	4,200	NVG
gamma-Chlordane	ND	ND	6.6	58.1	ND	6.8	ND	ND	ND	ND	NVG	NVG	NVG
Dieldrin	ND	ND	**7.2**	**68.6**	ND	**8.6**	ND	ND	ND	ND	5	200	NVG
4,4'-DDD	ND	ND	**6.2**	**106**	ND	**6.3**	ND	ND	ND	ND	3.3	13,000	NVG
4,4'-DDE	ND	ND	**26.2**	**230**	ND	**19**	ND	ND	ND	ND	3.3	8,900	NVG
4,4'-DDT	ND	ND	**88.6**	**848**	ND	**122**	ND	ND	ND	0.74	3.3	7,900	NVG
Endrin	ND	ND	ND	3.5 J	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 4 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-30	EP-31	EP-XXX	EP-32	EP-33	EP-34	EP-35	EP-36	EP-37	EP-38	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	10.2 J	2.1 J	94	4,200	NVG
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	10.6	2.4	NVG	NVG	NVG
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	**9.8**	2.1	5	200	NVG
4,4'-DDD	ND	ND	ND	ND	ND	ND	2.5 J	ND	**14.7 J**	**4 J**	3.3	13,000	NVG
4,4'-DDE	ND	ND	ND	ND	ND	ND	1.7	ND	**14.6**	**6.3**	3.3	8,900	NVG
4,4'-DDT	1.6	2.1	1.2 J	ND	1.5	ND	**10.5 J**	1	**160 J**	**46.4**	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	2.2 J	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 5 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-39	EP-40	EP-XXXX	EP-41	EP-42	EP-43	EP-44	EP-45	EP-46	EP-47	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	2.0 JN	ND	ND	ND	9.6 J	ND	ND	1.6 J	1.5	ND	94	4,200	NVG
gamma-Chlordane	1.9	ND	ND	ND	10.2	ND	ND	2.0 J	1.4	ND	NVG	NVG	NVG
Dieldrin	1.9	ND	ND	ND	15.1	ND	ND	4.4	**3.9**	ND	5	200	NVG
4,4'-DDD	4.6 J	ND	ND	1.2 J	29.1 J	1.2 J	ND	5.9 J	**3.4 J**	ND	3.3	13,000	NVG
4,4'-DDE	9.7	ND	1.1 JN	1.5 JN	36.4	2.6	ND	5.1	**5.4**	ND	3.3	8,900	NVG
4,4'-DDT	53.5	4.8 J	6.8 J	10.6	188	11.5	ND	35.2	**38.4**	ND	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-XXXX is a duplicate of EP-40

TABLE 7 (Page 6 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-48	EP-49	EP-50	EP-51	EP-52	EP-53	EP-54	EP-55	EP-56	EP-57	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Pesticides													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	94	4,200	NVG
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	200	NVG
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	13,000	NVG
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	8,900	NVG
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 7 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-58	EP-59	EP-60	EP-61	EP-62	EP-XXXXX	EP-63	EP-64	Field Blank	Field Blank	Field Blank	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]														
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	AQ	AQ	AQ			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/12/2011	9/13/2011	9/13/2011			
Pesticides														
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	97	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	480	NVG
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36	360	NVG
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	100,000	NVG
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,300	NVG
alpha-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	94	4,200	NVG
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	200	NVG
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	13,000	NVG
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	8,900	NVG
4,4'-DDT	ND	2.3	ND	ND	ND	ND	1.4	ND	ND	ND	ND	3.3	7,900	NVG
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	11,000	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	24,000	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	42	2,100	NVG
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-XXXXX is a duplicate of EP-62

TABLE 7 (Page 8 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	BLR EP-1	BLR EP-2	BLR EP-3	BLR EP-4	BLR EP-5	HL EP-1	HL-EP-2	HL EP-3	HL EP-4	HL EP-5	EP-XX	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	6 feet	6 feet	6 feet	6 feet	12 feet	3 feet	3 feet	3 feet	3 feet	6 feet	6 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011			
Pesticides														
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	5	97	NVG
alpha-BHC	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	20	480	NVG
beta-BHC	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	36	360	NVG
delta-BHC	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	40	100,000	NVG
gamma-BHC (Lindane)	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	1,300	NVG
alpha-Chlordane	NA	NA	NA	NA	42.8 J	NA	NA	NA	NA	NA	ND R	94	4,200	NVG
gamma-Chlordane	NA	NA	NA	NA	41.4	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG
Dieldrin	NA	NA	NA	NA	65.3	NA	NA	NA	NA	NA	ND R	5	200	NVG
4,4'-DDD	NA	NA	NA	NA	205	NA	NA	NA	NA	NA	ND R	3.3	13,000	NVG
4,4'-DDE	NA	NA	NA	NA	216	NA	NA	NA	NA	NA	ND R	3.3	8,900	NVG
4,4'-DDT	NA	NA	NA	NA	1190	NA	NA	NA	NA	NA	2.0 b	3.3	7,900	NVG
Endrin	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	14	11,000	NVG
Endosulfan sulfate	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	2,400	24,000	NVG
Endrin aldehyde	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG
Endosulfan-I	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	2,400	24,000	NVG
Endosulfan-II	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	2,400	24,000	NVG
Heptachlor	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	42	2,100	NVG
Heptachlor epoxide	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG
Methoxychlor	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG
Endrin ketone	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG
Toxaphene	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-XX=Duplicate of T001 EP-5 at 6 f

TABLE 7 (Page 9 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	T001 EP-1	T001 EP-2	T001 EP-3	T001 EP-4	T001 EP-5	Field Blank	T002 North	T002 South	T002 East	T002 West	T002 Bottom	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth	3 feet	3 feet	3 feet	3 feet	6 feet	NA	10 feet	10 feet	10 feet	10 feet	10 feet			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011			
Pesticides														
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	5	97	NVG
alpha-BHC	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	20	480	NVG
beta-BHC	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	36	360	NVG
delta-BHC	NA	NA	NA	NA	29.8	ND	NA	NA	NA	NA	ND	40	100,000	NVG
gamma-BHC (Lindane)	NA	NA	NA	NA	1.9 JN	ND	NA	NA	NA	NA	ND	100	1,300	NVG
alpha-Chlordane	NA	NA	NA	NA	5.3 a	ND	NA	NA	NA	NA	ND	94	4,200	NVG
gamma-Chlordane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Dieldrin	NA	NA	NA	NA	10.8	ND	NA	NA	NA	NA	ND	5	200	NVG
4,4'-DDD	NA	NA	NA	NA	2.0 JN	ND	NA	NA	NA	NA	ND	3.3	13,000	NVG
4,4'-DDE	NA	NA	NA	NA	9.7	ND	NA	NA	NA	NA	ND	3.3	8,900	NVG
4,4'-DDT	NA	NA	NA	NA	27.7	ND	NA	NA	NA	NA	ND	3.3	7,900	NVG
Endrin	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	14	11,000	NVG
Endosulfan sulfate	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	2,400	24,000	NVG
Endrin aldehyde	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Endosulfan-I	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	2,400	24,000	NVG
Endosulfan-II	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	2,400	24,000	NVG
Heptachlor	NA	NA	NA	NA	4.4	ND	NA	NA	NA	NA	ND	42	2,100	NVG
Heptachlor epoxide	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Methoxychlor	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Endrin ketone	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG
Toxaphene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 10 of 10)

Validated Analytical Results for Pesticides in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID Sample Depth Matrix Date Sampled	Excavation 1 South 12 feet Soil 8/18/2011	Excavation 1 East 12 feet Soil 8/18/2011	Excavation 1 West 12 feet Soil 8/18/2011	Excavation 1 Bottom 12 feet Soil 8/18/2011	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	**Track 4 Site Specific Soil Cleanup Objectives
Pesticides							
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aldrin	NA	NA	NA	ND	5	97	NVG
alpha-BHC	NA	NA	NA	ND	20	480	NVG
beta-BHC	NA	NA	NA	ND	36	360	NVG
delta-BHC	NA	NA	NA	ND	40	100,000	NVG
gamma-BHC (Lindane)	NA	NA	NA	ND	100	1,300	NVG
alpha-Chlordane	NA	NA	NA	ND	94	4,200	NVG
gamma-Chlordane	NA	NA	NA	ND	NVG	NVG	NVG
Dieldrin	NA	NA	NA	ND	5	200	NVG
4,4'-DDD	NA	NA	NA	ND	3.3	13,000	NVG
4,4'-DDE	NA	NA	NA	ND	3.3	8,900	NVG
4,4'-DDT	NA	NA	NA	ND	3.3	7,900	NVG
Endrin	NA	NA	NA	ND	14	11,000	NVG
Endosulfan sulfate	NA	NA	NA	ND	2,400	24,000	NVG
Endrin aldehyde	NA	NA	NA	ND	NVG	NVG	NVG
Endosulfan-I	NA	NA	NA	ND	2,400	24,000	NVG
Endosulfan-II	NA	NA	NA	ND	2,400	24,000	NVG
Heptachlor	NA	NA	NA	ND	42	2,100	NVG
Heptachlor epoxide	NA	NA	NA	ND	NVG	NVG	NVG
Methoxychlor	NA	NA	NA	ND	NVG	NVG	NVG
Endrin ketone	NA	NA	NA	ND	NVG	NVG	NVG
Toxaphene	NA	NA	NA	ND	NVG	NVG	NVG

ND=Indicates the compound was analyzed for but not detected.

All concentrations are reported in micrograms per kilogram (mg/kg) or parts per billion.

NVG=No Value Given

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectiv

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 8 (Page 1 of 8)

Validated Analytical Results for PCBs in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-1(10)	EP-2	EP-3	EP-XX	EP-4	EP-5	EP-6	EP-7	EP-8	EP-9	EP-10	*Part 375 Soil Cleanup Unrestricted Use	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011		
PCBs													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1268	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND= Indicates the compound was analyzed for but not detected.

NA=Not Applicable

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

EP-XX=Duplicate of EP-3

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 2 of 8)

Validated Analytical Results for PCBs in Soil Samples
Courtlandt Crescent
383 East 162nd Street, Bronx, New York

Sample ID	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	*Part 375 Soil Cleanup Unrestricted Use	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011		
PCBs													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1268	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND= Indicates the compound was analyzed for but not detected. *NA=Not Applicable*

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 3 of 8)

Validated Analytical Results for PCBs in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-22	EP-23	EP-24	EP-25	EP-26	EP-27	EP-28	EP-29	EP-30	EP-31	EP-XXX	*Part 375 Soil Cleanup Unrestricted Use	**Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011		
PCBs													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1268	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG
Aroclor 1262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

EP-XXX is a duplicate of EP-31

ND = Indicates the compound was analyzed for but not detected.

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 4 of 8)

Validated Analytical Results for PCBs in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-32	EP-33	EP-34	Field Blank	*Part 375 Soil Cleanup	**Track 4 Site Specific
Sample Depth[1]						
Matrix	Soil	Soil	Soil	Soil	Unrestricted	Soil Cleanup
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	Use	Objectives
PCBs						
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	ND	ND	ND	ND	100	NVG
Aroclor 1221	ND	ND	ND	ND	100	NVG
Aroclor 1232	ND	ND	ND	ND	100	NVG
Aroclor 1242	ND	ND	ND	ND	100	NVG
Aroclor 1248	ND	ND	ND	ND	100	NVG
Aroclor 1254	ND	ND	ND	ND	100	NVG
Aroclor 1260	ND	ND	ND	ND	100	NVG
Aroclor 1268	ND	ND	ND	ND	100	NVG
Aroclor 1262	ND	ND	ND	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND = Indicates the compound was analyzed for but not detected.

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 5 of 8)

Validated Analytical Results for PCBs in Soil Samples
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Sample ID	BLR EP-1	BLR EP-2	BLR EP-3	BLR EP-4	BLR EP-5	HL EP-1	HL-EP-2	HL EP-3	HL EP-4	HL EP-5	EP-XX	*Part 375	**Track 4
Sample Depth	6 feet	6 feet	6 feet	6 feet	12 feet	3 feet	3 feet	3 feet	3 feet	6 feet	6 feet	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Unrestricted	Soil Cleanup
Date Sampled	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	Use	Objectives
PCBs													
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1221	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1232	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1242	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1248	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1254	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1260	NA	NA	NA	NA	87.6 c	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1268	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG
Aroclor 1262	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND R	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND= Indicates the compound was analyzed for but not detected.

NA=Not Applicable

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

EP-XX=Duplicate of HL EP-5 at 6 feet

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 6 of 8)

Validated Analytical Results for PCBs in Soil Samples

Courtlandt Crescent

383 East 162nd Street

Bronx, New York

Sample ID	T001 EP-1	T001 EP-2	T001 EP-3	T001 EP-4	T001 EP-5	Field Blank	*Part 375	**Track 4
Sample Depth	3 feet	3 feet	3 feet	3 feet	6 feet	NA	Track 1	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil Cleanup	Soil Cleanup
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	Objectives	Objectives
PCBs								
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	NA	NA	NA	NA	ND	ND	100	NVG
Aroclor 1221	NA	NA	NA	NA	ND	ND	100	NVG
Aroclor 1232	NA	NA	NA	NA	ND	ND	100	NVG
Aroclor 1242	NA	NA	NA	NA	ND	ND	100	NVG
Aroclor 1248	NA	NA	NA	NA	**757 c**	ND	100	NVG
Aroclor 1254	NA	NA	NA	NA	**430 c**	ND	100	NVG
Aroclor 1260	NA	NA	NA	NA	**278 c**	ND	100	NVG
Aroclor 1268	NA	NA	NA	NA	ND	ND	100	NVG
Aroclor 1262	NA	NA	NA	NA	ND	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

NA=Not Applicable

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

c = Reported from 2nd signal. %D of end check (ECC) on 1st signal excess method criteria (15 %) so using for confirmation only

TABLE 8 (Page 7 of 8)

Validated Analytical Results for PCBs in Soil Samples

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Sample ID	T002 North	T002 South	T002 East	T002 West	T002 Bottom	*Part 375	**Track 4
Sample Depth	10 feet	10 feet	10 feet	10 feet	10 feet	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Unrestricted	Soil Cleanup
Date Sampled	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	Use	Objectives
PCBs							
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	NA	NA	NA	NA	ND	100	NVG
Aroclor 1221	NA	NA	NA	NA	ND	100	NVG
Aroclor 1232	NA	NA	NA	NA	ND	100	NVG
Aroclor 1242	NA	NA	NA	NA	ND	100	NVG
Aroclor 1248	NA	NA	NA	NA	ND	100	NVG
Aroclor 1254	NA	NA	NA	NA	ND	100	NVG
Aroclor 1260	NA	NA	NA	NA	ND	100	NVG
Aroclor 1268	NA	NA	NA	NA	ND	100	NVG
Aroclor 1262	NA	NA	NA	NA	ND	100	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

NA=Not Applicable

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

TABLE 8 (Page 8 of 8)
Validated Analytical Results for PCBs in Soil Samples
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Sample ID Sample Depth Matrix Date Sampled	Excavation 1 South 12 feet Soil 8/18/2011	Excavation 1 East 12 feet Soil 8/18/2011	Excavation 1 West 12 feet Soil 8/18/2011	Excavation 1 Bottom 12 feet Soil 8/18/2011	*Part 375 Soil Cleanup Unrestricted Use	**Track 4 Site Specific Soil Cleanup Objectives
PCBs						
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Aroclor 1016	NA	NA	NA	ND	100	NVG
Aroclor 1221	NA	NA	NA	ND	100	NVG
Aroclor 1232	NA	NA	NA	ND	100	NVG
Aroclor 1242	NA	NA	NA	ND	100	NVG
Aroclor 1248	NA	NA	NA	ND	100	NVG
Aroclor 1254	NA	NA	NA	ND	100	NVG
Aroclor 1260	NA	NA	NA	ND	100	NVG
Aroclor 1268	NA	NA	NA	ND	100	NVG
Aroclor 1262	NA	NA	NA	ND	100	NVG

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
NA=Not Analyzed
Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

TABLE 9 (Page 1 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx. New York

Sample ID	EP-1 (10)	EP-2 (10)	EP-3	EP-XX	EP-4	EP-5	EP-6	EP-7	EP-8	EP-9	EP-10	EP-11	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	feet	feet													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Metals															
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	12,300	5,040	5,250	5,750	11,000	13,600	4,930	3,080	3,360	5,700	2,540	14,300	NVG	NVG	NVG
Antimony	<2.4 UJ	<2.3 UJ	<2.4 UJ	<2.3 UJ	<2.5 UJ	<2.3 UJ	<2.5 UJ	<2.2 UJ	<2.3 UJ	<2.4 UJ	<2.6 UJ	<2.4 UJ	NVG	NVG	NVG
Arsenic	<2.4 UJ	<2.3 UJ	<2.4 UJ	<2.3 UJ	<2.5 UJ	<2.3 UJ	<2.5 UJ	<2.2 UJ	<2.3 UJ	<2.4 UJ	<2.6	2.7	13	16	16
Barium	68.2	24.2	25.8	29.2	57.6	63.3	<25	<22	<23	24.3	<26	107	350	400	400
Beryllium	0.68	0.23	<0.24	<0.23	0.49	0.73	<0.25	<0.22	0.29	0.25	<0.26	0.66	7.2	72.0	590
Cadmium	<0.59 UJ	<0.57 UJ	<0.59 UJ	<0.57 UJ	<0.63 UJ	<0.59 UJ	<0.62 UJ	<0.56 UJ	<0.56 UJ	<0.59 UJ	<0.66	<0.61	2.5	4.3	9.3
Calcium	4200 J	999 J	1250 J	1210 J	14300 J	2610 J	1460 J	1530 J	1360 J	2070 J	10,700	4,680	NVG	NVG	NVG
Chromium	**33.9**	15	16	16.9	24.6	**34**	17.4	9.7	16.5	20.9	15.5	**35**	30	110	1,500
Cobalt	8.4	<5.7	<5.9	<5.7	7	9.2	<6.2	<5.6	<5.6	<5.9	<6.6	10.5	NVG	NVG	NVG
Copper	25.1 J	10.5 J	22.7 J	20.2 J	26.7 J	24.5 J	5.2 J	4.6 J	11.7 J	8.4 J	9.9	27.4	50	270	270
Iron	18,700	9,300	7,610	8,030	21,700	21,400	7,780	6,550	13,700	13,600	11,800	21,200	NVG	NVG	NVG
Lead	21.7	3.4	9.5	9.2	22.5	46.3	3	3	2.6	2.9	3	**93.1**	63	400	1,000
Magnesium	6,020	1,940	1,800	1,950	4,620	5,770	1,700	1,510	1,430	3,190	6,840	5,760	NVG	NVG	NVG
Manganese	240	233	117	106	286	462	152	103	195	183	120 J	544 J	1,600	2,000	10,000
Mercury	0.041	<0.036	<0.041	<0.037	0.053	0.046	<0.040	<0.036	<0.036	<.038	<0.042	**0.22**	0.18	0.81	2.8
Nickel	18.1	12.3	11.8	12.7	15.7	19.8	9	6.8	7.9	12.6	8.7	21.8	30	310	310
Potassium	2,710	<1,100	<1,200	<1,100	1,500	1,950	<1,200	<1,100	<1,100	<1,200	<1,300	2,010	NVG	NVG	NVG
Selenium	<2.4	<2.3	<2.4	<2.3	<2.5	<2.3	<2.5	<2.2	<2.3	<2.4	<2.6	<2.4	3.9	180	1,500
Silver	<0.59	<0.57	<0.59	<0.57	<0.63	<0.59	<0.62	<0.56	<0.56	<0.59	<0.66	<0.61	2	180	1,500
Sodium	<1,200	<1,100	<1,200	<1,100	<1,300	<1,200	<1,200	<1,100	<1,100	<1,200	<1,300	<1,200	NVG	NVG	NVG
Thallium	<1.2	<1.1	<1.2	<1.1	<1.3	<1.2	<1.2	<1.1	<1.1	<1.2	<1.3	<1.2	NVG	NVG	NVG
Vanadium	35.7	17.2	12.9	13.4	28.6	40.1	17.5	11.1	18.3	22.1	15.7	38.4	NVG	NVG	NVG
Zinc	86.8 J	19.2 J	49.1 J	48.6 J	65.9 J	63.4 J	16.9 J	12.3 J	18.9 J	27.7 J	15.6	99.2	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

ND - Not detected

d= Elevated detection limit due to dilution required for high interfering element.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 9 (Page 2 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx. New York

Sample ID	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]	feet	feet												
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011	9/12/2011			
Metals														
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	16,100	4,350	2,480	3,290	3,370	3,930	3,750	2,710	5,780	12,900	9,520	NVG	NVG	NVG
Antimony	<2.4 UJ	<2.3 UJ	<2.5 UJ	<2.7 UJ	<2.6 UJ	<2.2 UJ	<2.6 UJ	<2.2 UJ	<2.5 UJ	<2.4 UJ	<2.5 UJ	NVG	NVG	NVG
Arsenic	2.9	<2.3	<2.5	<2.7	<2.6	<2.2	3.1	8.5	<2.5	2.4 J	<2.5 UJ	13	16	16
Barium	75.6	52.8	<25	<27	44	22.9	32.1	<22	31	61.2	467	350	400	400
Beryllium	0.66	0.25	<0.25	<0.27	<0.26	<0.22	<0.26	<0.22	0.28	0.54	0.55	7.2	72.0	590
Cadmium	<0.61	0.59	<0.64	<0.67	<0.66	<0.54	<0.66	<0.56	<0.61	<0.59 UJ	<0.62 UJ	2.5	4.3	9.3
Calcium	2,140	3,360	1,710	1,210	1,370	1,110	1,560	985	1,580	2740 J	26700 J	NVG	NVG	NVG
Chromium	**32.1**	17.1	7.6	13	16.5	13.8	19.7	24.1	27.5	29.6	23	30	110	1,500
Cobalt	10.6	<5.7	<6.4	<6.7	<6.6	<5.4	<6.6	<5.6	<6.1	8.5	7.1	NVG	NVG	NVG
Copper	21.2	10.4	5.7	8.7	7.5	6.5	14.6	31.3	12.9	21.3 J	25.8 J	50	270	270
Iron	21,200	14,600	6,420	10,300	12,000	8,470	21,800	33,900	19,100	21,000	16,100	NVG	NVG	NVG
Lead	18.7	14.8	3.5	<2.7	<2.6	2.2	3.1	2.6	5.3	**78.4**	**93.4**	63	400	1,000
Magnesium	6,770	2,410	1,310	1,390	1,290	1,960	1,670	912	2,860	5,790	11,300	NVG	NVG	NVG
Manganese	666 J	366 J	178 J	116 J	589 J	252 J	400 J	284 J	307 J	386	441	1,600	2,000	10,000
Mercury	0.059	<0.038	<0.042	<0.043	<0.041	<0.036	<0.045	<0.038	<0.039	<0.039	0.13	0.18	0.81	2.8
Nickel	22.9	9.6	6.5	8.1	11.3	9.4	11.7	11.4	11.9	19.7	14.7	30	310	310
Potassium	1,990	<1,100	<1,300	<1,300	<1,300	<1,100	<1,300	<1,100	<1,200	1,800	1,450	NVG	NVG	NVG
Selenium	<2.4	<2.3	<2.5	<2.7	<2.6	<2.2	<2.6	<2.2	<2.5	<2.4	<2.5	3.9	180	1,500
Silver	<0.61	<0.57	<0.64	<0.67	<0.66	<0.54	<0.66	<0.56	<0.61	0.64	<0.62	2	180	1,500
Sodium	<1,200	<1,100	<1,300	<1,300	<1,300	<1,100	<1,300	<1,100	<1,200	<1,200	<1,200	NVG	NVG	NVG
Thallium	<1.2	<1.1	<1.3	<1.3	<1.3	<1.1	<1.3	<1.1	<1.2	<1.2	<1.2	NVG	NVG	NVG
Vanadium	38.7	17.5	9.2	12.1	16.1	16.2	20.9	35.3	29	35.7	26.7	NVG	NVG	NVG
Zinc	60.3	29.7	12.5	13.3	14.4	17.9	19.3	19.5	29	67.1 J	**226 J**	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

ND - Not detected

d= Elevated detection limit due to dilution required for high interfering element.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 9 (Page 3 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx. New York

Sample ID	EP-23	EP-24	EP-25	EP-26	EP-27	EP-28	EP-29	EP-30	EP-31	EP-XXX	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/12/2011	9/12/2011	9/12/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Metals													
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	8,510	6,210	7,160	5,040	4,030	2,360	7,840	13,400	5,700	10,800	NVG	NVG	NVG
Antimony	<3.0 UJ	<2.3 UJ	<2.3 UJ	<2.6 UJ	<2.2 UJ	<2.4 UJ	<2.3 UJ	<2.3 UJ	<2.2 UJ	<2.2	NVG	NVG	NVG
Arsenic	7.6 J	<2.3 UJ	3.4 J	<2.6	<2.2	<2.4	<2.3	<2.3	<2.2	<2.2	13	16	16
Barium	**3,880**	42.1	**784**	35.6	25	<24	58.1	83.2	55.8	74.3	350	400	400
Beryllium	0.68	0.29	0.43	0.26	0.24	<0.24	0.33	0.7	0.29	0.62	7.2	72.0	590
Cadmium	6.7 J	<0.58 UJ	0.87 J	<0.65	<0.56	<0.59	<0.57	<0.59	<0.55	<0.56	2.5	4.3	9.3
Calcium	152000 J	2350 J	61200 J	1,680	1,370	1,330	3,150	4,810	16800 J	3450 J	NVG	NVG	NVG
Chromium	**33.8**	18.3	17	19.7	15.1	11.7	22.7	**30.3**	13.5	28.1	30	110	1,500
Cobalt	11.1	<5.8	<5.7	<6.5	<5.6	<5.9	5.7	8.2	<5.5 UJ	7.4 J	NVG	NVG	NVG
Copper	**122 J**	10.9 J	**83 J**	7.8	6.4	3.8	13.2	21.2	9.9	19.6	50	270	270
Iron	18,800	12,300	12,500	13,400	10,900	6,750	18,500	23,600	8960 J	22000 J	NVG	NVG	NVG
Lead	**2,360**	6.1	**204**	3.6	4.1	<2.4	18.9	17.4	4.7	16.1	63	400	1,000
Magnesium	52,600	3,360	24,200	2,350	1,900	1,290	3,790	5,970	12700 J	5390 J	NVG	NVG	NVG
Manganese	582	348	390	385 J	218 J	132 J	381 J	293 J	381 J	318	1,600	2,000	10,000
Mercury	**0.41**	<0.039	**0.34**	**0.36**	<0.036	<0.039	<0.036	0.077	<0.036 UJ	0.085 J	0.18	0.81	2.8
Nickel	13.9	12.3	11.8	12.7	10.1	7	14.7	20.5	10.1	18.6	30	310	310
Potassium	<1,500	1,240	1,120	<1,300	<1,100	<1,200	1,180	3,160	<1,100 UJ	2460 J	NVG	NVG	NVG
Selenium	**4.8**	<2.3	<2.3	<2.6	<2.2	<2.4	<2.3	<2.3	<2.2	<2.2	3.9	180	1,500
Silver	1.9	<0.58	<0.57	<0.65	<0.56	<0.59	<0.57	<0.59	<0.55	<0.56	2	180	1,500
Sodium	<1,500	<1,200	<1,100	<1,300	<1,100	<1,200	<1,100	<1,200	<1,100	<1,100	NVG	NVG	NVG
Thallium	<3.0	<1.2	<1.1	<1.3	<1.1	<1.2	<1.1	<1.2	<1.1	<1.1	NVG	NVG	NVG
Vanadium	24.2	20.8	21.8	23.9	17.9	9.3	24.9	35.5	15	35.5	NVG	NVG	NVG
Zinc	2190 J	25.9 J	480 J	22.7	17.9	11.7	40.7	59.3	22.5	55.4	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

ND - Not detected

EP-XXX is a duplicate of EP-31

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

Boxed indicates that value is above Track 4 Site Specific Soil Cleanup Objectives.

TABLE 9 (Page 4 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx. New York

Sample ID	EP-32	EP-33	EP-34	EP-35	EP-36	EP-37	EP-38	EP-39	EP-40	EP-XXXX	EP-41	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]														
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Metals														
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	3,730	5,800	5,890	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Antimony	<2.1 UJ	<2.1 UJ	<2.1	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Arsenic	<2.1	<2.1	<2.1	<2.3	2.7	<2.5	2.6	<2.4	3	2.9	3.3	13	16	16
Barium	26.1	35.9	45.5	50	59	**897**	241	341	76.8	73.3	75.4	350	400	400
Beryllium	<0.21	0.23	<0.21	NA	NA	NA	NA	NA	NA	NA	NA	7.2	72.0	590
Cadmium	<0.52	<0.51	<0.53	<0.57	<0.62	<0.62	<0.63	<0.60	<0.64	<0.64	<0.56	2.5	4.3	9.3
Calcium	1,750	1,690	1,950	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chromium	13.8	15.1	15.6	17.2 J	20.9 J	15.3 J	21.5 J	15.8 J	35.3 J	24.9 J	23.0 J	30	110	1,500
Cobalt	<5.2	<5.1	<5.3	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Copper	5.8	8.6	10.7	NA	NA	NA	NA	NA	NA	NA	NA	50	270	270
Iron	8,430	11,600	11,100	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Lead	2.1	5.5	14.5	14.2 J	5.3 J	**177 J**	**82.4 J**	**85.1 J**	40.1 J	33.5 J	62.4 J	63	400	1,000
Magnesium	1,930	2,950	2,490	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Manganese	220 J	229 J	192	NA	NA	NA	NA	NA	NA	NA	NA	1,600	2,000	10,000
Mercury	<0.034	0.045	0.062	<0.037	<0.042	0.14	0.089	0.045	0.06	0.048	0.051	0.18	0.81	2.8
Nickel	9.1	10.9	10.2	NA	NA	NA	NA	NA	NA	NA	NA	30	310	310
Potassium	<1,000	1,070	1,310	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Selenium	<2.1	<2.1	<2.1	<2.3	<2.5	<5.0 c	<2.5	<2.4	<2.6	<2.6	<2.2	3.9	180	1,500
Silver	<0.52	<0.51	<0.53	<0.57	<0.62	<0.62	<0.63	<0.60	<0.64	<0.64	<0.56	2	180	1,500
Sodium	<1000	<1000	<1100	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Thallium	<1.0	<1.0	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Vanadium	13	17.3	17.1	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Zinc	15.6	27.1	27.5	NA	NA	NA	NA	NA	NA	NA	NA	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

ND - Not detected

EP-XXXX is a duplicate of EP-40

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil C.*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

Boxed indicates that value is above Track 4 Site Specific Soil Cleanup Objectives.

TABLE 9 (Page 5 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-42	EP-42 RE	EP-43	EP-44	EP-45	EP-46	EP-47	EP-48	EP-49	EP-50	EP-51	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]														
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/20/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Metals														
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Arsenic	5	3.7	4.6	3.6	4.5	2.8	<2.2	<2.2	<2.4	3.2	<2.4	13	16	16
Barium	**689**	146 J	110	124	252	**391**	34.2	42.7	53.3	42.5	36.4	350	400	400
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2	72.0	590
Cadmium	<0.64	<0.63	<0.57	<0.60	<0.59	<0.63	<0.56	<0.54	<0.61	<0.58	<0.59	2.5	4.3	9.3
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chromium	22.2 J	35.4 J	23.2 J	32.7 J	22.4 J	22.1 J	11.6 J	13.0 J	22.3 J	19.9 J	19.0 J	30	110	1,500
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	270	270
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Lead	**368 J**	8.9	37.8 J	5.7 J	**204 J**	**365 J**	15.8 J	19.4 J	16.4 J	5.1 J	2.8 J	63	400	1,000
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600	2,000	10,000
Mercury	**0.28**	<0.040	0.11	<0.039	**0.29**	**0.66**	<0.034	0.057	<0.040	<0.035	<0.039	0.18	0.81	2.8
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30	310	310
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Selenium	<2.6	<2.5	<2.3	<2.4	<2.4	<2.5	<2.2	<2.2	<2.4	<2.3	<2.4	3.9	180	1,500
Silver	<0.64	<0.63	<0.57	<0.60	<0.59	<0.63	<0.56	<0.54	<0.61	<0.58	<0.59	2	180	1,500
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

ND - Not detected

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

Boxed indicates that value is above Track 4 Site Specific Soil Cleanup Objectives.

TABLE 9 (Page 6 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx. New York

Sample ID	EP-52	EP-53	EP-54	EP-55	EP-56	EP-57	EP-58	EP-59	EP-60	EP-61	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]													
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011			
Metals													
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Arsenic	<2.2	2.5	2.5	<2.1	<2.5	<2.3	<2.5	2.9	2.6	<2.3	13	16	16
Barium	43	76.6	57	37.8	<25	<23	73.1	79.4	82.7	<23 UJ	350	400	400
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2	72.0	590
Cadmium	<0.55	<0.61	<0.55	<0.54	<0.62	<0.57	<0.63	<0.59	<0.54	<0.58	2.5	4.3	9.3
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Chromium	22.1 J	26.1 J	23.8 J	13.9 J	13.0 J	14.2 J	28.2 J	33.3 J	29.0 J	13.0 J	30	110	1,500
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	270	270
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Lead	5.8 J	3.2 J	4.8	13.7	3.8	3.3	7.4	32.4	11.5	2.4	63	400	1,000
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600	2,000	10,000
Mercury	<0.036	<0.038	<0.035	<0.036	<0.039	<0.035	<0.042	0.084	0.059	<0.039	0.18	0.81	2.8
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30	310	310
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Selenium	<2.2	<2.4	<2.2	<2.1	<2.5	<2.3	<2.5	<2.4	<2.2	<2.3	3.9	180	1,500
Silver	<0.55	<0.61	<0.55	<0.54	<0.62	<0.57	<0.63	<0.59	<0.54	<0.58	2	180	1,500
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NVG	NVG	NVG
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

ND - Not detected

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Re*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 9 (Page 7 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent

383 East 162nd Street, Bronx, New York

Sample ID	EP-62	EP-XXXXX	EP-63	EP-64	Field Blank	Field Blank	Field Blank	Part 375 - Track 1 Soil Cleanup Objectives*	Part 375 - Track 2 Soil Cleanup Objectives**	***Track 4 Site Specific Soil Cleanup Objectives
Sample Depth[1]										
Matrix	Soil	Soil	Soil	Soil	AQ	AQ	AQ			
Date Sampled	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/12/2011	9/13/2011	9/13/2011			
Metals										
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/L	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	NA	NA	NA	NA	<200	NA	NA	NVG	NVG	NVG
Antimony	NA	NA	NA	NA	<6.0	NA	NA	NVG	NVG	NVG
Arsenic	<2.2	<2.2	<2.3	<2.3	<3.0	<3.0	<3.0	13	16	16
Barium	<22	23.0 J	63.4	48	<200	<200	<200	350	400	400
Beryllium	NA	NA	NA	NA	<1.0	NA	NA	7.2	72.0	590
Cadmium	<0.56	<0.56	<0.57	<0.57	<3.0	<3.0	<3.0	2.5	4.3	9.3
Calcium	NA	NA	NA	NA	<5000	NA	NA	NVG	NVG	NVG
Chromium	14.1 J	15.8 J	19.2 J	23.1 J	<10	<10	<10	30	110	1,500
Cobalt	NA	NA	NA	NA	<50	NA	NA	NVG	NVG	NVG
Copper	NA	NA	NA	NA	<10	NA	NA	50	270	270
Iron	NA	NA	NA	NA	<200	NA	NA	NVG	NVG	NVG
Lead	<2.2	3.5	25.6	8.8	<3.0	<3.0	10.1	63	400	1,000
Magnesium	NA	NA	NA	NA	<5000	NA	NA	NVG	NVG	NVG
Manganese	NA	NA	NA	NA	<15	NA	NA	1,600	2,000	10,000
Mercury	<0.036	<0.033	<0.036	<0.038	<0.20	<0.20	<0.20	0.18	0.81	2.8
Nickel	NA	NA	NA	NA	<10	NA	NA	30	310	310
Potassium	NA	NA	NA	NA	<10000	NA	NA	NVG	NVG	NVG
Selenium	<2.2	<2.2	<2.3	<2.3	<10	<10	<10	3.9	180	1,500
Silver	<0.56	<0.56	<0.57	<0.57	<10	<10	<10	2	180	1,500
Sodium	NA	NA	NA	NA	<10000	NA	NA	NVG	NVG	NVG
Thallium	NA	NA	NA	NA	<2.0	NA	NA	NVG	NVG	NVG
Vanadium	NA	NA	NA	NA	<50	NA	NA	NVG	NVG	NVG
Zinc	NA	NA	NA	NA	<20	NA	NA	109	10,000	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

ND - Not detected

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(b): Restricted Use Soil Cleanup Objectives*

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-XXXXX is a duplicate of EP-62

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

TABLE 9 (Page 8 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Sample ID	BLR EP-1	BLR EP-2	BLR EP-3	BLR EP-4	BLR EP-5	HL EP-1	HL-EP-2	HL EP-3	HL EP-4	HL EP-5	EP-XX	*Part 375	**Track 4
Sample Depth	6 feet	6 feet	6 feet	6 feet	12 feet	3 feet	3 feet	3 feet	3 feet	6 feet	6 feet	Track 1	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil Cleanup	Soil Cleanup
Date Sampled	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/28/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	Objectives	Objectives
Metals													
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	NA	NA	NA	NA	7,330 d	10,100	11,500	11,000	10,000	11,200	15,600 R	NVG	NVG
Antimony	NA	NA	NA	NA	<6.6 UJ	<2.3 UJ	<2.3 UJ	<2.4 UJ	<2.4 UJ	<2.4 UJ	<2.4 R	NVG	NVG
Arsenic	NA	NA	NA	NA	8.7 d	13.0	4.8	6.8	4.0	10.9	4.4 R	13	16
Barium	NA	NA	NA	NA	**3,010**	132	176	165	218	**561**	76.6 R	350	400
Beryllium	NA	NA	NA	NA	0.70	0.73	0.87	0.83	0.74	0.90	1.2 R	7.2	590
Cadmium	NA	NA	NA	NA	1.6 d	<0.58	0.62	<0.60	0.60	1.3	<0.60 R	2.5	9.3
Calcium	NA	NA	NA	NA	123,000	28,100	18,200	16,600	26,600	25,500	3,390 R	NVG	NVG
Chromium	NA	NA	NA	NA	21.8	16.9	20.9	**84.4 J**	19.4 J	**34.9 J**	29.1 R	30	1,500
Cobalt	NA	NA	NA	NA	6.7	6.3	6.5	9.6	<6.0	8.5	8.2 R	NVG	NVG
Copper	NA	NA	NA	NA	**107 J**	24.6 J	36.6 J	31.7 J	26.0 J	37.6 J	22.2 R	50	270
Iron	NA	NA	NA	NA	21,900 J	14,400 J	16,300 J	19,800 J	15,000 J	17,600 J	24,100 R	NVG	NVG
Lead	NA	NA	NA	NA	**512 d**	**288**	**467**	**529**	**726**	**2,380**	**152 R**	63	1,000
Magnesium	NA	NA	NA	NA	40,100	10,300	6,200	11,300	7,000	8,850	4,440 R	NVG	NVG
Manganese	NA	NA	NA	NA	517	328	310	338 J	280 J	446 J	212 R	1,600	10,000
Mercury	NA	NA	NA	NA	**0.41**	**0.28**	**0.23**	**0.56**	**0.36**	<0.040	<0.040 R	0.18	2.8
Nickel	NA	NA	NA	NA	**42.2 J**	13.8 J	16.4 J	51.5 J	13.5 J	16.7 J	15.9 R	30	310
Potassium	NA	NA	NA	NA	1,230	<1,200	1,570	1,410	1,420	1,610	1,240 R	NVG	NVG
Selenium	NA	NA	NA	NA	<6.6 d	<2.3	<2.3	<2.4	<2.4	<2.4	<2.4 R	3.9	1,500
Silver	NA	NA	NA	NA	<0.55	<0.58	<0.58	<0.60	<0.60	<0.61	<0.60 R	2	1,500
Sodium	NA	NA	NA	NA	<1,100	<1,200	<1,200	<1,200	<1,200	<1,200	<1,200 R	NVG	NVG
Thallium	NA	NA	NA	NA	<3.3 d	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2 R	NVG	NVG
Vanadium	NA	NA	NA	NA	23.5	23.1	26.9	30.1	23.2	29.8	38.3 R	NVG	NVG
Zinc	NA	NA	NA	NA	**1,720 d**	**238**	**408**	**293**	**257**	**749**	**113 R**	109	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Residential Soil Cleanup Objectives.

d= Elevated detection limit due to dilution required for high interfering element.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011. (Commercial SCOs)*

Boxed indicates that value is above Track 4 Site Specific Soil Cleanup Objectives.

TABLE 9 (Page 9 of 9)

Validated Analytical Results for Metals in Soil Samples

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Sample ID	T001 EP-1	T001 EP-2	T001 EP-3	T001 EP-4	T001 EP-5	Field Blank	*Part 375	**Track 4
Sample Depth	3 feet	3 feet	3 feet	3 feet	6 feet	NA	Track 1	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil Cleanup	Soil Cleanup
Date Sampled	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	Objectives	Objectives
Metals								
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	NA	NA	NA	NA	9,830	<200	NVG	NVG
Antimony	NA	NA	NA	NA	<2.1	<6.0	NVG	NVG
Arsenic	NA	NA	NA	NA	2.3 J	<3.0	13	16
Barium	NA	NA	NA	NA	39.5	<200	350	400
Beryllium	NA	NA	NA	NA	0.68	<1.0	7.2	590
Cadmium	NA	NA	NA	NA	1.5	<3.0	2.5	9.3
Calcium	NA	NA	NA	NA	1,510	<5,000	NVG	NVG
Chromium	NA	NA	NA	NA	20.5 J	<10	30	1,500
Cobalt	NA	NA	NA	NA	<5.4	<50	NVG	NVG
Copper	NA	NA	NA	NA	10.1 J	<10	50	270
Iron	NA	NA	NA	NA	16,700 J	<100	NVG	NVG
Lead	NA	NA	NA	NA	31.3	<3.0	63	1,000
Magnesium	NA	NA	NA	NA	2,930	<5,000	NVG	NVG
Manganese	NA	NA	NA	NA	310 J	<15	1,600	10,000
Mercury	NA	NA	NA	NA	<0.035	<0.20	0.18	2.8
Nickel	NA	NA	NA	NA	12.3 J	<10	30	310
Potassium	NA	NA	NA	NA	<1,100	<10,000	NVG	NVG
Selenium	NA	NA	NA	NA	<2.1	<10	3.9	1,500
Silver	NA	NA	NA	NA	<0.54	<10	2	1,500
Sodium	NA	NA	NA	NA	<1,100	<10,000	NVG	NVG
Thallium	NA	NA	NA	NA	<1.1	<2.0	NVG	NVG
Vanadium	NA	NA	NA	NA	24.5	<50	NVG	NVG
Zinc	NA	NA	NA	NA	**226**	<20	109	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

NA=Not Applicable

J=Analyte detected below quantitation limits

Bold indicates that value is above 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives.

Boxed indicates that value is above Track 4 Site Specific Soil Cleanup Objectives.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

***Track 4 Site Specific Soil Action Levels, Remedial Action Work Plan, July 2011.*

Table 10 (page 1 of 2)
Track 2 Soil Cleanup Objectives for Imported Fill

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

	Contaminant	Soil Cleanup Objective
Metals		
	Arsenic	16
	Barium	400
	Beryllium	47
	Cadmium	4.3
	Chromium, hexavalent	19
	Chromium, trivalent	180
	Copper	270
	Total Cyanide	27
	Lead	400
	Manganese	2,000
	Total Mercury	0.73
	Nickel	130
	Selenium	4
	Silver	8.3
	Zinc	2,480
PCBs/Pesticides		
	2,4,5-TP Acid (Silvex)	3.8
	4,4'-DDE	8.9
	4,4'-DDT	7.9
	4,4'-DDD	13
	Aldrin	0.097
	alpha-BHC	0.02
	beta-BHC	0.09
	Chlordane (alpha)	2.9
	delta-BHC	0.25
	Dibenzofuran	59
	Dieldrin	0.1
	Endosulfan I	24
	Endosulfan II	24
	Endosulfan sulfate	24
	Endrin	0.06
	Heptachlor	0.38
	Lindane	0.1
	Polychlorinated biphenyls	1

All SCOs are in parts per million (ppm)

Table 10 (page 2 of 2)
Track 2 Soil Cleanup Objectives for Imported Fill

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Contaminant	Soil Cleanup Objective
Semivolatile Organic Compounds	
Acenaphthene	98
Acenapthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	100
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol	0.33
Naphthalene	12
o-Cresol	0.33
p-Cresol	0.33
Pentachlorophenol	0.8
Penanthrene	100
Phenol	0.33
Pyrene	100
Volatile Organic Compounds	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
cis-1,2-Dichloroethene	0.25
trans-1,2-Dichloroethene	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	1.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
n-Propylbenzene	3.9
sec-Butylbenzene	11
tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47
1,2,4-Triethylbenzene	3.6
1,3,5-Trimethylbenzene	8.4
Vinyl Chloride	0.02
Xylene (mixed)	1.6

All SCOs are in parts per million (ppm)

Table 11A
Summary of Construction and Demolition Debris
Courtlandt Crescent
383 East 162nd Street
Bronx, NY

Item #	Date	Ticket #	Facility Destination	Waste Class.	Volume (CY)	Cumm Qty (CY)
1	12/01/11	155489	Cardella Waste, North Bergen, NJ	C & D Debris	20.00	20.00
2	12/07/11	156290	Cardella Waste, North Bergen, NJ	C & D Debris	10.00	30.00
3	12/14/11	157215	Cardella Waste, North Bergen, NJ	C & D Debris	10.00	40.00
4	12/21/11	160988	Cardella Waste, North Bergen, NJ	C & D Debris	10.00	50.00
5	12/28/11	161879	Cardella Waste, North Bergen, NJ	C & D Debris	10.00	60.00
6	12/29/11	162152	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	75.00
7	01/04/12	162616	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	90.00
8	01/09/12	163419	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	105.00
9	01/11/12	163748	Cardella Waste, North Bergen, NJ	C & D Debris	20.00	125.00
10	01/12/12	163910	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	140.00
11	01/13/12	164085	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	155.00
12	01/16/12	164312	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	170.00
13	01/17/12	164418	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	185.00
14	01/18/12	164618	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	200.00
15	01/20/12	165015	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	215.00
16	01/23/12	165340	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	230.00
17	01/26/12	165899	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	245.00
18	01/27/12	165030	Cardella Waste, North Bergen, NJ	C & D Debris	15.00	260.00
19	01/30/12	166357	Cardella Waste, North Bergen, NJ	C & D Debris	30.00	290.00
20	02/01/12	166753	Cardella Waste, North Bergen, NJ	C & D Debris	30.00	320.00
21	02/07/12	167554	Cardella Waste, North Bergen, NJ	C & D Debris	30.00	350.00
22	02/08/12	167735	Cardella Waste, North Bergen, NJ	C & D Debris	7.50	357.50
23	02/13/12	168328	Cardella Waste, North Bergen, NJ	C & D Debris	7.50	365.00
24	02/17/12	168837	Cardella Waste, North Bergen, NJ	C & D Debris	12.50	377.50
25	02/23/12	169721	Cardella Waste, North Bergen, NJ	C & D Debris	17.50	395.00
26	02/24/12	169998	Cardella Waste, North Bergen, NJ	C & D Debris	16.50	411.50
27	02/28/12	170444	Cardella Waste, North Bergen, NJ	C & D Debris	9.00	420.50
28	02/29/12	170614	Cardella Waste, North Bergen, NJ	C & D Debris	12.50	433.00
29	07/13/11	402521	City Recycling Corp.	C & D Debris	5.65	438.65
30	07/12/11	402450	City Recycling Corp.	C & D Debris	7.91	446.56
31	07/14/11	402696	City Recycling Corp.	C & D Debris	2.63	449.19
32	07/12/11	402367	City Recycling Corp.	C & D Debris	8.18	457.37
33	07/08/11	402066	City Recycling Corp.	C & D Debris	2.49	459.86
34	07/08/11	402093	City Recycling Corp.	C & D Debris	1.25	461.11

Total C&D: 461.11 Cubic Yards

Table 11A
Summary of Construction and Demolition Debris
Courtlandt Crescent
383 East 162nd Street
Bronx, NY

Item #	Date	Ticket #	Facility Destination	Waste Class.	Volume (LBS)	Cumm Qty (LBS)
1	08/20/11	3124004	Gershow Recycling	Tanks	4500.00	4,500.00

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
1	08/10/11	493791	TP-11	Clean Earth of Carteret in Carteret, New Jersey	27.30	27.30
2	08/10/11	493790	TP-11	Clean Earth of Carteret in Carteret, New Jersey	28.66	55.96
3	08/10/11	541287	TP-11	Clean Earth of Carteret in Carteret, New Jersey	25.03	80.99
4	08/10/11	493789	TP-11	Clean Earth of Carteret in Carteret, New Jersey	28.83	109.82
5	08/10/11	541288	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.23	142.05
6	08/10/11	541289	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.51	171.56
7	08/10/11	493787	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.12	202.68
8	08/10/11	493788	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.04	231.72
9	08/10/11	493784	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.49	261.21
10	08/10/11	493772	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.48	292.69
11	08/10/11	493773	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.53	325.22
12	08/10/11	541299	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.84	356.06
13	08/10/11	493774	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.76	386.82
14	08/10/11	541290	TP-11	Clean Earth of Carteret in Carteret, New Jersey	26.54	413.36
15	08/10/11	493786	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.70	444.06
16	08/10/11	493785	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.90	473.96
17	08/10/11	541291	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.79	503.75
18	08/10/11	541292	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.10	532.85
19	08/10/11	493783	TP-11	Clean Earth of Carteret in Carteret, New Jersey	27.80	560.65
20	08/10/11	493782	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.13	592.78
21	08/10/11	541301	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.95	622.73
22	08/10/11	541302	TP-11	Clean Earth of Carteret in Carteret, New Jersey	34.11	656.84
23	08/10/11	493775	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.72	688.56
24	08/10/11	493776	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.13	720.69
25	08/10/11	493777	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.31	752.00
26	08/10/11	541300	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.20	784.20
27	08/10/11	541303	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.38	814.58
28	08/10/11	493778	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.93	847.51
29	08/10/11	493779	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.40	879.91
30	08/10/11	541293	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.82	909.73
31	08/10/11	541294	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.28	941.01
32	08/10/11	541304	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.24	971.25
33	08/10/11	493780	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.43	1,002.68
34	08/10/11	493781	TP-11	Clean Earth of Carteret in Carteret, New Jersey	33.67	1,036.35
35	08/10/11	541295	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.23	1,066.58
36	08/10/11	493762	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.11	1,098.69
37	08/10/11	493764	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.56	1,129.25
38	08/10/11	541296	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.85	1,159.10
39	08/10/11	541297	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.67	1,190.77
40	08/10/11	493765	TP-11	Clean Earth of Carteret in Carteret, New Jersey	32.91	1,223.68
41	08/10/11	493766	TP-12	Clean Earth of Carteret in Carteret, New Jersey	31.51	1,255.19
42	08/10/11	493763	TP-12	Clean Earth of Carteret in Carteret, New Jersey	31.38	1,286.57
43	08/10/11	493767	TP-12	Clean Earth of Carteret in Carteret, New Jersey	31.19	1,317.76
44	08/10/11	493768	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.50	1,348.26
45	08/10/11	541298	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.24	1,378.50
46	08/10/11	493769	TP-12	Clean Earth of Carteret in Carteret, New Jersey	29.82	1,408.32
47	08/10/11	493770	TP-12	Clean Earth of Carteret in Carteret, New Jersey	32.55	1,440.87
48	08/10/11	493771	TP-12	Clean Earth of Carteret in Carteret, New Jersey	33.52	1,474.39
49	08/10/11	522212	TP-12	Clean Earth of Carteret in Carteret, New Jersey	32.12	1,506.51
50	08/10/11	522214	TP-12	Clean Earth of Carteret in Carteret, New Jersey	29.36	1,535.87

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
51	08/10/11	522213	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.65	1,566.52
52	08/10/11	522215	TP-12	Clean Earth of Carteret in Carteret, New Jersey	33.34	1,599.86
53	08/11/11	493834	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.26	1,630.12
54	08/11/11	493835	TP-12	Clean Earth of Carteret in Carteret, New Jersey	32.81	1,662.93
55	08/11/11	493836	TP-12	Clean Earth of Carteret in Carteret, New Jersey	33.82	1,696.75
56	08/11/11	493837	TP-12	Clean Earth of Carteret in Carteret, New Jersey	29.40	1,726.15
57	08/11/11	493838	TP-12	Clean Earth of Carteret in Carteret, New Jersey	31.03	1,757.18
58	08/11/11	493839	TP-12	Clean Earth of Carteret in Carteret, New Jersey	28.37	1,785.55
59	08/11/11	493842	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.83	1,815.38
60	08/11/11	493841	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.82	1,844.20
61	08/11/11	493843	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.53	1,875.73
62	08/11/11	493844	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.36	1,904.09
63	08/11/11	493840	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.25	1,935.34
64	08/11/11	493845	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.72	1,964.06
65	08/11/11	493846	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.60	1,994.66
66	08/11/11	493847	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.97	2,025.63
67	08/11/11	493848	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.38	2,057.01
68	08/11/11	493849	TP-13	Clean Earth of Carteret in Carteret, New Jersey	32.61	2,089.62
69	08/11/11	493850	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.29	2,120.91
70	08/11/11	493851	TP-12	Clean Earth of Carteret in Carteret, New Jersey	28.99	2,149.90
71	08/11/11	493852	TP-12	Clean Earth of Carteret in Carteret, New Jersey	29.33	2,179.23
72	08/11/11	493853	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.88	2,210.11
73	08/11/11	493855	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.20	2,240.31
74	08/11/11	493854	TP-7	Clean Earth of Carteret in Carteret, New Jersey	26.76	2,267.07
75	08/11/11	493856	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.50	2,298.57
76	08/11/11	493858	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.84	2,329.41
77	08/11/11	493857	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.64	2,361.05
78	08/11/11	493859	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.43	2,391.48
79	08/11/11	493860	TP-7	Clean Earth of Carteret in Carteret, New Jersey	28.15	2,419.63
80	08/11/11	493861	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.96	2,449.59
81	08/11/11	493862	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.11	2,480.70
82	08/11/11	493863	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.25	2,509.95
83	08/11/11	493864	TP-7	Clean Earth of Carteret in Carteret, New Jersey	27.77	2,537.72
84	08/11/11	493865	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.52	2,569.24
85	08/11/11	493866	TP-11	Clean Earth of Carteret in Carteret, New Jersey	29.06	2,598.30
86	08/11/11	493867	TP-11	Clean Earth of Carteret in Carteret, New Jersey	31.56	2,629.86
87	08/11/11	493868	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.21	2,659.07
88	08/11/11	493870	TP-7	Clean Earth of Carteret in Carteret, New Jersey	35.07	2,694.14
89	08/11/11	493869	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.67	2,725.81
90	08/11/11	493871	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.32	2,757.13
91	08/11/11	493872	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.29	2,788.42
92	08/11/11	493873	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.51	2,818.93
93	08/11/11	493874	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.52	2,848.45
94	08/11/11	552686	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.44	2,877.89
95	08/11/11	552687	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.69	2,908.58
96	08/12/11	493917	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.97	2,939.55
97	08/12/11	493918	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.60	2,968.15
98	08/12/11	493919	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.59	2,999.74
99	08/12/11	493920	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.64	3,031.38
100	08/12/11	493921	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.49	3,060.87

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
101	08/12/11	493922	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.86	3,089.73
102	08/12/11	493923	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.61	3,120.34
103	08/12/11	493924	TP-13	Clean Earth of Carteret in Carteret, New Jersey	28.59	3,148.93
104	08/12/11	493925	TP-13	Clean Earth of Carteret in Carteret, New Jersey	26.96	3,175.89
105	08/12/11	493926	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.30	3,206.19
106	08/12/11	493927	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.91	3,236.10
107	08/12/11	493928	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.90	3,266.00
108	08/12/11	493929	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.60	3,297.60
109	08/12/11	493930	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.98	3,327.58
110	08/12/11	493931	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.38	3,357.96
111	08/12/11	493932	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.27	3,388.23
112	08/12/11	493933	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.38	3,419.61
113	08/12/11	493934	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.05	3,448.66
114	08/12/11	493935	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.34	3,479.00
115	08/12/11	493938	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.89	3,510.89
116	08/12/11	493936	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.23	3,540.12
117	08/12/11	493937	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.57	3,569.69
118	08/12/11	493946	TP-7	Clean Earth of Carteret in Carteret, New Jersey	29.79	3,599.48
119	08/12/11	493945	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.23	3,629.71
120	08/12/11	493944	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.64	3,660.35
121	08/12/11	493943	TP-12	Clean Earth of Carteret in Carteret, New Jersey	30.50	3,690.85
122	08/12/11	493942	TP-12	Clean Earth of Carteret in Carteret, New Jersey	29.95	3,720.80
123	08/12/11	493941	TP-13	Clean Earth of Carteret in Carteret, New Jersey	35.14	3,755.94
124	08/12/11	493940	TP-13	Clean Earth of Carteret in Carteret, New Jersey	32.23	3,788.17
125	08/12/11	493939	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.07	3,819.24
126	08/12/11	493955	TP-13	Clean Earth of Carteret in Carteret, New Jersey	33.62	3,852.86
127	08/12/11	493956	TP-13	Clean Earth of Carteret in Carteret, New Jersey	32.59	3,885.45
128	08/12/11	493954	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.80	3,916.25
129	08/12/11	493953	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.27	3,947.52
130	08/12/11	493957	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.92	3,977.44
131	08/12/11	493958	TP-13	Clean Earth of Carteret in Carteret, New Jersey	30.47	4,007.91
132	08/12/11	493950	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.55	4,039.46
133	08/12/11	493959	TP-13	Clean Earth of Carteret in Carteret, New Jersey	33.01	4,072.47
134	08/12/11	493960	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.95	4,102.42
135	08/12/11	493961	TP-13	Clean Earth of Carteret in Carteret, New Jersey	31.10	4,133.52
136	08/12/11	493962	TP-13	Clean Earth of Carteret in Carteret, New Jersey	29.40	4,162.92
137	08/12/11	493964	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.07	4,192.99
138	08/12/11	493963	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.09	4,224.08
139	08/15/11	541612	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	29.41	4,253.49
140	08/15/11	541613	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	28.22	4,281.71
141	08/15/11	541614	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	27.90	4,309.61
142	08/15/11	541615	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	29.64	4,339.25
143	08/15/11	541616	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	27.91	4,367.16
144	08/15/11	541617	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	27.99	4,395.15
145	08/15/11	541618	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	28.25	4,423.40
146	08/15/11	541619	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	27.76	4,451.16
147	08/15/11	541620	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	24.74	4,475.90
148	08/15/11	541621	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	26.81	4,502.71
149	08/15/11	541622	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	25.21	4,527.92
150	08/15/11	493967	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.15	4,558.07

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
151	08/15/11	493966	TP-7	Clean Earth of Carteret in Carteret, New Jersey	32.20	4,590.27
152	08/15/11	493965	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.76	4,621.03
153	08/15/11	493989	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.72	4,651.75
154	08/15/11	493990	TP-7	Clean Earth of Carteret in Carteret, New Jersey	28.77	4,680.52
155	08/15/11	493991	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.70	4,711.22
156	08/15/11	493992	TP-16	Clean Earth of Carteret in Carteret, New Jersey	32.00	4,743.22
157	08/15/11	493993	TP-16	Clean Earth of Carteret in Carteret, New Jersey	31.42	4,774.64
158	08/15/11	493994	TP-16	Clean Earth of Carteret in Carteret, New Jersey	31.80	4,806.44
159	08/15/11	493995	TP-16	Clean Earth of Carteret in Carteret, New Jersey	28.67	4,835.11
160	08/15/11	493996	TP-17	Clean Earth of Carteret in Carteret, New Jersey	29.42	4,864.53
161	08/15/11	493997	TP-17	Clean Earth of Carteret in Carteret, New Jersey	30.13	4,894.66
162	08/15/11	493998	TP-17	Clean Earth of Carteret in Carteret, New Jersey	30.36	4,925.02
163	08/15/11	493999	TP-17	Clean Earth of Carteret in Carteret, New Jersey	30.91	4,955.93
164	08/15/11	494000	TP-17	Clean Earth of Carteret in Carteret, New Jersey	32.08	4,988.01
165	08/15/11	541603	TP-17	Clean Earth of Carteret in Carteret, New Jersey	30.08	5,018.09
166	08/15/11	541604	TP-16	Clean Earth of Carteret in Carteret, New Jersey	30.64	5,048.73
167	08/15/11	541605	TP-16	Clean Earth of Carteret in Carteret, New Jersey	29.95	5,078.68
168	08/16/11	541623	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	28.42	5,107.10
169	08/16/11	541624	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	31.67	5,138.77
170	08/16/11	541625	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	30.26	5,169.03
171	08/16/11	541626	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	31.62	5,200.65
172	08/16/11	541627	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	30.46	5,231.11
173	08/16/11	541628	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	30.85	5,261.96
174	08/16/11	541629	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	31.76	5,293.72
175	08/16/11	541630	TP-2/TP-3	Clean Earth of Philadelphia in Philadelphia, PA	31.38	5,325.10
176	08/16/11	541606	TP-16	Clean Earth of Carteret in Carteret, New Jersey	34.25	5,359.35
177	08/16/11	541607	TP-7	Clean Earth of Carteret in Carteret, New Jersey	30.68	5,390.03
178	08/16/11	541608	TP-7	Clean Earth of Carteret in Carteret, New Jersey	34.11	5,424.14
179	08/16/11	493875	TP-7	Clean Earth of Carteret in Carteret, New Jersey	32.37	5,456.51
180	08/16/11	493876	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.97	5,488.48
181	08/16/11	493877	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.64	5,520.12
182	08/16/11	493878	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.81	5,551.93
183	08/16/11	493879	TP-7	Clean Earth of Carteret in Carteret, New Jersey	32.94	5,584.87
184	08/16/11	493880	TP-7	Clean Earth of Carteret in Carteret, New Jersey	34.31	5,619.18
185	08/16/11	493881	TP-7	Clean Earth of Carteret in Carteret, New Jersey	34.13	5,653.31
186	08/16/11	493882	TP-7	Clean Earth of Carteret in Carteret, New Jersey	32.98	5,686.29
187	08/16/11	493883	TP-7	Clean Earth of Carteret in Carteret, New Jersey	31.42	5,717.71
188	08/16/11	493884	TP-7	Clean Earth of Carteret in Carteret, New Jersey	33.76	5,751.47
189	08/19/11	308528	TP-19	Clean Earth of Carteret in Carteret, New Jersey	34.38	5,785.85
190	08/19/11	308529	TP-19	Clean Earth of Carteret in Carteret, New Jersey	28.85	5,814.70
191	08/19/11	308530	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.96	5,846.66
192	08/19/11	308531	TP-19	Clean Earth of Carteret in Carteret, New Jersey	33.43	5,880.09
193	08/19/11	308532	TP-19	Clean Earth of Carteret in Carteret, New Jersey	33.73	5,913.82
194	08/19/11	308533	TP-19	Clean Earth of Carteret in Carteret, New Jersey	32.30	5,946.12
195	08/19/11	522217	TP-19	Clean Earth of Carteret in Carteret, New Jersey	29.49	5,975.61
196	08/19/11	308534	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.57	6,007.18
197	08/19/11	493885	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.37	6,038.55
198	08/19/11	493886	TP-19	Clean Earth of Carteret in Carteret, New Jersey	30.22	6,068.77
199	08/19/11	493887	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.02	6,099.79
200	08/19/11	493888	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.21	6,131.00

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
201	08/19/11	308535	TP-19	Clean Earth of Carteret in Carteret, New Jersey	31.98	6,162.98
202	08/19/11	308536	TP-19	Clean Earth of Carteret in Carteret, New Jersey	32.08	6,195.06
203	08/19/11	493889	TP-19	Clean Earth of Carteret in Carteret, New Jersey	33.31	6,228.37
204	08/19/11	493890	TP-19	Clean Earth of Carteret in Carteret, New Jersey	35.05	6,263.42
205	08/19/11	308537	TP-18	Clean Earth of Carteret in Carteret, New Jersey	30.26	6,293.68
206	08/19/11	308538	TP-18	Clean Earth of Carteret in Carteret, New Jersey	25.19	6,318.87
207	08/19/11	308539	TP-18	Clean Earth of Carteret in Carteret, New Jersey	32.10	6,350.97
208	08/19/11	308540	TP-18	Clean Earth of Carteret in Carteret, New Jersey	32.99	6,383.96
209	08/19/11	308541	TP-18	Clean Earth of Carteret in Carteret, New Jersey	28.44	6,412.40
210	08/19/11	308542	TP-18	Clean Earth of Carteret in Carteret, New Jersey	30.26	6,442.66
211	08/19/11	308543	TP-18	Clean Earth of Carteret in Carteret, New Jersey	31.31	6,473.97
212	08/19/11	308544	TP-18	Clean Earth of Carteret in Carteret, New Jersey	29.38	6,503.35
213	08/19/11	493891	TP-18	Clean Earth of Carteret in Carteret, New Jersey	31.14	6,534.49
214	08/19/11	493892	TP-18	Clean Earth of Carteret in Carteret, New Jersey	30.08	6,564.57
215	08/19/11	493893	TP-19	Clean Earth of Carteret in Carteret, New Jersey	29.06	6,593.63
216	08/19/11	493894	TP-19	Clean Earth of Carteret in Carteret, New Jersey	30.32	6,623.95
217	08/19/11	308545	TP-18	Clean Earth of Carteret in Carteret, New Jersey	27.37	6,651.32
218	08/19/11	308546	TP-18	Clean Earth of Carteret in Carteret, New Jersey	31.59	6,682.91
219	08/19/11	493895	TP-18	Clean Earth of Carteret in Carteret, New Jersey	30.68	6,713.59
220	08/19/11	493896	TP-18	Clean Earth of Carteret in Carteret, New Jersey	31.01	6,744.60
221	08/19/11	308547	TP-15	Clean Earth of Carteret in Carteret, New Jersey	33.38	6,777.98
222	08/19/11	308548	TP-15	Clean Earth of Carteret in Carteret, New Jersey	27.89	6,805.87
223	08/19/11	308549	TP-15	Clean Earth of Carteret in Carteret, New Jersey	27.51	6,833.38
224	08/19/11	308550	TP-15	Clean Earth of Carteret in Carteret, New Jersey	35.48	6,868.86
225	08/19/11	308551	TP-15	Clean Earth of Carteret in Carteret, New Jersey	28.71	6,897.57
226	08/19/11	308552	TP-15	Clean Earth of Carteret in Carteret, New Jersey	29.58	6,927.15
227	08/19/11	308553	TP-15	Clean Earth of Carteret in Carteret, New Jersey	30.27	6,957.42
228	08/19/11	308554	TP-15	Clean Earth of Carteret in Carteret, New Jersey	31.65	6,989.07
229	08/19/11	493897	TP-15	Clean Earth of Carteret in Carteret, New Jersey	31.14	7,020.21
230	08/19/11	493898	TP-15	Clean Earth of Carteret in Carteret, New Jersey	32.17	7,052.38
231	08/19/11	541646	TP-15	Clean Earth of Carteret in Carteret, New Jersey	31.22	7,083.60
232	08/19/11	541647	TP-15	Clean Earth of Carteret in Carteret, New Jersey	32.52	7,116.12
233	08/19/11	541645	TP-15	Clean Earth of Carteret in Carteret, New Jersey	30.97	7,147.09
234	08/19/11	541644	TP-15	Clean Earth of Carteret in Carteret, New Jersey	36.75	7,183.84
235	08/19/11	541642	TP-18	Clean Earth of Carteret in Carteret, New Jersey	29.26	7,213.10
236	08/19/11	541643	TP-15	Clean Earth of Carteret in Carteret, New Jersey	31.39	7,244.49
237	08/19/11	541641	TP-18	Clean Earth of Carteret in Carteret, New Jersey	33.34	7,277.83
238	08/19/11	541640	TP-15	Clean Earth of Carteret in Carteret, New Jersey	30.38	7,308.21
239	08/19/11	541639	TP-15	Clean Earth of Carteret in Carteret, New Jersey	28.78	7,336.99
240	08/22/11	541763	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	31.02	7,368.01
241	08/22/11	541764	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	27.92	7,395.93
242	08/22/11	541765	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	30.39	7,426.32
243	08/22/11	541766	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	30.37	7,456.69
244	08/22/11	541767	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	29.47	7,486.16
245	08/22/11	541768	TP-14	Middlesex Logistics Center, Edison New Jersey (ILR)	28.88	7,515.04
246	08/22/11	541769	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	30.57	7,545.61
247	08/22/11	541770	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	28.81	7,574.42
248	08/22/11	541771	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	32.68	7,607.10
249	08/22/11	541772	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	30.72	7,637.82
250	08/22/11	541773	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	21.88	7,659.70

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
251	08/22/11	541774	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	29.01	7,688.71
252	08/22/11	541775	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.87	7,718.58
253	08/22/11	541776	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	29.87	7,748.45
254	08/22/11	541777	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	33.43	7,781.88
255	08/22/11	541778	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	30.00	7,811.88
256	08/22/11	541779	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.80	7,841.68
257	08/22/11	541780	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	30.03	7,871.71
258	08/24/11	541843	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.43	7,901.14
259	08/24/11	541844	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.46	7,930.60
260	08/24/11	541845	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	30.24	7,960.84
261	08/24/11	541846	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.64	7,990.48
262	08/24/11	541847	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.13	8,019.61
263	08/24/11	541848	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	31.04	8,050.65
264	08/24/11	541849	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	28.87	8,079.52
265	08/24/11	541851	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	30.01	8,109.53
266	08/24/11	541852	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	30.69	8,140.22
267	08/24/11	541853	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.31	8,169.53
268	08/24/11	541854	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	29.86	8,199.39
269	08/24/11	541855	TP-9	Middlesex Logistics Center, Edison New Jersey (ILR)	28.69	8,228.08
270	08/24/11	541856	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	30.76	8,258.84
271	08/24/11	541857	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	28.80	8,287.64
272	08/24/11	541858	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	31.41	8,319.05
273	08/24/11	541859	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	30.43	8,349.48
274	08/24/11	541860	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	34.15	8,383.63
275	08/24/11	541850	TP-8	Middlesex Logistics Center, Edison New Jersey (ILR)	31.54	8,415.17
276	08/25/11	541932	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.45	8,443.62
277	08/25/11	541933	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.29	8,473.91
278	08/25/11	541934	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.89	8,503.80
280	08/25/11	541936	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.32	8,532.12
281	08/25/11	541937	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.02	8,560.14
282	08/25/11	541938	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.38	8,590.52
283	08/25/11	541939	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	26.74	8,617.26
284	08/25/11	541940	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.96	8,646.22
285	08/25/11	541941	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.96	8,676.18
286	08/25/11	541942	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	27.95	8,704.13
287	08/25/11	541943	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.78	8,732.91
288	08/25/11	541944	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.18	8,763.09
289	08/25/11	541945	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.54	8,794.63
290	08/25/11	541946	TP-5 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.77	8,825.40
291	08/25/11	541947	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.07	8,854.47
292	08/25/11	541948	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.52	8,884.99
293	08/25/11	541949	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.00	8,913.99
294	08/25/11	541950	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.03	8,944.02
295	08/25/11	541951	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.51	8,973.53
296	08/25/11	541952	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.02	9,004.55
297	08/25/11	541953	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.43	9,035.98
298	08/25/11	541954	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.89	9,065.87
299	08/25/11	541955	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.67	9,096.54
300	08/25/11	541956	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.42	9,126.96

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
301	08/25/11	541957	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.15	9,155.11
302	08/25/11	541958	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.32	9,186.43
303	08/25/11	541961	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.08	9,218.51
304	08/26/11	552670	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.76	9,249.27
305	08/26/11	552669	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.49	9,281.76
306	08/26/11	552668	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.63	9,313.39
307	08/26/11	552667	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.12	9,345.51
308	08/26/11	542043	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.08	9,374.59
309	08/26/11	552666	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.85	9,406.44
310	08/26/11	552665	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.61	9,438.05
311	08/26/11	552664	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.64	9,469.69
312	08/26/11	542044	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.11	9,499.80
313	08/26/11	552663	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.57	9,533.37
314	08/26/11	542032	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.51	9,561.88
315	08/26/11	522662	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.02	9,591.90
316	08/26/11	552661	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.88	9,622.78
317	08/26/11	552660	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.52	9,656.30
318	08/26/11	552659	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.13	9,690.43
319	08/26/11	552658	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.29	9,723.72
320	08/26/11	552657	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.28	9,755.00
321	08/26/11	552656	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.69	9,787.69
322	08/26/11	552655	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.02	9,817.71
323	08/26/11	552654	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.24	9,850.95
324	08/26/11	552653	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.11	9,883.06
325	08/26/11	552652	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.83	9,912.89
326	08/26/11	552651	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.65	9,946.54
327	08/26/11	542047	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.36	9,975.90
328	08/26/11	542046	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.92	10,007.82
329	08/26/11	552685	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	35.55	10,043.37
330	08/26/11	542045	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.58	10,075.95
331	08/26/11	552684	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.53	10,108.48
332	08/26/11	552683	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.98	10,139.46
333	08/26/11	552682	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.41	10,171.87
334	08/26/11	552681	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.14	10,203.01
335	08/26/11	552680	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.45	10,236.46
336	08/26/11	552679	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.79	10,267.25
337	08/26/11	552678	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.25	10,298.50
338	08/26/11	552677	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.34	10,330.84
339	08/26/11	542042	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.19	10,363.03
340	08/26/11	552676	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.90	10,392.93
341	08/26/11	552675	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.52	10,425.45
342	08/26/11	552674	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.36	10,458.81
343	08/26/11	552673	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.59	10,493.40
344	08/26/11	552672	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.63	10,526.03
345	08/26/11	552671	TP-11 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.95	10,559.98
346	08/26/11	552650	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.50	10,591.48
347	08/26/11	552649	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.05	10,620.53
348	08/26/11	542033	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.41	10,649.94
349	08/26/11	552648	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.68	10,682.62
350	08/26/11	552647	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.75	10,714.37

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
351	08/26/11	542034	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.94	10,747.31
352	08/26/11	552646	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.91	10,778.22
353	08/26/11	541861	TP-4 (0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	27.82	10,806.04
354	08/26/11	552645	TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.34	10,840.38
355	08/26/11	552644	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.85	10,874.23
356	08/26/11	552643	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.26	10,905.49
357	08/26/11	552642	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.95	10,938.44
358	08/26/11	552641	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.60	10,971.04
359	08/26/11	552640	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.43	11,004.47
360	08/26/11	552639	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.94	11,036.41
361	08/26/11	552638	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.48	11,069.89
362	08/26/11	552637	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.46	11,100.35
363	08/26/11	552636	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.88	11,133.23
364	08/26/11	552635	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.08	11,166.31
365	08/29/11	552634	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	35.10	11,201.41
366	08/29/11	552633	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.75	11,233.16
367	08/29/11	552632	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.36	11,267.52
368	08/29/11	552631	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.94	11,299.46
369	08/29/11	552630	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.60	11,333.06
370	08/29/11	552629	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.43	11,366.49
371	08/29/11	552628	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.41	11,398.90
372	08/29/11	552627	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.69	11,430.59
373	08/29/11	552626	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.19	11,460.78
374	08/29/11	542052	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.00	11,489.78
375	08/29/11	542053	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.44	11,521.22
376	08/29/11	542054	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.31	11,553.53
377	08/29/11	542055	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.03	11,583.56
378	08/29/11	542056	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.58	11,616.14
379	08/29/11	542057	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.98	11,647.12
380	08/29/11	542058	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.32	11,679.44
381	08/29/11	542059	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.35	11,711.79
382	08/29/11	542060	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.66	11,742.45
383	08/29/11	542061	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.06	11,774.51
384	08/29/11	542062	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.68	11,807.19
385	08/29/11	542063	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.99	11,839.18
386	08/29/11	542064	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.42	11,868.60
387	08/29/11	542065	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	27.42	11,896.02
388	08/29/11	542066	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.16	11,926.18
389	08/29/11	542067	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.60	11,955.78
390	08/29/11	542068	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.77	11,988.55
391	08/29/11	542069	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.41	12,022.96
392	08/29/11	542070	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.02	12,055.98
393	08/29/11	542071	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.23	12,086.21
394	08/29/11	542072	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.96	12,118.17
395	08/29/11	541972	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.21	12,151.38
396	08/29/11	541973	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.11	12,184.49
397	08/29/11	541974	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.46	12,218.95
398	08/29/11	541975	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.92	12,252.87
399	08/30/11	541976	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.94	12,286.81
400	08/30/11	541977	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.61	12,319.42

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
401	08/30/11	541978	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.96	12,351.38
402	08/30/11	541979	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.16	12,381.54
403	08/30/11	541980	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.96	12,413.50
404	08/30/11	541981	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.27	12,447.77
405	08/30/11	541982	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.78	12,480.55
406	08/30/11	541862	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.77	12,511.32
407	08/30/11	541959	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.97	12,541.29
408	08/30/11	542093	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.17	12,571.46
409	08/30/11	542094	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.97	12,602.43
410	08/30/11	542095	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.71	12,633.14
411	08/30/11	542096	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.65	12,662.79
412	08/30/11	541983	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	27.63	12,690.42
413	08/30/11	541984	TP-13 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.13	12,721.55
414	08/30/11	541985	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.56	12,755.11
415	08/30/11	542097	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.48	12,786.59
416	08/30/11	541986	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.69	12,817.28
417	08/30/11	541987	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.74	12,849.02
418	08/30/11	542073	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.28	12,881.30
419	08/30/11	542098	TP-16 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.16	12,913.46
420	08/30/11	542074	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.41	12,946.87
421	08/30/11	542075	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.09	12,979.96
422	08/30/11	542099	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.61	13,010.57
423	08/30/11	542100	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.01	13,042.58
424	08/30/11	542101	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.16	13,073.74
425	08/30/11	542102	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.27	13,106.01
426	08/30/11	542103	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.34	13,137.35
427	08/30/11	542104	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.46	13,168.81
428	08/30/11	542076	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.73	13,201.54
429	08/30/11	542077	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.25	13,232.79
430	08/30/11	542078	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.32	13,263.11
431	08/30/11	542079	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.62	13,296.73
432	08/30/11	542080	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.45	13,328.18
433	08/30/11	542081	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.15	13,361.33
434	08/30/11	542082	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.67	13,392.00
435	08/30/11	542083	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.06	13,425.06
436	08/30/11	542084	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.80	13,457.86
437	08/30/11	542085	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.11	13,490.97
438	08/30/11	542086	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.63	13,523.60
439	08/30/11	542087	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.51	13,557.11
440	08/30/11	542088	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.30	13,591.41
441	08/30/11	542105	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.10	13,624.51
442	08/30/11	542106	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.24	13,656.75
443	08/30/11	542107	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.90	13,687.65
444	08/30/11	542108	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.43	13,721.08
446	08/30/11	542092	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.80	13,752.88
447	08/30/11	542089	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.59	13,784.47
448	08/31/11	541988	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.26	13,817.73
449	08/31/11	542176	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.89	13,849.62
450	08/31/11	542177	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.27	13,880.89

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
451	08/31/11	541989	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.07	13,912.96
452	08/31/11	541990	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.79	13,944.75
453	08/31/11	541991	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.04	13,975.79
454	08/31/11	541992	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.66	14,007.45
455	08/31/11	542178	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.34	14,038.79
456	08/31/11	542179	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.67	14,069.46
457	08/31/11	542180	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.15	14,100.61
458	08/31/11	542181	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.66	14,130.27
459	08/31/11	541993	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.89	14,162.16
460	08/31/11	541994	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.91	14,194.07
461	08/31/11	541995	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.21	14,225.28
462	08/31/11	541996	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.66	14,256.94
463	08/31/11	541997	TP-19 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.07	14,286.01
464	08/31/11	542182	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.34	14,316.35
465	08/31/11	542183	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.19	14,345.54
466	08/31/11	541998	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.45	14,378.99
467	08/31/11	542184	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.37	14,410.36
468	08/31/11	541999	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.12	14,442.48
469	08/31/11	542185	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.75	14,474.23
470	08/31/11	542186	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.07	14,503.30
471	08/31/11	542187	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.27	14,535.57
472	08/31/11	542188	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.73	14,566.30
473	08/31/11	542189	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.30	14,597.60
474	08/31/11	542190	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.38	14,628.98
475	08/31/11	542191	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.51	14,661.49
476	08/31/11	542192	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.42	14,694.91
477	08/31/11	542193	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.33	14,726.24
478	08/31/11	542194	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.31	14,756.55
479	08/31/11	542195	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.20	14,786.75
480	08/31/11	542196	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.29	14,820.04
481	08/31/11	542197	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.05	14,852.09
482	08/31/11	542198	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.52	14,883.61
483	08/31/11	542199	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.09	14,916.70
484	09/01/11	542000	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	35.38	14,952.08
485	09/01/11	542001	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.65	14,984.73
486	09/01/11	542002	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.32	15,019.05
487	09/01/11	542003	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.78	15,051.83
488	09/01/11	542004	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.41	15,085.24
489	09/01/11	542005	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.10	15,117.34
490	09/01/11	542006	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.97	15,149.31
491	09/01/11	542200	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.96	15,180.27
492	09/01/11	542205	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.06	15,211.33
493	09/01/11	542206	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.97	15,243.30
494	09/01/11	542007	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.88	15,278.18
495	09/01/11	542235	TP-17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.78	15,309.96
496	09/01/11	542008	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.48	15,342.44
497	09/01/11	542009	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.23	15,374.67
498	09/01/11	542010	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.59	15,405.26
499	09/01/11	542011	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.12	15,437.38
500	09/01/11	542012	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.35	15,467.73

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
501	09/01/11	542013	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.79	15,499.52
502	09/01/11	542014	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	27.95	15,527.47
503	09/01/11	542015	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.79	15,559.26
504	09/01/11	542016	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	30.50	15,589.76
505	09/01/11	542236	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.13	15,621.89
506	09/01/11	542237	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.13	15,655.02
507	09/01/11	542017	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.80	15,687.82
508	09/01/11	542238	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.66	15,721.48
509	09/01/11	542018	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.89	15,754.37
510	09/01/11	542019	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.46	15,786.83
511	09/01/11	542020	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	33.23	15,820.06
512	09/01/11	542031	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	31.98	15,852.04
513	09/01/11	542030	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.52	15,884.56
514	09/01/11	542029	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	31.61	15,916.17
515	09/01/11	542028	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	31.55	15,947.72
516	09/01/11	542239	TP-14 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.11	15,981.83
517	09/01/11	542027	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	33.03	16,014.86
518	09/01/11	542240	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	34.06	16,048.92
519	09/01/11	542241	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	34.47	16,083.39
520	09/01/11	542242	TP-14 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.77	16,116.16
521	09/01/11	542026	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	35.23	16,151.39
522	09/01/11	542025	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	34.98	16,186.37
523	09/01/11	542024	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.38	16,218.75
524	09/02/11	542023	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	33.56	16,252.31
525	09/02/11	542022	TP-18 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	31.20	16,283.51
526	09/02/11	542021	TP-07 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	28.21	16,311.72
527	09/02/11	542156	TP-07 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	33.65	16,345.37
528	09/02/11	542157	TP-07 (5-10')	Clean Earth of Carteret in Carteret, New Jersey	32.31	16,377.68
529	09/02/11	542243	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.48	16,408.16
530	09/02/11	542244	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.80	16,439.96
531	09/02/11	542245	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.52	16,473.48
532	09/02/11	542246	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.98	16,506.46
533	09/02/11	542247	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	34.40	16,540.86
534	09/02/11	542248	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.03	16,572.89
535	09/02/11	542249	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.62	16,602.51
536	09/02/11	542250	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.08	16,634.59
537	09/02/11	542251	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.35	16,667.94
538	09/02/11	542252	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.52	16,699.46
539	09/02/11	542253	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.47	16,731.93
540	09/02/11	542254	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.68	16,761.61
541	09/02/11	542292	TP-5(0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.91	16,790.52
542	09/02/11	542291	TP-5(0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	27.64	16,818.16
543	09/02/11	542290	TP-5(0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.60	16,846.76
544	09/02/11	542289	TP-5(0-5)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.63	16,875.39
545	09/06/11	541762	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.81	16,906.20
546	09/06/11	541761	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	28.80	16,935.00
547	09/06/11	541760	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.33	16,965.33
548	09/06/11	541759	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	28.48	16,993.81
549	09/06/11	542230	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	28.94	17,022.75
550	09/06/11	542229	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	28.22	17,050.97

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
551	09/06/11	542228	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	29.10	17,080.07
552	09/06/11	542227	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.79	17,112.86
553	09/06/11	542226	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	31.49	17,144.35
554	09/06/11	542170	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	27.89	17,172.24
	09/06/11	542171	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	28.26	17,200.50
555	09/06/11	542172	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	28.65	17,229.15
556	09/06/11	542225	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.04	17,259.19
557	09/06/11	542224	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	31.79	17,290.98
558	09/06/11	542223	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.10	17,323.08
559	09/06/11	542222	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	29.22	17,352.30
560	09/06/11	542221	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.73	17,383.03
561	09/06/11	542220	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	29.35	17,412.38
562	09/06/11	542219	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.61	17,444.99
563	09/06/11	542218	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.94	17,477.93
564	09/06/11	542217	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	33.23	17,511.16
565	09/06/11	542173	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	25.46	17,536.62
566	09/06/11	308632	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	29.29	17,565.91
567	09/06/11	542175	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	28.52	17,594.43
569	09/06/11	542216	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	31.60	17,626.03
570	09/06/11	542215	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.86	17,656.89
571	09/06/11	542214	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	35.11	17,692.00
572	09/06/11	542213	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	33.63	17,725.63
573	09/06/11	542212	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.54	17,758.17
574	09/06/11	542211	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.77	17,790.94
575	09/06/11	542210	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	31.42	17,822.36
576	09/06/11	308634	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	30.39	17,852.75
577	09/06/11	308635	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	28.65	17,881.40
578	09/06/11	308637	TP-15 (5-10)	Clean Earth of North Jersey in South Kearney, New Jersey	26.52	17,907.92
579	09/06/11	542208	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	30.42	17,938.34
580	09/07/11	542209	TP-10 (0-5)	Clean Earth of Carteret in Carteret, New Jersey	32.52	17,970.86
581	9/20/2011	572264	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	27.77	17,998.63
582	9/20/2011	572265	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	28.81	18,027.44
583	9/20/2011	572266	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	31.41	18,058.85
584	9/20/2011	572267	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	33.68	18,092.53
585	9/20/2011	572268	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.89	18,122.42
586	9/20/2011	572269	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.60	18,152.02
587	9/20/2011	572270	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.34	18,181.36
588	9/20/2011	572271	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	28.26	18,209.62
589	9/20/2011	572272	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	34.19	18,243.81
590	9/20/2011	572273	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.38	18,273.19
591	9/20/2011	572274	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	25.08	18,298.27
592	9/20/2011	572275	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	32.21	18,330.48
593	9/20/2011	572276	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	28.43	18,358.91
594	9/20/2011	572277	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	32.50	18,391.41
595	9/20/2011	572279	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.76	18,421.17
596	9/20/2011	572278	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	30.14	18,451.31
597	9/20/2011	572281	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	30.55	18,481.86
598	9/20/2011	572282	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	30.67	18,512.53
599	9/20/2011	572280	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	29.26	18,541.79
600	9/20/2011	572283	TP-4 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	32.21	18,574.00

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
601	9/29/2011	572388	TP-3 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	33.49	18,607.49
602	9/29/2011	572387	TP-3 (0-5)	Clean Earth of Philadelphia in Philadelphia, PA	28.25	18,635.74
603	9/29/2011	537417	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.86	18,665.60
604	9/29/2011	572370	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.06	18,695.66
605	9/29/2011	572369	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.69	18,725.35
606	9/29/2011	572378	TP-18 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.42	18,756.77
607	9/29/2011	572377	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.51	18,788.28
608	9/29/2011	572376	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.44	18,817.72
609	9/29/2011	572375	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	28.16	18,845.88
610	9/29/2011	572371	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	28.65	18,874.53
611	9/29/2011	572372	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.67	18,904.20
612	9/29/2011	572373	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	26.80	18,931.00
613	9/29/2011	572374	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	28.25	18,959.25
614	9/29/2011	522207	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.75	18,990.00
615	9/30/2011	571043	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.70	19,018.70
616	9/30/2011	571042	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	26.86	19,045.56
617	9/30/2011	571041	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.88	19,075.44
618	9/30/2011	571040	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.08	19,105.52
619	9/30/2011	571039	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.85	19,136.37
620	9/30/2011	571038	TP-8 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.63	19,165.00
621	9/30/2011	571037	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.37	19,195.37
622	9/30/2011	572397	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.12	19,225.49
623	9/30/2011	572398	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.25	19,258.74
624	9/30/2011	572399	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.17	19,288.91
625	9/30/2011	571036	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.89	19,321.80
626	9/30/2011	572400	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.19	19,351.99
627	9/30/2011	219535	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.60	19,380.59
628	9/30/2011	219536	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.68	19,412.27
629	9/30/2011	535766	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.79	19,442.06
630	9/30/2011	238963	TP-9 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.50	19,474.56
631	10/17/2011	571537	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.06	19,503.62
632	10/17/2011	571536	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.19	19,537.81
633	10/17/2011	571539	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.44	19,572.25
634	10/17/2011	571538	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.35	19,603.60
635	10/17/2011	571541	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.00	19,637.60
636	10/17/2011	571540	TP-10 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.21	19,670.81
637	10/26/2011	598390	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.06	19,704.87
638	10/26/2011	598391	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	35.69	19,740.56
639	10/26/2011	598392	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.99	19,774.55
640	10/26/2011	598393	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.18	19,803.73
640	10/26/2011	598394	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.23	19,833.96
640	10/26/2011	598395	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.17	19,863.13
640	10/26/2011	598396	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.14	19,896.27
641	10/26/2011	598397	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.44	19,927.71
642	10/26/2011	598398	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.46	19,962.17
643	10/27/2011	598426	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.03	19,994.20
644	10/27/2011	598436	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.27	20,028.47
645	10/27/2011	598437	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.16	20,062.63
646	10/27/2011	598435	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.59	20,096.22
647	10/27/2011	598434	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.98	20,126.20
648	10/27/2011	598433	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.62	20,159.82
649	10/27/2011	598432	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.99	20,190.81
650	10/27/2011	598431	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.72	20,223.53

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
651	10/27/2011	598430	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.04	20,253.57
652	10/27/2011	598429	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.98	20,286.55
653	10/27/2011	598428	TP-7 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.90	20,319.45
654	11/8/2011	537415	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.78	20,353.23
655	11/8/2011	598616	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.06	20,384.29
656	11/8/2011	598617	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.92	20,415.21
657	11/8/2011	598618	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.98	20,448.19
658	11/8/2011	598619	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.15	20,482.34
659	11/8/2011	598620	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.34	20,515.68
660	11/8/2011	598621	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	36.35	20,552.03
661	11/8/2011	598622	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	35.03	20,587.06
662	11/8/2011	598623	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.20	20,617.26
663	11/8/2011	598624	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.33	20,648.59
664	11/8/2011	598638	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.42	20,682.01
665	11/8/2011	598625	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.89	20,712.90
666	11/8/2011	598626	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.67	20,744.57
667	11/8/2011	598628	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.46	20,776.03
668	11/8/2011	598629	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.36	20,808.39
669	11/8/2011	598631	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.59	20,838.98
670	11/8/2011	598630	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.36	20,870.34
671	11/8/2011	598632	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	29.46	20,899.80
672	11/8/2011	598633	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	27.53	20,927.33
673	11/8/2011	598634	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.86	20,960.19
674	11/8/2011	598627	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.20	20,990.39
675	11/8/2011	598635	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.47	21,023.87
676	11/16/11	552622	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.32	21,054.19
677	11/16/11	552624	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.07	21,088.26
678	11/16/11	552623	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.00	21,121.26
679	11/16/11	541742	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.77	21,156.03
680	11/16/11	541743	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.18	21,187.21
681	11/16/11	541744	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	30.01	21,217.22
682	11/16/11	538670	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.72	21,249.94
683	11/16/11	541746	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.98	21,281.92
684	11/16/11	541747	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.19	21,315.11
685	11/16/11	538703	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.34	21,349.45
686	11/16/11	541750	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.98	21,382.43
687	11/16/11	538702	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.53	21,413.96
688	11/16/11	538685	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	32.80	21,446.76
689	11/16/11	538682	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.43	21,480.19
690	11/16/11	538667	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	33.40	21,513.59
691	11/16/11	541754	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	36.04	21,549.63
692	11/16/11	541755	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	34.10	21,583.73
693	11/16/11	538683	TP-7/TP-12 (5-10)	Clean Earth of Carteret in Carteret, New Jersey	31.09	21,614.82
694	11/16/11	551851	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.48	21,644.30
695	11/16/11	538680	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.83	21,677.13
696	11/16/11	538678	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.98	21,708.11
697	11/16/11	538679	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.71	21,740.82
698	11/16/11	538681	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.19	21,774.01
699	11/16/11	551855	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.77	21,803.78
700	11/16/11	538687	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.10	21,833.88

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

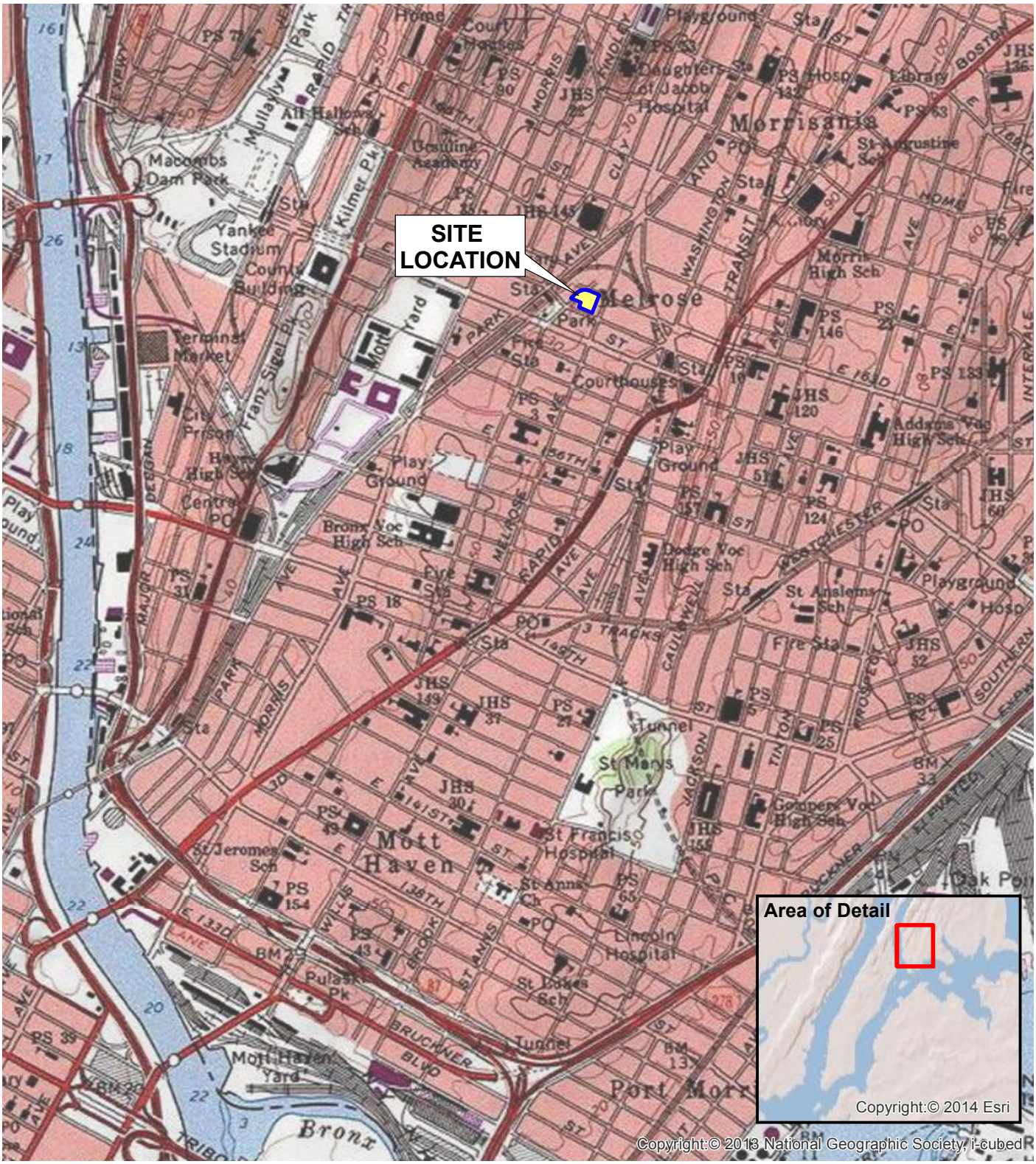
Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
701	11/16/11	538686	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.04	21,863.92
702	11/16/11	551861	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.36	21,896.28
703	11/16/11	551862	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.36	21,927.64
704	11/16/11	538674	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.69	21,959.33
705	11/16/11	538677	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.83	21,991.16
706	11/16/11	551863	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	27.60	22,018.76
707	11/16/11	538676	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.63	22,051.39
708	11/16/11	538705	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.66	22,085.05
709	11/16/11	538704	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.23	22,118.28
710	11/16/11	538701	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	24.65	22,142.93
711	11/16/11	538675	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	24.47	22,167.40
712	11/18/11	598995	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.38	22,196.78
713	11/18/11	598981	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.88	22,228.66
714	11/18/11	598982	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	31.69	22,260.35
715	11/18/11	598983	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	29.46	22,289.81
716	11/18/11	598984	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.47	22,322.28
717	11/18/11	598985	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.94	22,356.22
718	11/18/11	598986	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.45	22,388.67
719	11/18/11	598988	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.08	22,421.75
720	11/18/11	598987	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	34.43	22,456.18
721	11/18/11	598989	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	32.17	22,488.35
722	11/18/11	598990	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	30.73	22,519.08
723	11/18/11	598991	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	28.61	22,547.69
724	11/18/11	598992	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.70	22,581.39
725	11/18/11	598994	TP-8, 9, 14, 16, 17 (5-10)	Middlesex Logistics Center, Edison New Jersey (ILR)	33.19	22,614.58
726	01/05/12	538381	TP-11	Clean Earth of Carteret in Carteret, New Jersey	30.93	22,645.51
727	10/28/11	8574886	5 drums haz lead soil	EQ Detroit Inc., Detroit, Michigan	1.13	22,646.63
				Total Tonnage:	**22,646.63**	

Table 11b
Summary of Waste Disposal Receipts and Manifests
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

Truck#	Date	Manifest #	Origin	Facility Destination	Weight (GAL)	Cumm Qty (GAL)
1	06/06/11	2011-303	liquid from AST	Clean Water of Staten Island, NY	610.00	610.00
2	08/01/11	50383	liquid from UST	FCC Environ of Bayonne, NJ	2100.00	2,710.00
3	08/19/11	50410	liquid from UST	FCC Environ of Bayonne, NJ	117.00	2,827.00
4	08/18/11	50393	liquid from UST	FCC Environ of Bayonne, NJ	332.00	3,159.00
				Total Gallons:	**3,159.00**	

Truck#	Date	Manifest #	Origin	Facility Destination	Weight (LBS)	Cumm Qty (LBS)
1	08/19/11	50457	Tank Bottoms	R.G.M. Earth Care of Deer Park, NY	600.00	600.00
				Total Gallons:	**600.00**	

FIGURES



SOURCE
USGS 7.5 Minute Topographic Map
CENTRAL PARK Quad 1995

0 1,000 2,000 3,000 Feet

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

SITE LOCATION

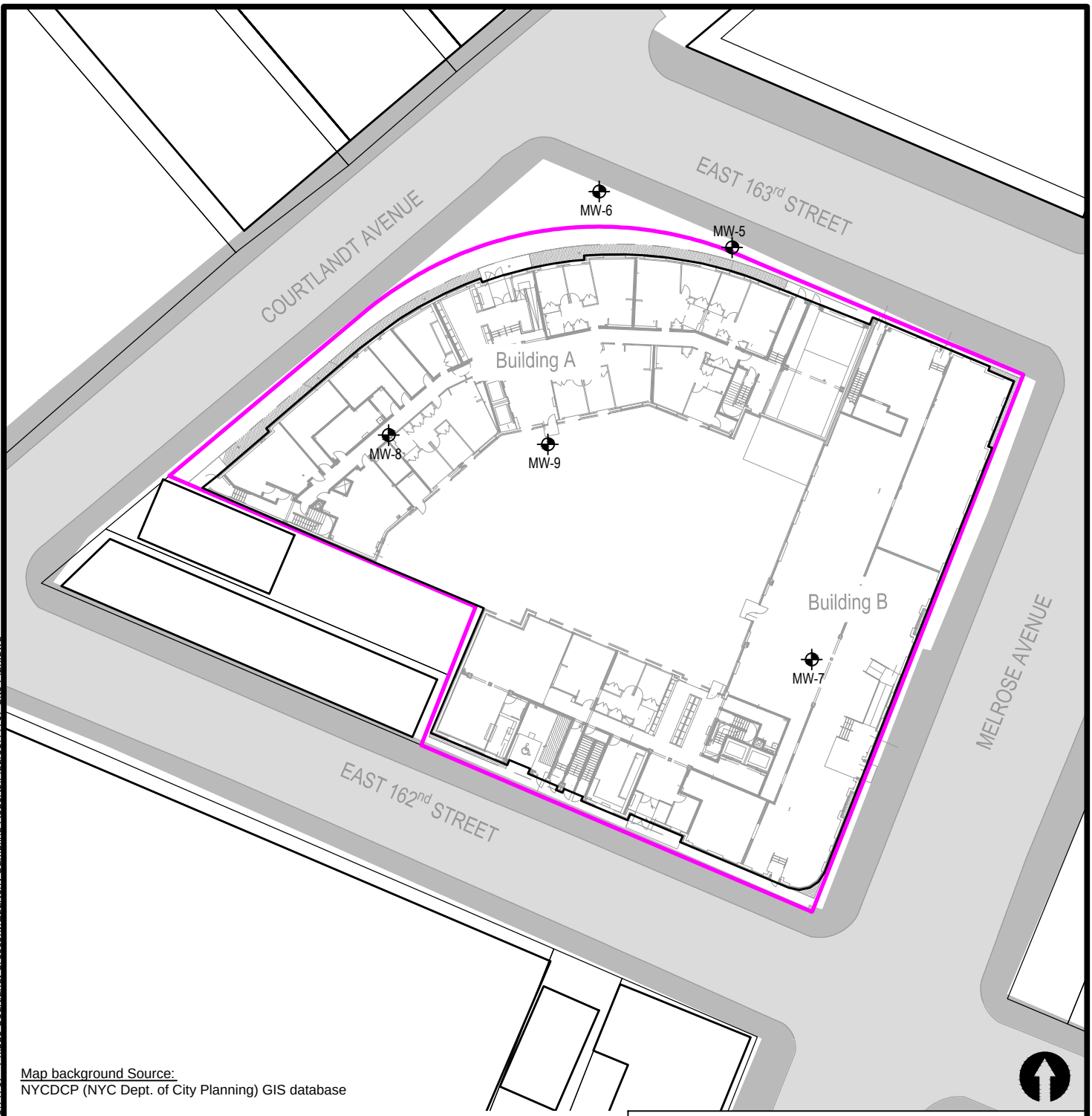
AKRF Engineering, P.C.
440 Park Avenue South, New York, N.Y. 10016

DATE
5/27/2016

PROJECT No.
11707

FIGURE
1

©2016 AKRF, Inc. Environmental Consultants O:\Projects\11707 - COURTLANDT CRESCENT\Fig 1 loc map 2013.mxd



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

0' 25' 50' 100'
SCALE IN FEET

LEGEND:

- PROJECT SITE BOUNDARY
- MW-5 MONITORING WELL
- BUILDING LINE
- LOT LINE

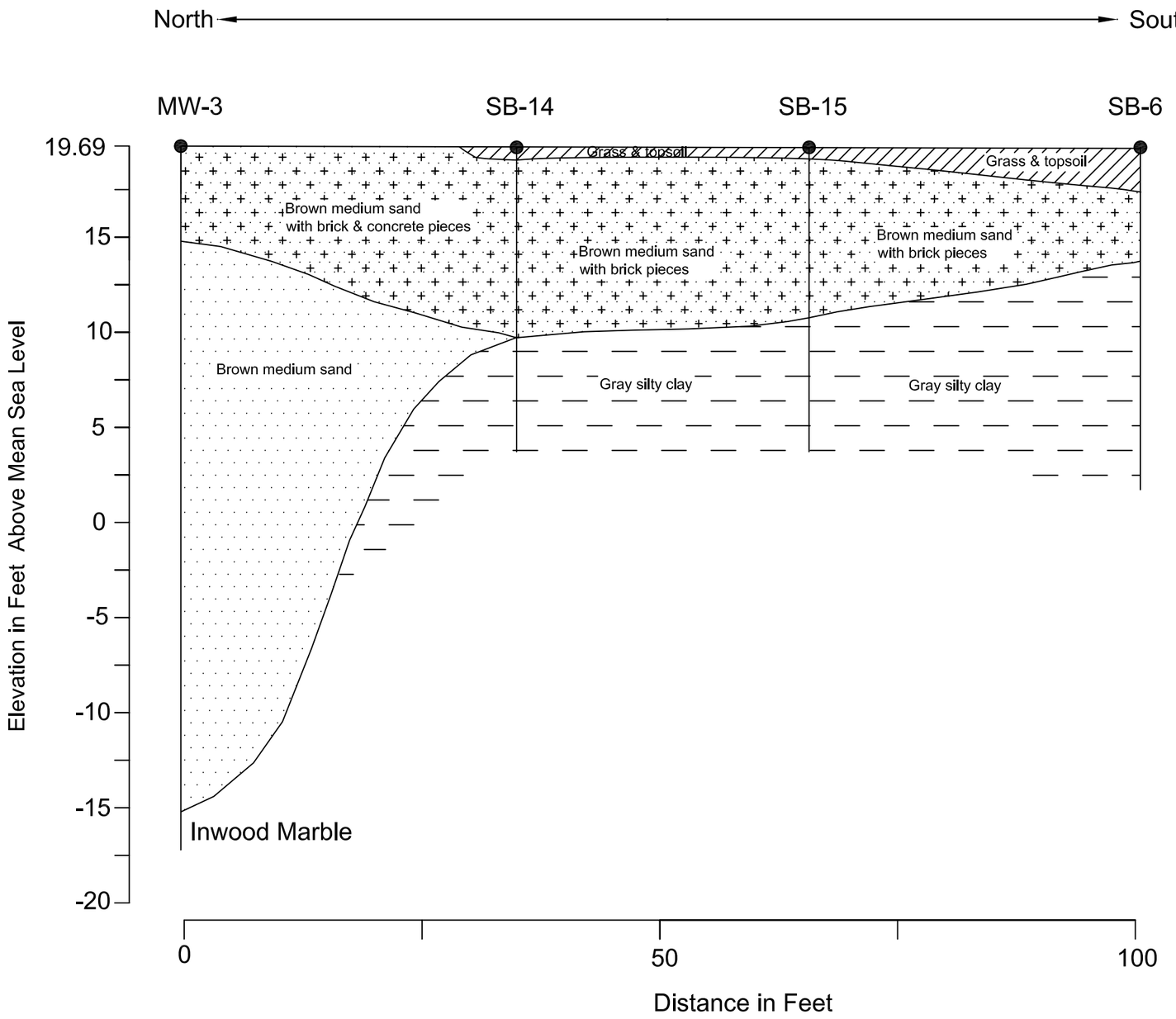
Courtlandt Crescent
383 East 162nd Street
Bronx, New York

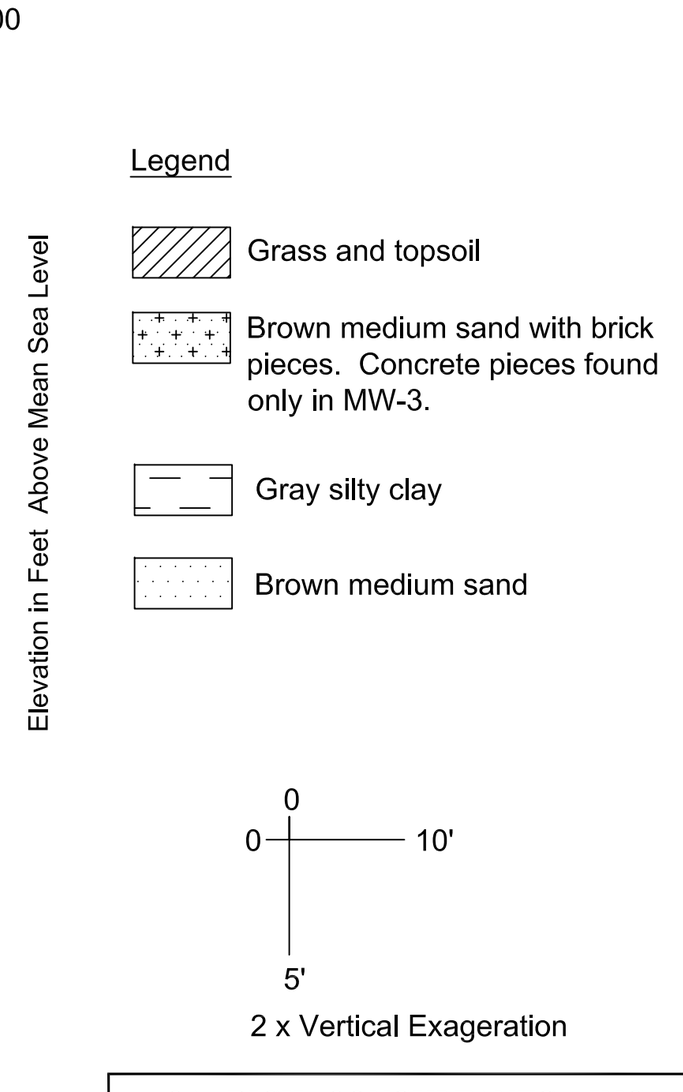
Site Plan & Groundwater Monitoring Well Locations

AKRF Engineering, P.C.
440 Park Avenue South, New York, N.Y. 10016

DATE 5/27/2016
PROJECT No. 11707
SCALE as shown
FIGURE 2

©2013 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\11707 - Phipps Courtlandt Crescent\Quarterly Sampling Reports\Figures\11707 Site Plan.dwg

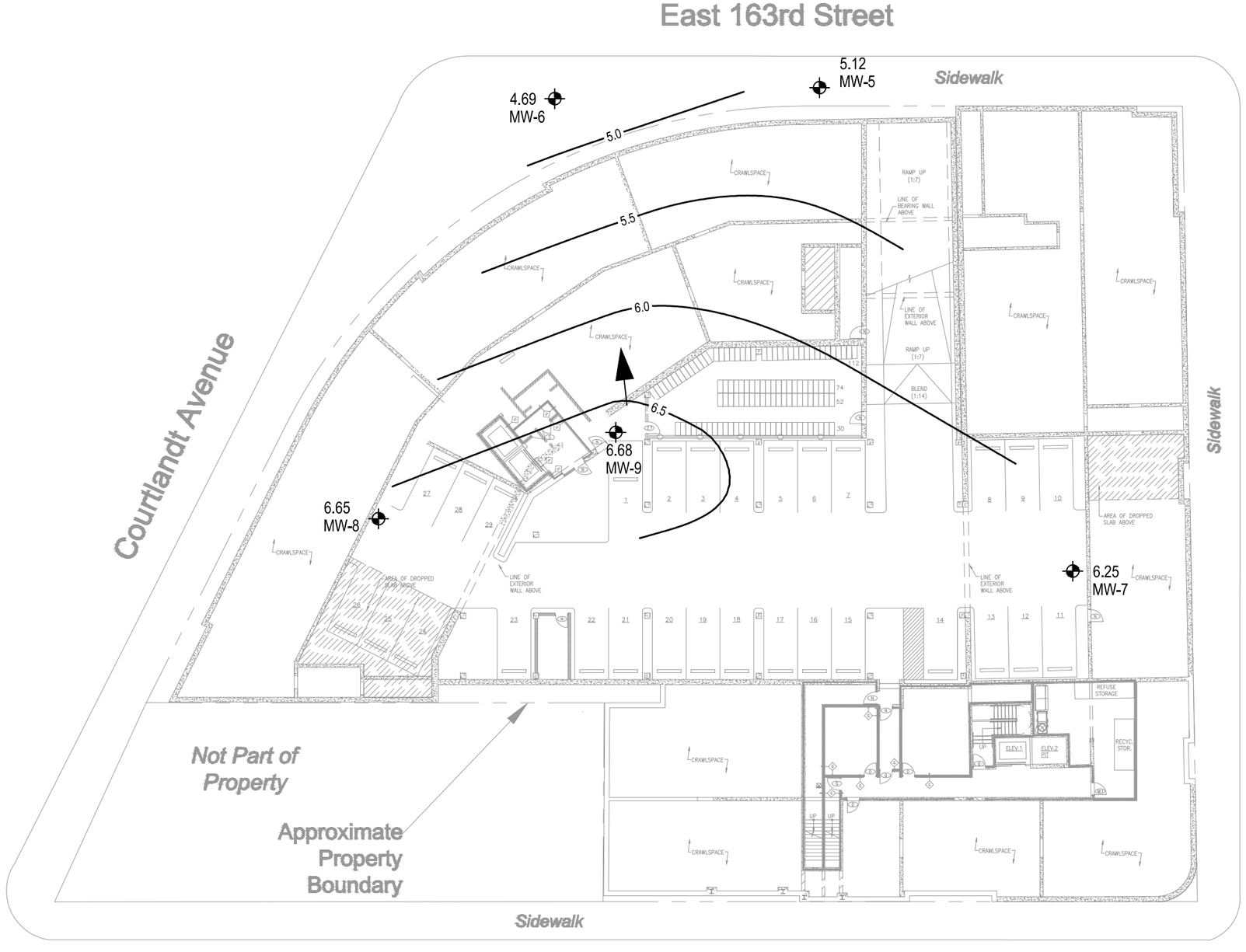




Notes:
1) The surface elevation data from the Montrose Survey dated January 24, 2011 was used for MW-3.
2) The ground surface is relatively flat from MW-3 to SB-6. Surface elevation data is not available for the soil borings in the cross-section.

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Geologic Cross-Section		DATE: 2/26/2011
		SCALE: AS SHOWN
FIGURE: 3	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: J.T.C.
DRAWING NO: 2011-33		APPR. BY: D.S.



Well ID	Top of Casing (TOC) Elevation (ft)	Depth to Groundwater (ft. below TOC)	Groundwater Elevation (ft.)
MW-5	18.92	13.8	5.12
MW-6	17.61	12.92	4.69
MW-7	11.1	4.85	6.25
MW-8	11.15	4.5	6.65
MW-9	11.18	4.5	6.68

Notes
1. Elevations are relative to Borough of Bronx Datum

0' 15' 30' 60'
SCALE IN FEET

LEGEND:

6.25 MW-7 — MONITORING WELL WATER TABLE ELEVATION IN FEET

6.0 — ELEVATION CONTOUR IN FEET

GROUNDWATER FLOW DIRECTION

AKRF Engineering, P.C.
440 Park Avenue South, New York, NY 10016

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

WATER TABLE ELEVATION CONTOURS 04/27/2016

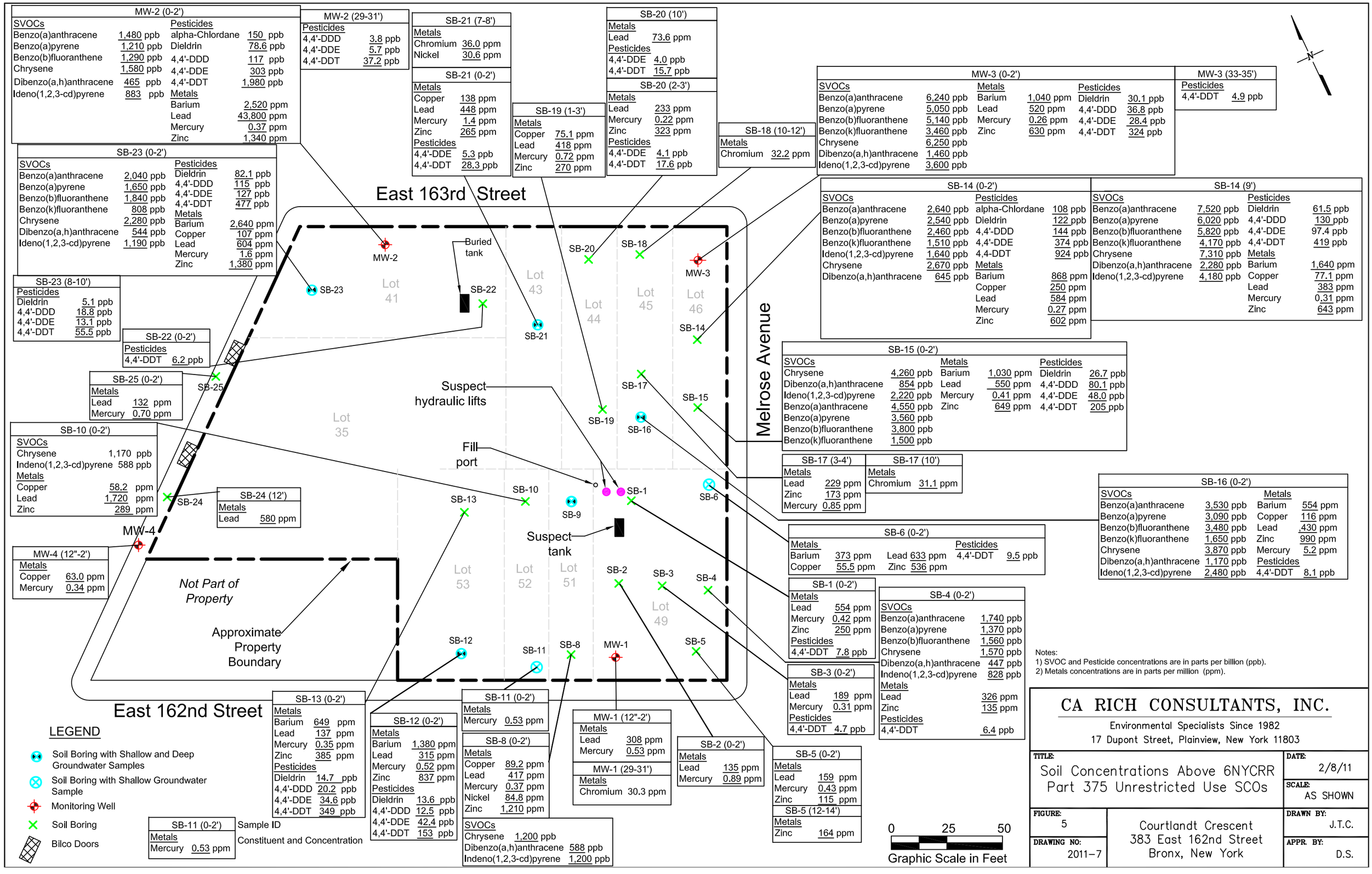
DATE
5/27/2016

PROJECT NO.
11707

SCALE
as shown

FIGURE
4

©2016 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\11707 - Phipps Courtlandt Crescent\Quarterly Sampling Reports\Figures\11707 Phipps GW Elev Map_4_27_2016.dwg



MW-2 (0-2')

SVOCs		Pesticides	
Benzo(a)anthracene	1,480 ppb	alpha-Chlordane	150 ppb
Benzo(a)pyrene	1,210 ppb	Dieldrin	78.6 ppb
Benzo(b)fluoranthene	1,290 ppb	4,4'-DDD	117 ppb
Chrysene	1,580 ppb	4,4'-DDE	303 ppb
Dibenzo(a,h)anthracene	465 ppb	4,4'-DDT	1,980 ppb
Ideno(1,2,3-cd)pyrene	883 ppb	**Metals**	
		Barium	2,520 ppm
		Lead	43,800 ppm
		Mercury	0.37 ppm
		Zinc	1,340 ppm

MW-2 (29-31')

Pesticides	
4,4'-DDD	3.8 ppb
4,4'-DDE	5.7 ppb
4,4'-DDT	37.2 ppb

SB-21 (7-8')

Metals	
Chromium	36.0 ppm
Nickel	30.6 ppm

SB-21 (0-2')

Metals	
Copper	138 ppm
Lead	448 ppm
Mercury	1.4 ppm
Zinc	265 ppm
Pesticides	
4,4'-DDE	5.3 ppb
4,4'-DDT	28.3 ppb

SB-19 (1-3')

Metals	
Copper	75.1 ppm
Lead	418 ppm
Mercury	0.72 ppm
Zinc	270 ppm

SB-20 (10')

Metals	
Lead	73.6 ppm
Pesticides	
4,4'-DDE	4.0 ppb
4,4'-DDT	15.7 ppb

SB-20 (2-3')

Metals	
Lead	233 ppm
Mercury	0.22 ppm
Zinc	323 ppm
Pesticides	
4,4'-DDE	4.1 ppb
4,4'-DDT	17.6 ppb

SB-18 (10-12')

Metals	
Chromium	32.2 ppm

MW-3 (0-2')

SVOCs		Metals		Pesticides	
Benzo(a)anthracene	6,240 ppb	Barium	1,040 ppm	Dieldrin	30.1 ppb
Benzo(a)pyrene	5,050 ppb	Lead	520 ppm	4,4'-DDD	36.8 ppb
Benzo(b)fluoranthene	5,140 ppb	Mercury	0.26 ppm	4,4'-DDE	28.4 ppb
Benzo(k)fluoranthene	3,460 ppb	Zinc	630 ppm	4,4'-DDT	324 ppb
Chrysene	6,250 ppb				
Dibenzo(a,h)anthracene	1,460 ppb				
Ideno(1,2,3-cd)pyrene	3,600 ppb				

MW-3 (33-35')

Pesticides	
4,4'-DDT	4.9 ppb

SB-23 (0-2')

SVOCs		Pesticides	
Benzo(a)anthracene	2,040 ppb	Dieldrin	82.1 ppb
Benzo(a)pyrene	1,650 ppb	4,4'-DDD	115 ppb
Benzo(b)fluoranthene	1,840 ppb	4,4'-DDE	127 ppb
Benzo(k)fluoranthene	808 ppb	4,4'-DDT	477 ppb
Chrysene	2,280 ppb	**Metals**	
Dibenzo(a,h)anthracene	544 ppb	Barium	2,640 ppm
Ideno(1,2,3-cd)pyrene	1,190 ppb	Copper	107 ppm
		Lead	604 ppm
		Mercury	1.6 ppm
		Zinc	1,380 ppm

SB-14 (0-2')

SVOCs		Pesticides		Metals	
Benzo(a)anthracene	2,640 ppb	alpha-Chlordane	108 ppb	Barium	868 ppm
Benzo(a)pyrene	2,540 ppb	Dieldrin	122 ppb	Copper	250 ppm
Benzo(b)fluoranthene	2,460 ppb	4,4'-DDD	144 ppb	Lead	584 ppm
Benzo(k)fluoranthene	1,510 ppb	4,4'-DDE	374 ppb	Mercury	0.27 ppm
Ideno(1,2,3-cd)pyrene	1,640 ppb	4,4-DDT	924 ppb	Zinc	602 ppm
Chrysene	2,670 ppb				
Dibenzo(a,h)anthracene	645 ppb				

SB-14 (9')

SVOCs		Pesticides	
Benzo(a)anthracene	7,520 ppb	Dieldrin	61.5 ppb
Benzo(a)pyrene	6,020 ppb	4,4'-DDD	130 ppb
Benzo(b)fluoranthene	5,820 ppb	4,4'-DDE	97.4 ppb
Benzo(k)fluoranthene	4,170 ppb	4,4'-DDT	419 ppb
Chrysene	7,310 ppb	**Metals**	
Dibenzo(a,h)anthracene	2,280 ppb	Barium	1,640 ppm
Ideno(1,2,3-cd)pyrene	4,180 ppb	Copper	77.1 ppm
		Lead	383 ppm
		Mercury	0,31 ppm
		Zinc	643 ppm

SB-23 (8-10')

Pesticides	
Dieldrin	5.1 ppb
4,4'-DDD	18.8 ppb
4,4'-DDE	13.1 ppb
4,4'-DDT	55.5 ppb

SB-22 (0-2')

Pesticides	
4,4'-DDT	6.2 ppb

SB-25 (0-2')

Metals	
Lead	132 ppm
Mercury	0.70 ppm

SB-15 (0-2')

SVOCs		Metals		Pesticides	
Chrysene	4,260 ppb	Barium	1,030 ppm	Dieldrin	26.7 ppb
Dibenzo(a,h)anthracene	854 ppb	Lead	550 ppm	4,4'-DDD	80.1 ppb
Ideno(1,2,3-cd)pyrene	2,220 ppb	Mercury	0.41 ppm	4,4'-DDE	48.0 ppb
Benzo(a)anthracene	4,550 ppb	Zinc	649 ppm	4,4'-DDT	205 ppb
Benzo(a)pyrene	3,560 ppb				
Benzo(b)fluoranthene	3,800 ppb				
Benzo(k)fluoranthene	1,500 ppb				

SB-17 (3-4')

Metals	
Lead	229 ppm
Zinc	173 ppm
Mercury	0.85 ppm

SB-17 (10')

Metals	
Chromium	31.1 ppm

SB-16 (0-2')

SVOCs		Metals	
Benzo(a)anthracene	3,530 ppb	Barium	554 ppm
Benzo(a)pyrene	3,090 ppb	Copper	116 ppm
Benzo(b)fluoranthene	3,480 ppb	Lead	,430 ppm
Benzo(k)fluoranthene	1,650 ppb	Zinc	990 ppm
Chrysene	3,870 ppb	Mercury	5.2 ppm
Dibenzo(a,h)anthracene	1,170 ppb	Pesticides	
Ideno(1,2,3-cd)pyrene	2,480 ppb	4,4'-DDT	8.1 ppb

SB-10 (0-2')

SVOCs		Metals	
Chrysene	1,170 ppb	Copper	58.2 ppm
Indeno(1,2,3-cd)pyrene	588 ppb	Lead	1,720 ppm
		Zinc	289 ppm

SB-24 (12')

Metals	
Lead	580 ppm

MW-4 (12"-2')

Metals	
Copper	63.0 ppm
Mercury	0.34 ppm

SB-6 (0-2')

Metals				Pesticides	
Barium	373 ppm	Lead	633 ppm	4,4'-DDT	9.5 ppb
Copper	55.5 ppm	Zinc	536 ppm		

SB-1 (0-2')

Metals	
Lead	554 ppm
Mercury	0.42 ppm
Zinc	250 ppm
Pesticides	
4,4'-DDT	7.8 ppb

SB-4 (0-2')

SVOCs	
Benzo(a)anthracene	1,740 ppb
Benzo(a)pyrene	1,370 ppb
Benzo(b)fluoranthene	1,560 ppb
Chrysene	1,570 ppb
Dibenzo(a,h)anthracene	447 ppb
Indeno(1,2,3-cd)pyrene	828 ppb
Metals	
Lead	326 ppm
Zinc	135 ppm
Pesticides	
4,4'-DDT	6.4 ppb

SB-3 (0-2')

Metals	
Lead	189 ppm
Mercury	0.31 ppm
Pesticides	
4,4'-DDT	4.7 ppb

SB-13 (0-2')

Metals	
Barium	649 ppm
Lead	137 ppm
Mercury	0.35 ppm
Zinc	385 ppm
Pesticides	
Dieldrin	14.7 ppb
4,4'-DDD	20.2 ppb
4,4'-DDE	34.6 ppb
4,4'-DDT	349 ppb

SB-12 (0-2')

Metals	
Barium	1,380 ppm
Lead	315 ppm
Mercury	0.52 ppm
Zinc	837 ppm
Pesticides	
Dieldrin	13.6 ppb
4,4'-DDD	12.5 ppb
4,4'-DDE	42.4 ppb
4,4'-DDT	153 ppb

SB-11 (0-2')

Metals	
Mercury	0.53 ppm

SB-8 (0-2')

Metals	
Copper	89.2 ppm
Lead	417 ppm
Mercury	0.37 ppm
Nickel	84.8 ppm
Zinc	1,210 ppm

SVOCs	
Chrysene	1,200 ppb
Dibenzo(a,h)anthracene	588 ppb
Indeno(1,2,3-cd)pyrene	1,200 ppb

MW-1 (12"-2')

Metals	
Lead	308 ppm
Mercury	0.53 ppm

MW-1 (29-31')

Metals	
Chromium	30.3 ppm

SB-2 (0-2')

Metals	
Lead	135 ppm
Mercury	0.89 ppm

SB-5 (0-2')

Metals	
Lead	159 ppm
Mercury	0.43 ppm
Zinc	115 ppm

SB-5 (12-14')

Metals	
Zinc	164 ppm

LEGEND

- Soil Boring with Shallow and Deep Groundwater Samples
- Soil Boring with Shallow Groundwater Sample
- Monitoring Well
- Soil Boring
- Bilco Doors

SB-11 (0-2') — Sample ID
Metals — Mercury 0.53 ppm — Constituent and Concentration

Notes:
1) SVOC and Pesticide concentrations are in parts per billion (ppb).
2) Metals concentrations are in parts per million (ppm).

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TITLE: Soil Concentrations Above 6NYCRR Part 375 Unrestricted Use SCOs

DATE: 2/8/11

SCALE: AS SHOWN

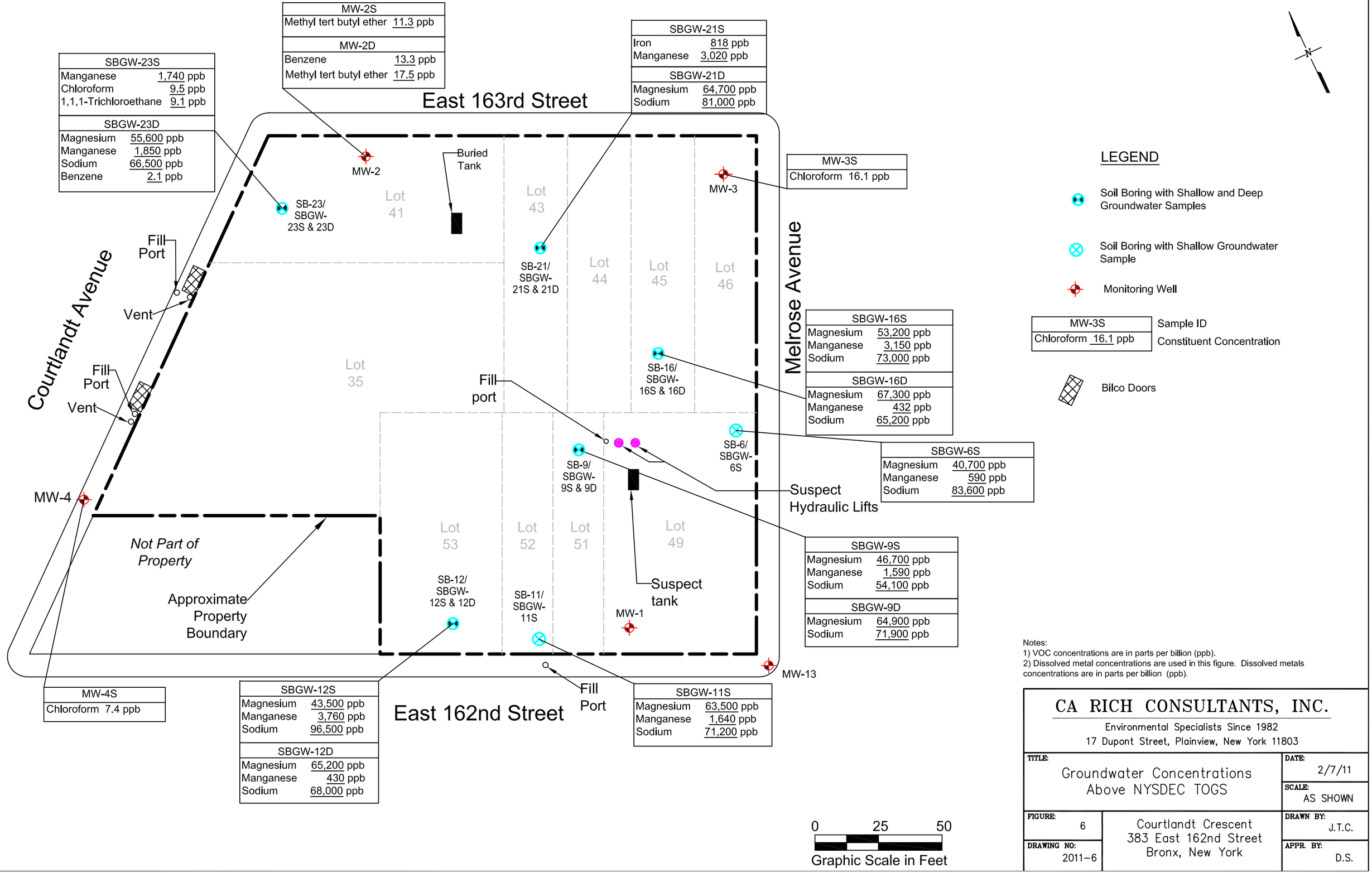
FIGURE: 5

DRAWING NO: 2011-7

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

DRAWN BY: J.T.C.

APPR. BY: D.S.



Notes:
1) VOC concentrations are in parts per billion (ppb).
2) Dissolved metal concentrations are in parts per billion (ppb).

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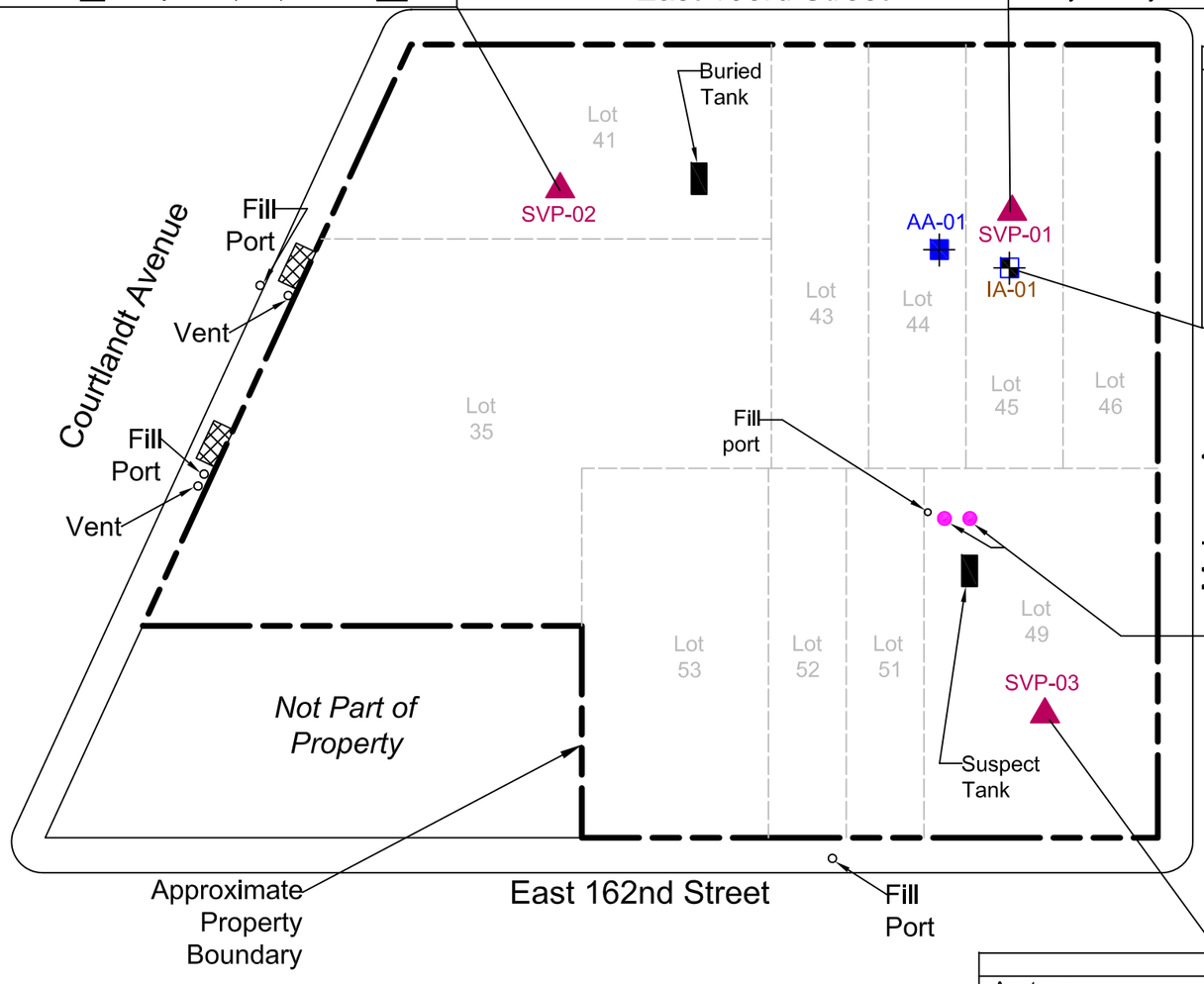
TITLE: Groundwater Concentrations Above NYSDEC TOGS		DATE: 2/7/11
		SCALE: AS SHOWN
FIGURE: 6	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: J.T.C.
DRAWING NO: 2011-6		APPR. BY: D.S.

SVP-02			
Acetone	153	Propylene	60.6
Benzene	3.5	1,1,1-Trichloroethane	5.1
Carbon disulfide	5.6	1,2,4-Trimethylbenzene	2.7 J
Dichlorodifluoromethane	2.6 J	Tetrachloroethylene	52
Ethanol	3.8	Toluene	7.2
Ethylbenzene	3.2 J	Trichloroethylene	1
Heptane	200	m,p-Xylene	6.5
Hexane	239	o-Xylene	2.9 J
Methyl ethyl ketone	19	Xylenes (total)	9.6

SVP-01			
Acetone	273	Methyl Tert Butyl Ether	2.7 J
Benzene	2.4 J	1,2,4-Trimethylbenzene	2.3 J
Dichlorodifluoromethane	3.4 J	2,2,4-Trimethylpentane	1.7 J
Ethanol	17	Tetrachloroethylene	3.1
Ethylbenzene	3.2 J	Toluene	10
Heptane	2.8 J	m,p-Xylene	9.1
Isopropyl alcohol	8.1	o-Xylene	3.4 J
Methyl ethyl ketone	18	Xylenes (total)	12
Methyl isobutyl ketone	2.5 J		



IA-01			
Acetone	2.1	1,2,4-Trimethylbenzene	1.8
Benzene	0.73	1,3,5-Trimethylbenzene	0.59 J
Chloromethane	0.91	Toluene	1.4
Carbon tetrachloride	0.62 J	Trichlorofluoromethane	1.6
Dichlorodifluoromethane	2.6	m,p-Xylene	1.5
Ethanol	5.1	o-Xylene	0.61 J
Ethylbenzene	0.52 J	Xylenes (total)	2.1
Ethyl acetate	0.83		
Isopropyl alcohol	0.71		
Methyl ethyl ketone	0.59		

AA-01			
Acetone	2.4	1,2,4-Trimethylbenzene	0.69 J
Benzene	0.77	2,2,4-Trimethylpentane	0.51 J
Chloromethane	0.99	Toluene	1.4
Dichlorodifluoromethane	2.5	Trichlorofluoromethane	1.6
Ethanol	5.1	m,p-Xylene	11
Hexane	0.46 J	o-Xylene	0.43 J
Isopropyl alcohol	0.57	Xylenes (total)	2.1
Propylene	0.96		

SVP-03			
Acetone	7.1	Propylene	12
Benzene	1.3 J	1,2,4-Trimethylbenzene	2.7 J
Carbon disulfide	3.7	1,3,5-Trimethylbenzene	3.0 J
Dichlorodifluoromethane	3.4 J	2,2,4-Trimethylpentane	3.8
Ethanol	5.5	Tetrachloroethylene	24
Ethylbenzene	11	Tetrahydrofuran	2.4
4-Ethyltoluene	1.9 J	Toluene	32
Heptane	4.9	m,p-Xylene	32
Hexane	44.1	o-Xylene	9.6
		Xylenes (total)	42

LEGEND

- Ambient Air
- Soil Vapor Point
- Indoor Air Sample
- Bilco Doors

0 25 50
Graphic Scale in Feet

Note:
Air sample concentrations are reported in ug/m^3

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TITLE: Volatile Organic Compounds Detected in Air Samples		DATE: 2/8/11
		SCALE: AS SHOWN
FIGURE: 7	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: J.T.C.
DRAWING NO: 2011-32		APPR. BY: D.S.

East 163rd Street

Approximate Property Boundary

Boiler excavation (BLR)

EP–5 EP–3 EP–2 EP–4 EP–1

Tank excavation (T002)

North West Bottom East South

Excavation 1 (Tank 4 & 5)

North Bottom West East South

Courtlandt Avenue

Sidewalk

Melrose Avenue

EP–1 EP–5 EP–4 EP–2 EP–3

Excavation 2 (Tank 3 & 6)

EP–5 EP–3 EP–4 EP–2 EP–1

Hydraulic lift excavation (HL)

Not Part of Property

Tank excavation (T001)

Tank excavation (T007)

Sidewalk

East 162nd Street

LEGEND

Area of excavation

EP–4 ● Endpoint sample location

0 25 50

Graphic Scale in Feet

Note:
The endpoint sample locations are identified as EP-1 through EP-5 or North, South, East, West, and Bottom at the excavations.
Each excavation is uniquely identified with an excavation prefix (i.e., T0001, HL, BLR, Excavation 1)

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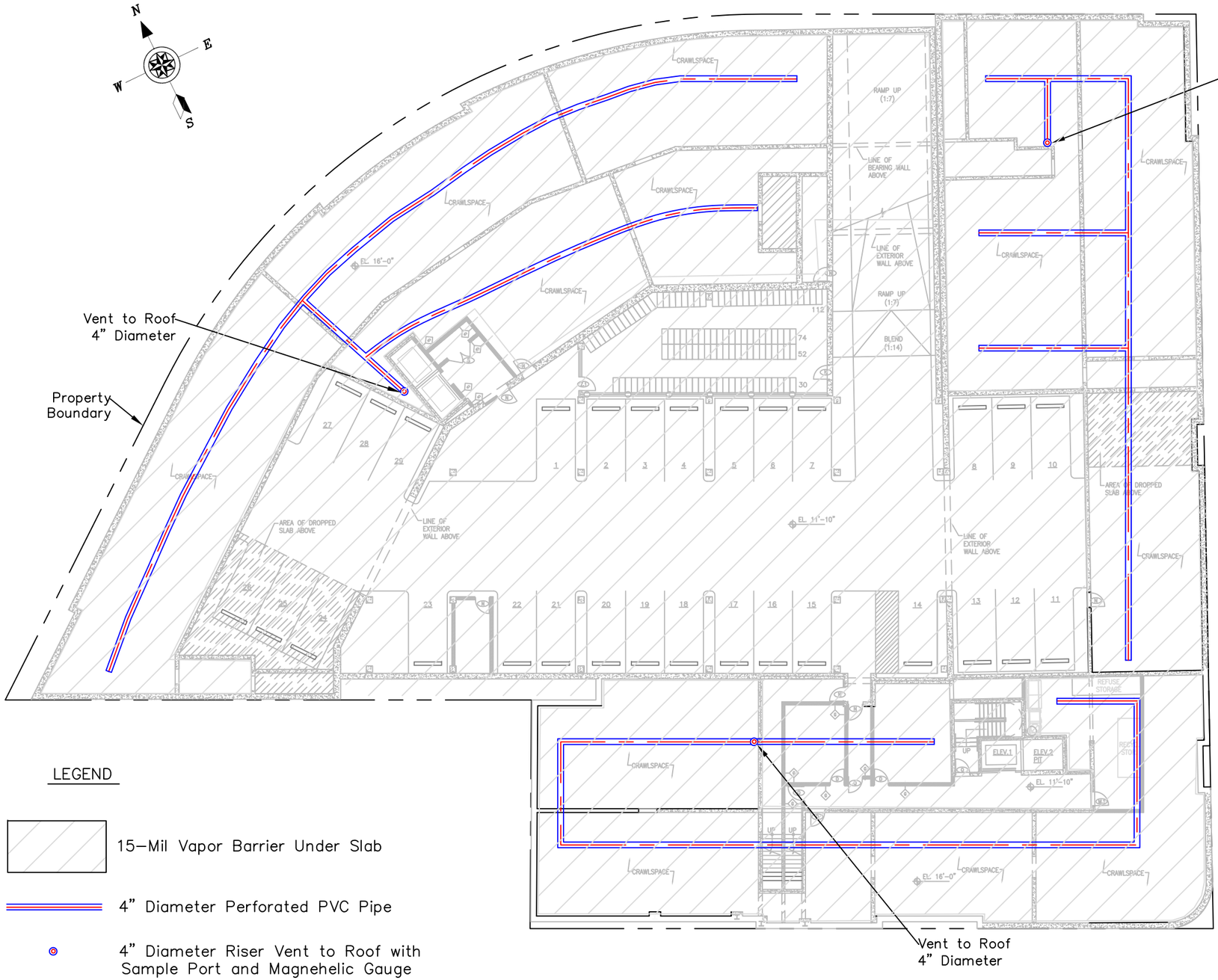
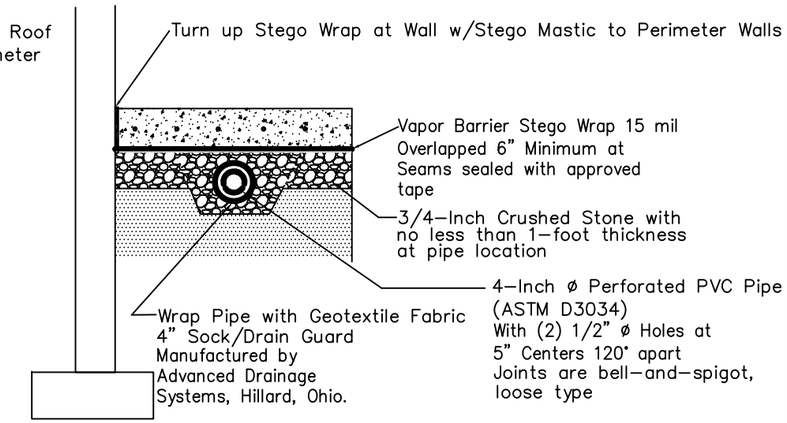
17 Dupont Street, Plainview, New York 11803

TITLE: Extent of Underground Storage Tank, Boiler and Hydraulic Lift Excavations		DATE: 8/10/2012
		SCALE: AS SHOWN
FIGURE: 8	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: J.T.C/S.T.M.
DRAWING NO: 2011–16		APPR. BY: D.S.

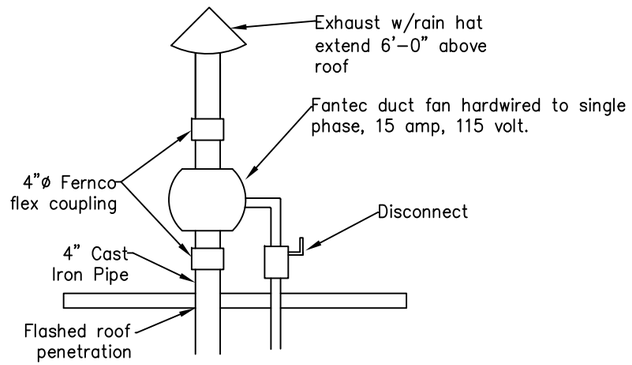
H:\Drawings\Phipps Courtlandt Crescent\SMP\Figure 8 2011–16



Typical Vent Pipe Cross–Section



Above Roof Detail



LEGEND

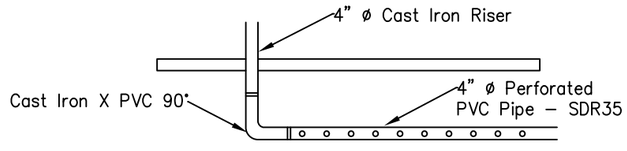
15–Mil Vapor Barrier Under Slab

4" Diameter Perforated PVC Pipe

4" Diameter Riser Vent to Roof with Sample Port and Magnehelic Gauge

Elevations Shown Refer to Top of Slab

Typical Cast Iron Connection Details



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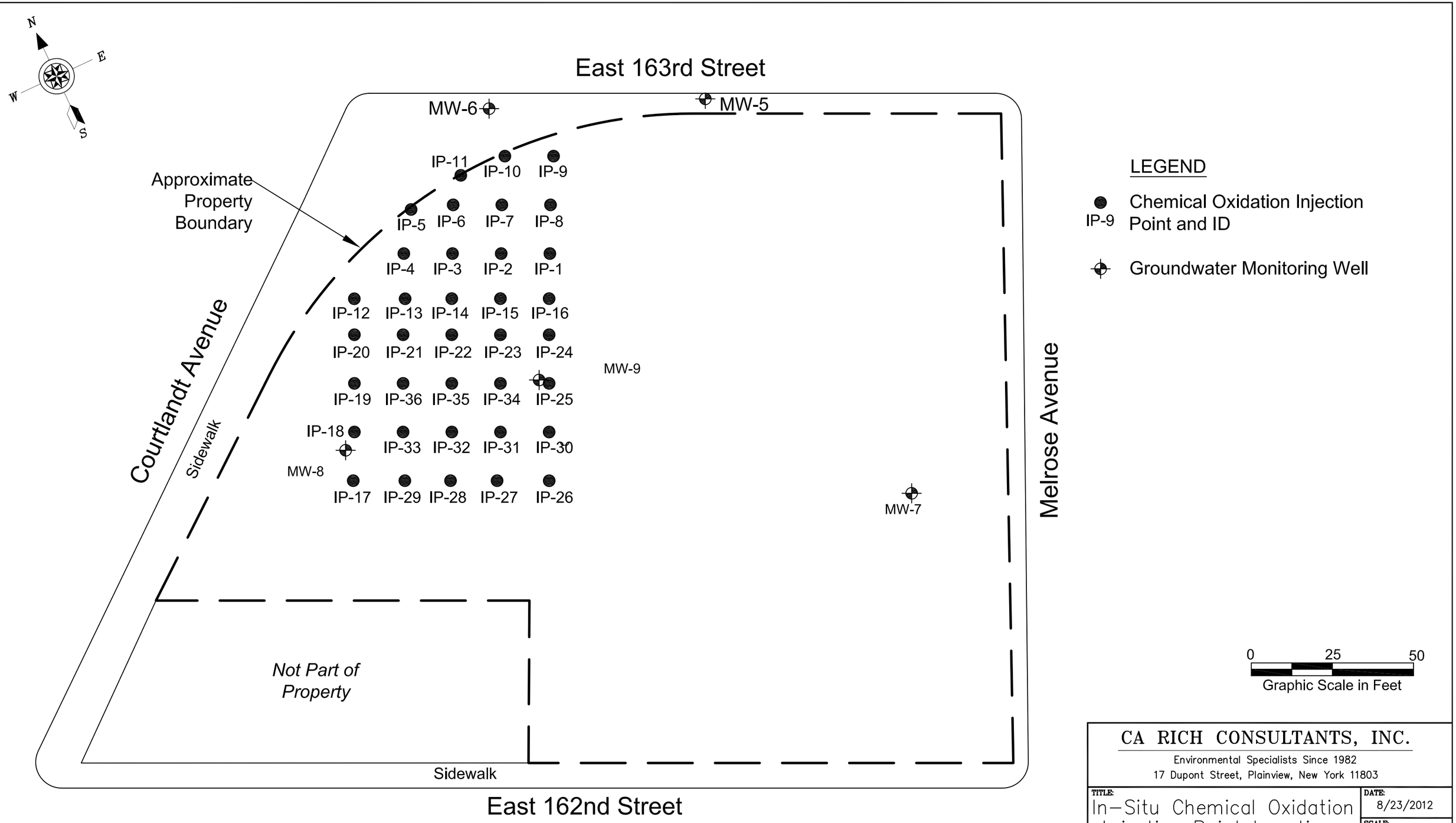
17 Dupont Street, Plainview, New York 11803

Stephen J. Osmundsen, P.E.

Consulting Engineer

514 Pantigo Road # 16, East Hampton New York 11937

TITLE: As–Built Vapor Barrier, SSDS Layout, & Vent Pipe Cross–Section		DATE: 11/2/2011
		SCALE: AS SHOWN
FIGURE: 9	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: S.T.M.
DRAWING NO: 2011–26		APPR. BY: D.S.



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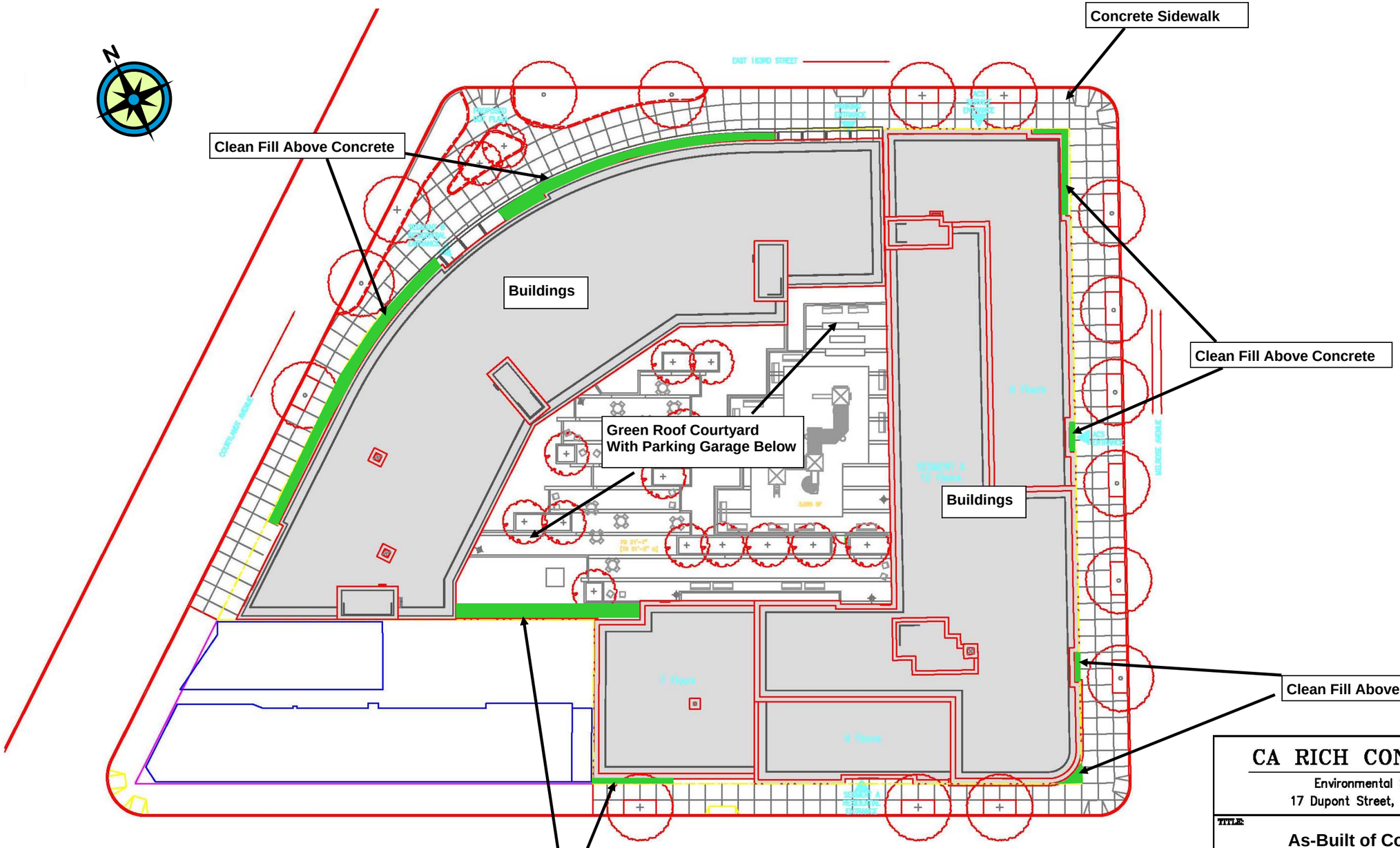
17 Dupont Street, Plainview, New York 11803

TITLE: In-Situ Chemical Oxidation Injection Point Locations	DATE: 8/23/2012
	SCALE: AS SHOWN
FIGURE: 10	DRAWN BY: J.T.C.
DRAWING NO: 2011-2	Courtlandt Crescent 383 East 162nd Street Bronx, New York
	APPR. BY: D.S.

H:\Drawings\Phipps Courtlandt Crescent\SMP\Figure 10 2011-2



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TITLE: As-Built of Composite Cover System		DATE: 11/1/2011
		SCALE: AS SHOWN
FIGURE: 11	Courtlandt Crescent 383 East 162nd Street Bronx, NY	DRAWN BY: R.J.I.
DRAWING NO: 2011-10		APPR. BY: D.S.

East 163rd Street

Courtlandt Avenue

Melrose Avenue

East 162nd Street

EP-1 EP-2 EP-3 EP-4 EP-5 EP-6 EP-7 EP-8 EP-9 EP-10 EP-11 EP-12 EP-13 EP-14 EP-15 EP-16 EP-17 EP-18 EP-19 EP-20 EP-21 EP-22 EP-23 EP-24 EP-25 EP-26 EP-27 EP-28 EP-29 EP-30 EP-31 EP-32 EP-33 EP-34 EP-35 EP-36 EP-37 EP-38 EP-39 EP-40 EP-41 EP-42 EP-43 EP-44 EP-45 EP-46 EP-47 EP-48 EP-49 EP-50 EP-51 EP-52 EP-53 EP-54 EP-55 EP-56 EP-57 EP-58 EP-59 EP-60 EP-61 EP-62 EP-63 EP-64

Not Part of Property

Approximate Property Boundary

LEGEND

EP-38 Endpoint Sample Location

Extent of Excavation

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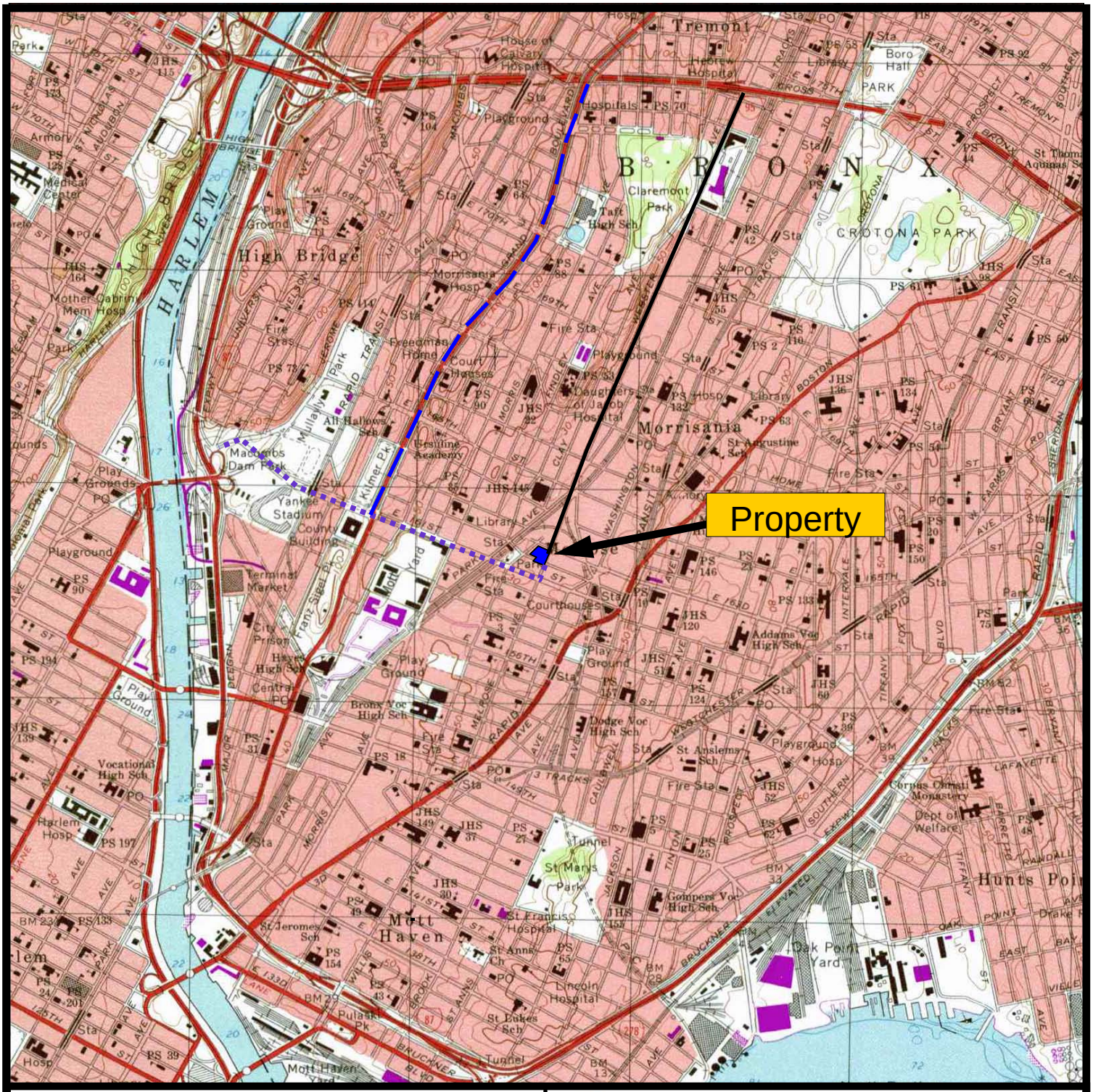
17 Dupont Street, Plainview, New York 11803

TITLE: Extent of Soil Excavation & Endpoint Sample Locations	DATE: 8/10/2012
	SCALE: AS SHOWN
FIGURE: 12	DRAWN BY: J.T.C./S.T.M.
DRAWING NO: 2012-5A	Courtlandt Crescent 383 East 162nd Street Bronx, New York
	APPR. BY: D.S.



ALTERNATE TRUCK ROUTE 1

ALTERNATE TRUCK ROUTE 2

ALTERNATE TRUCK ROUTE 3

APPROX. SCALE (ft.)

0 1,200 2,400

N

Adapted from USGS 1995 Central Park Quadrangle Map.

CA RICH CONSULTANTS, INC.
17 Dupont Street,
Plainview, NY 11803

TITLE: **TRUCK ROUTE MAP**

DATE: **2/22/11**

SCALE: **AS SHOWN**

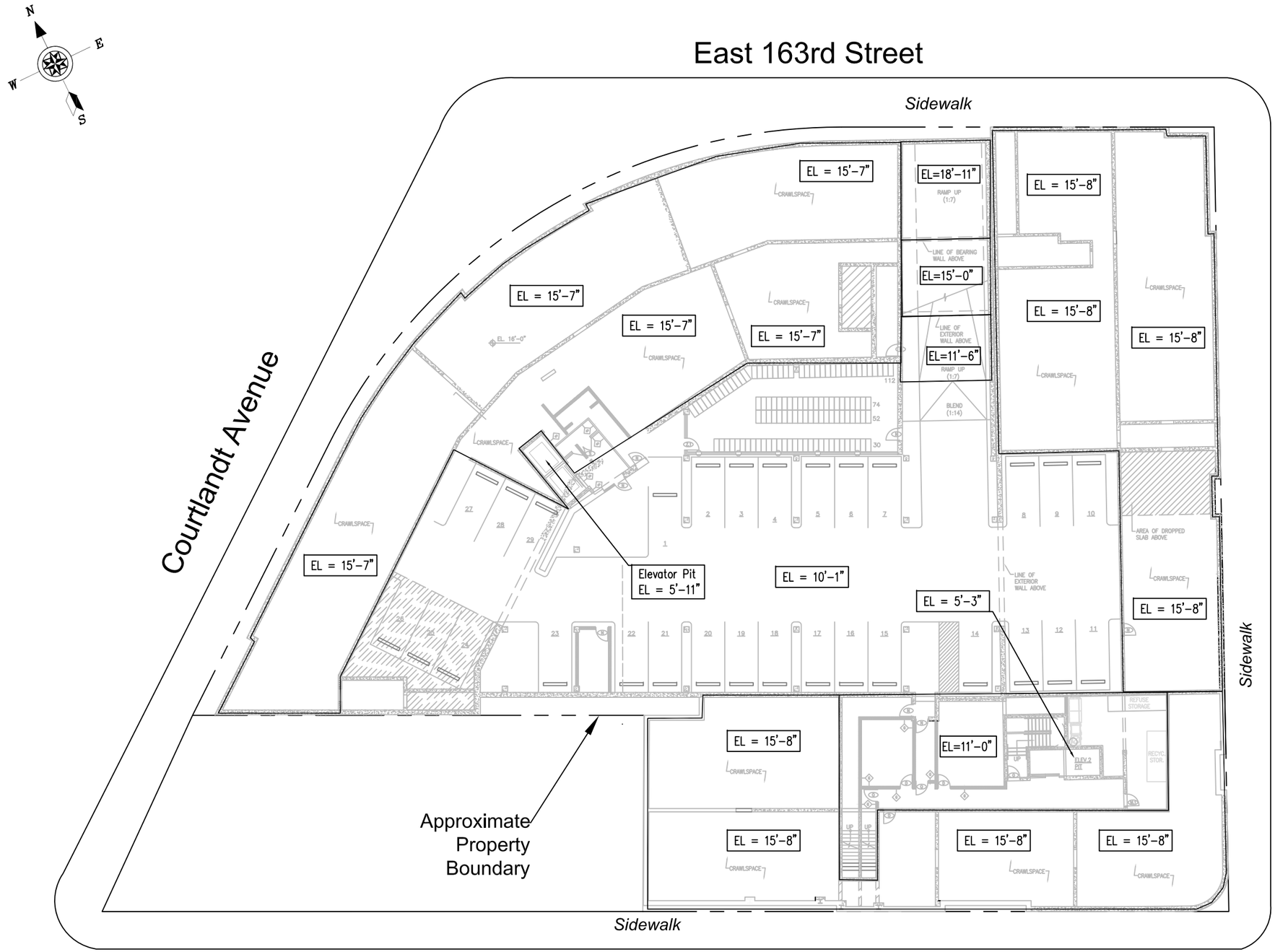
FIGURE: **13**

DRAWING:

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

DRAWN BY: **J.T.C.**

APPR. BY: **D.S.**



Legend

EL = 15'-7" — Elevation in Feet Above Mean Sea Level

Notes:
1) Elevations Obtained From Survey Provided By Fehringer Surveying, P.C.

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Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

Stephen J. Osmundsen, PE
Consulting Engineer
514 Pantigo Road 316, East Hampton, New York 11937

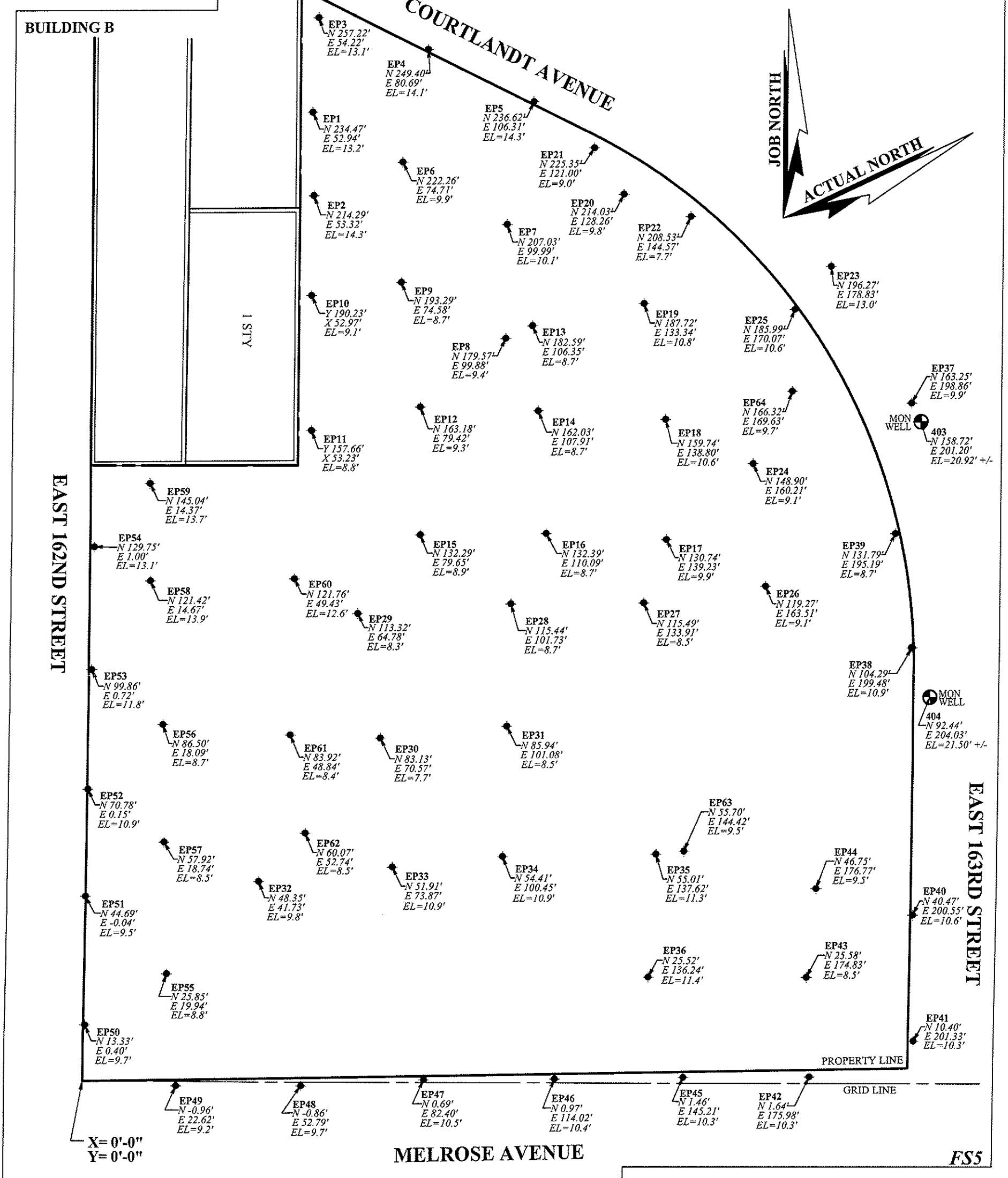
TITLE: Elevations of Residual Management Zone		DATE: 11/30/12
		SCALE: AS SHOWN
FIGURE: 14	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: S.T.M.
DRAWING NO: 2012-69A		APPR. BY: S.J.O.

Figure: 15

ENDPOINT SAMPLE LOCATIONS

BLOCK: 2408
LOTS: 35,41,43,44, 45,46,51,52,53

TOTAL LOT AREA:
SQ. FT.:
ACRES:



FS5

NOTE: COORDINATE VALUES RELATE TO JOB GRID SYSTEM (0,0).

● : INDICATES LOCATION OF EXCAVATION ENDPOINT SAMPLE

⊕ : INDICATES LOCATION OF MONITORING WELL

THIS SURVEY IS CERTIFIED TO:

1.
2.

SCALE: 1" = 25'

SURVEYED: SEPTEMBER 8, 2011

SURVEY OF PROPERTY SITUATED IN:
COURTLANDT CRESCENT
383 EAST 162ND STREET
BOROUGH OF BRONX
COUNTY OF BRONX
CITY OF NEW YORK
STATE OF NEW YORK

UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY

GUARANTEES INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

FEHRINGER SURVEYING, P.C.
ROBERT FEHRINGER
LICENSED LAND SURVEYOR

2200 JACKSON AVENUE
SEAFORD, N.Y. 11783
(516) 763 - 5515 FAX NO. (516) 763 - 5525

Figure: 15

APPENDICES

APPENDIX A
EXCAVATION WORK PLAN

A-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:

Mandy Yau
Project Manager
NYSDEC Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101
(718) 482-4897
Email: mxyau@gw.dec.state.ny.us

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 29 CFR 1910.120;
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix E of this document;
- Identification of disposal facilities for potential waste streams;

- ∀ Identification of sources of any anticipated backfill, along with all required chemical testing results.

Any excavation beneath the composite cover system will be conducted under the Community Air Monitoring Plan (see Appendix F).

A-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 off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

At a minimum, a hose connected to a NYS fire hydrant will be available at the Site for dust control. Depending on the scope of the excavation, a dedicated water truck with water cannon may be required. 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.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-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 Plan.

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, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

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.

A-5 MATERIALS TRANSPORT OFF-SITE

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 washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Exact truck transport routes will be determined after a disposal facility is selected. All trucks loaded with Site materials will exit the vicinity of the Site using only approved truck routes. Suggested Truck Routes are illustrated on Figure 13. These are 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 off-site 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 stoping and idling in the neighborhood outside the project site. 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 on-site to the extent possible in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All 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 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site 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.

Non-hazardous historic fill and contaminated soils taken off-site 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).

A-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Table 10. 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 on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site 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.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

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. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 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 orange snow fencing material or equivalent material 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 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. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-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 backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are the lower of the protection of public health or protection of groundwater soil cleanup objectives for restricted residential use per Table 375-6.8b of 6 NYCRR listed in Table 10. 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.

A-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall 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 shall 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 identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 CONTINGENCY PLAN

If 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.

A-13 COMMUNITY AIR MONITORING PLAN

A figure showing the location of air sampling stations based on generally prevailing wind conditions will be developed. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. Volatile organic compounds will be monitored at the downwind perimeter of the work area on a continuous basis using a PID. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for regulatory personnel to review. In addition, particulates should be continuously monitored upwind using a personal Dataram, downwind and within the work area at temporary particulate monitoring stations during excavation activities. If the downwind particulate level is 150 µg/m3 greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for regulatory personnel to review. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers. The generic CAMP for the Site is presented in Appendix F of the SMP.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor screening methods to be used on a routine basis will include use of a PID meter to screen for VOCs and olfactory observations by Field Technicians. 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 Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site 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 on-site 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.

A-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of dedicated on-site 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.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

A-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

The rodent plan includes the following:

- Within the construction Site, tamper resistant rodent bait stations will be installed in appropriate locations and active rodent burrows will be baited.

- Upon installation, each bait station will be baited, labeled, and secured to the ground. Bait will be replenished and bait stations relocated as necessary to control rodent populations. A baiting program will be initiated prior to mobilization by the contractor in the construction area. Regular inspections and rebaiting of bait stations will be performed to ensure rodents will not be dispersed by construction activities and that rodents will not infest work areas.

Safety signs will be posted on the Site, which will include a copy of the product label and MSDS for the rodenticide in used. Signs will also list practical medical treatment, first aid procedures, and antidote. Caution signs in English and Spanish will be posted when bait stations are placed in areas accessible to the general public, domestic animals, and pets.

APPENDIX B
ENVIRONMENTAL EASEMENT

APPENDIX C
METES AND BOUNDS

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS ERECTED, SITUATE, LYING AND BEING IN THE BOROUGH AND COUNTY OF BRONX, CITY AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MELROSE AVENUE WITH THE SOUTHERLY SIDE OF EAST 163RD STREET;

RUNNING THENCE SOUTHERLY ALONG THE WESTERLY SIDE OF MELROSE AVENUE, 200.04 FEET TO THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF MELROSE AVENUE WITH THE NORTHERLY SIDE OF EAST 162ND STREET;

THENCE WESTERLY ALONG THE NORTHERLY SIDE OF EAST 162ND STREET, 149.40 FEET;

THENCE NORTHERLY ON A LINE FORMING AN INTERIOR ANGLE OF 89 DEGREES 40 MINUTES 00 SECONDS WITH THE NORTHERLY SIDE OF EAST 162ND STREET, 50.01 FEET;

THENCE WESTERLY ON A LINE FORMING AN EXTERIOR ANGLE OF 89 DEGREES 40 MINUTES 00 SECONDS WITH THE LAST MENTIONED COURSE, 115.07 FEET TO A POINT ON THE EASTERLY SIDE OF COURTLANDT AVENUE;

THENCE NORTHERLY ALONG THE EASTERLY SIDE OF COURTLANDT AVENUE, 77.89 FEET;

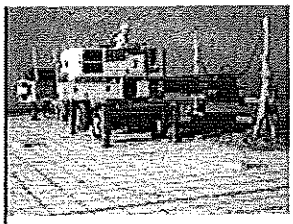
THENCE NORTHERLY AND EASTERLY ALONG COURTLANDT AVENUE ALONG AN ARC OF A CURVE BEARING TO THE RIGHT HAVING A RADIUS OF 146.00 FEET, 161.305 FEET TO THE SOUTHERLY SIDE OF EAST 163RD STREET;

THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF EAST 163RD STREET, 94.968 FEET TO THE POINT OR PLACE OF BEGINNING.

APPENDIX D
VAPOR BARRIER SPECIFICATIONS, REVISED SSDS AS-BUILT DRAWINGS AND SPECIFICATIONS

Stego® Wrap Vapor Barrier

STEGO INDUSTRIES, LLC



Vapor Retarders
07260, 03300

1 Product Name
Stego Wrap Vapor Barrier

2 Manufacturer
Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3 Product Description
USES: Stego Wrap is used as a true below-slab vapor barrier, and as a protection course for below grade waterproofing applications.
COMPOSITION: Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only the highest grade of prime, virgin, polyolefin resins.
SIZE: Stego Wrap Vapor Barrier comes in rolls 14' x 140' or 1,960 ft²
WEIGHT: Stego Wrap rolls weigh approximately 141 lb.

4 Technical Data
APPLICABLE STANDARDS
American Society for Testing & Materials (ASTM)

- ASTM E 1745 - Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs
- ASTM D 882 - Test Methods for Tensile Properties of Thin Plastic Sheeting
- ASTM D 1709 - Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method
- ASTM E 96 - Test Methods for Water Vapor Transmission of Materials
- ASTM E 154 - Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover
- ASTM E 631 - Terminology of Building Constructions
- ASTM F 1249 - Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
- ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

American Concrete Institute (ACI)

- ACI 302.1R-96 Minimum Thickness (10-mils)

ENVIRONMENTAL FACTORS
Stego Wrap Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

5 Installation
UNDERSLAB: Unroll Stego Wrap Vapor Barrier over an aggregate, sand or tamped earth base. Overlap all seams a minimum of 6" and tape using Stego Tape. All penetrations must be sealed using a combination of Stego Wrap, Stego Tape and/or Stego Mastic.

VERTICAL WALL: Install Stego Wrap Vapor Barrier over the waterproofing membrane while still tacky. Mechanically fasten Stego Wrap to the wall at the top with termination bar and concrete nails. Drape Stego Wrap down across the footer and under the french drain.

6 Availability & Cost
Stego Wrap Vapor Barrier is available nationally via building supply distributors. For current cost information, contact your local Stego Wrap distributor or Stego Industries' sales department.

7 Warranty
Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

8 Maintenance
None required.

9 Technical Services
Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or via the website: www.stegoindustries.com

10 Filing Systems

- Stego Industries' website
- Buildsite
- MasterSpec
- SpecSource

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP VAPOR BARRIER

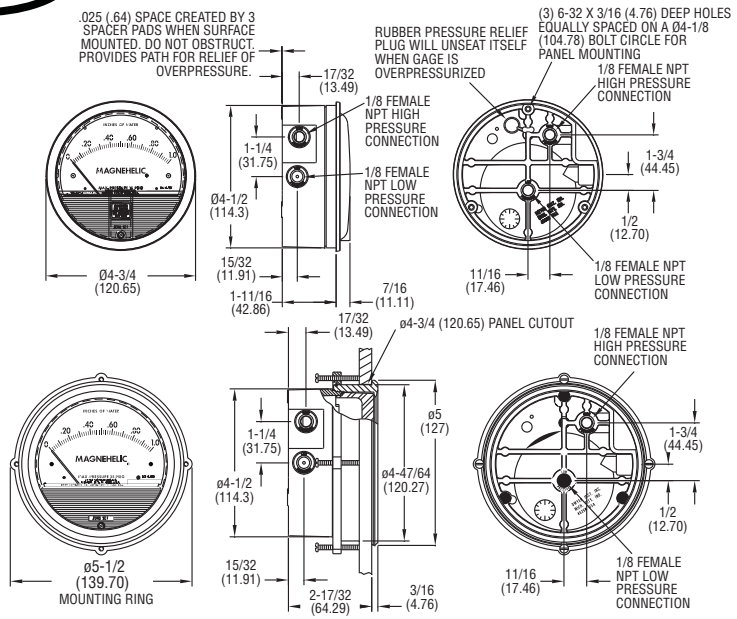
Property & Test	Stego Wrap Vapor Barrier
Underslab Vapor Retarders, ASTM E 1745 Class A	Exceeds
Water Vapor Permeance, ASTM F 1249	0.0084 perms (*0.0035 WVTR)
Tensile Strength, ASTM D 882	79.6 lbf./in.
Puncture Resistance, ASTM D 1709	2326 grams
Chemical Resistance, ASTM E 154	Unaffected
Life Expectancy, ASTM E 154	Indefinite
Thickness	15 mils

Note: perm unit = grains/(ft² *hr* in.Hg) * WVTR water vapor transmission rate

Stego, the stegosaurus logo, and the yellow product color are registered trademarks of Stego Industries.

Bulletin A-27

Magnehelic® Differential Pressure Gage



**The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.*

STANDARD GAGE ACCESSORIES: Two 1/8˝ NPT plugs for duplicate pressure taps, two 1/8˝ pipe thread to rubber tubing adapters and three flush mounting adapters with screws.

MP AND HP GAGE ACCESSORIES: Mounting ring and snap ring retainer substituted for 3 adaptors, 1/4" compression fittings replace 1/8" pipe thread to rubber tubing adaptors.

OVERPRESSURE PROTECTION: Standard Magnehelic® Differential Pressure Gages are rated for a maximum pressure of 15 psig and should not be used where that limit could be exceeded. Models employ a rubber plug on the rear which functions as a relief valve by unseating and venting the gage interior when over pressure reaches approximately 25 psig (excludes MP and HP models). To provide a free path for pressure relief, there are four spacer pads which maintain .023˝ clearance when gage is surface mounted. Do not obstruct the gap created by these pads.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases. (Natural Gas option available.)
Wetted Materials: Consult factory.
Housing: Die cast aluminum case and bezel, with acrylic cover. (MP model has polycarbonate cover).
Accuracy: ±2% of full scale (±3% on - 0, -100 Pa, -125 Pa, 10MM and ±4% on -00, - 00N, -60 Pa, -6MM ranges), throughout range at 70°F (21.1°C).
Pressure Limits: -20˝ Hg to 15 psig.† (-0.677 bar to 1.034 bar); MP option: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).
Overpressure: Relief plug opens at approximately 25 psig (1.72 bar), standard gages only. The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.
Temperature Limits: 20 to 140°F (-6.67 to 60°C). *Low temperature models available as special option.
Size: 4˝ (101.6 mm) diameter dial face.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Process Connections: 1/8˝ female NPT duplicate high and low pressure taps - one pair side and one pair back.
Weight: 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).
Agency Approvals: RoHS.

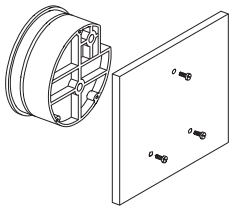
†For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options.

Note: May be used with hydrogen when ordering Buna-N diaphragm. Pressure must be less than 35 psi.

INSTALLATION

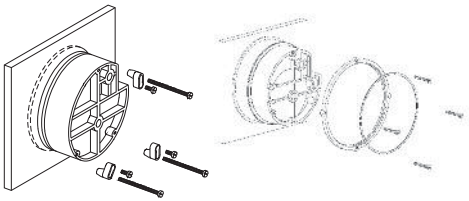
Select a location free from excessive vibration and where the ambient temperature will not exceed 140°F (60°C). Also, avoid direct sunlight which accelerates discoloration of the clear plastic cover. Sensing lines may be run any necessary distance. Long tubing lengths will not affect accuracy but will increase response time slightly. Do not restrict lines. If pulsating pressures or vibration cause excessive pointer oscillation, consult the factory for ways to provide additional damping.
All standard Magnehelic® Differential Pressure Gages are calibrated with the diaphragm vertical and should be used in that position for maximum accuracy. If gages are to be used in other than vertical position, this should be specified on the order. Many higher range gages will perform within tolerance in other positions with only rezeroing. Low range models of 0.5" w.c. plus 0.25" w.c. and metric equivalents must be used in the vertical position only.

SURFACE MOUNTING



Locate mounting holes, 120° apart on a 4-1/8" dia. circle. Use No. 6-32 machine screws of appropriate length.

FLUSH MOUNTING



Provide a 4-9/16" dia. (116 mm) opening in panel. Provide a 4-3/4" dia. (120 mm) opening for MP and HP models. Insert gage and secure in place with No. 6-32 machine screws of appropriate length, with adapters, firmly secured in place.

PIPE MOUNTING

To mount gage on 1-1/4" - 2" pipe, order optional A-610 pipe mounting kit.

TO ZERO GAGE AFTER INSTALLATION

Set the indicating pointer exactly on the zero mark, using the external zero adjust screw on the cover at the bottom. Note that the zero check or adjustment can only be made with the high and low pressure taps both open to atmosphere.

OPERATION

Positive Pressure: Connect tubing from source of pressure to either of the two high pressure ports. Plug the port not used. Vent one or both low pressure ports to atmosphere.
Negative Pressure: Connect tubing from source of vacuum or negative pressure to either of the two low pressure ports. Plug the port not used. Vent one or both high pressure ports to atmosphere.
Differential Pressure: Connect tubing from the greater of two pressure sources to either high pressure port and the lower to either low pressure port. Plug both unused ports.
When one side of the gage is vented in dirty, dusty atmosphere, we suggest an A-331 Filter Vent Plug be installed in the open port to keep inside of gage clean.

A. For portable use of temporary installation use 1/8" pipe thread to rubber tubing adapter and connect to source of pressure with flexible rubber or vinyl tubing.
B. For permanent installation, 1/4" O.D., or larger, copper or aluminum tubing is recommended.

MAINTENANCE

No lubrication or periodic servicing is required. Keep case exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gage to atmosphere and re-zero. Optional vent valves should be used in permanent installations. The Series 2000 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

WARNING

Attempted field repair may void your warranty. Recalibration or repair by the user is not recommended.

TROUBLE SHOOTING TIPS

Gage won't indicate or is sluggish.

1. Duplicate pressure port not plugged.
2. Diaphragm ruptured due to overpressure.
3. Fittings or sensing lines blocked, pinched, or leaking.
4. Cover loose or "O"ring damaged, missing.
5. Pressure sensor, (static tips, Pitot tube, etc.) improperly located.
6. Ambient temperature too low. For operation below 20°F (-7°C), order gage with low temperature, (LT) option.

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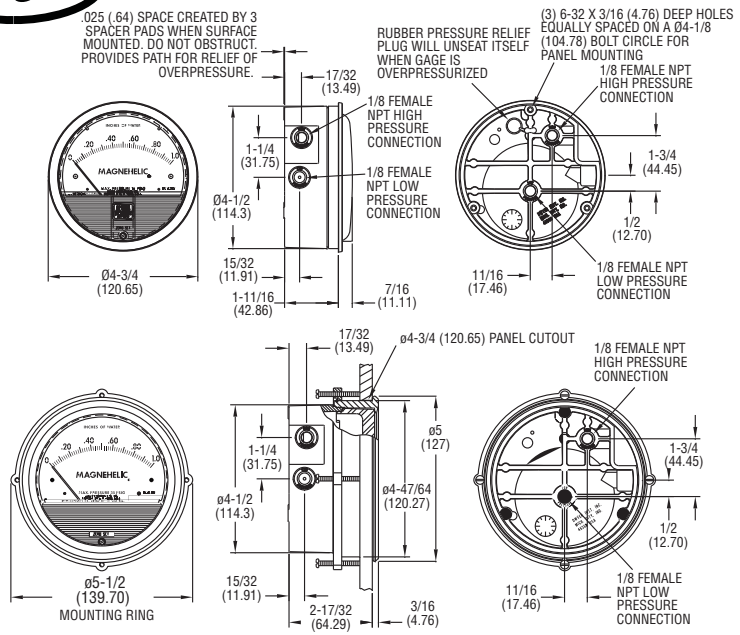
Magnehelic® Differential Pressure Gage
INSTRUCCIONES Y LISTA DE PARTES



(El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicona para el diafragma.)

Accesorios: Tapones 1/8" NPT para las conexiones duplicadas, dos adaptadores de rosca 1/8" NPT a tubo de goma; y tres adaptadores para montaje al ras y tornillos.

Accesorios para Los Modelos MP y HP: El anillo de montaje y el retensor del anillo de presión son substituidos por 3 adaptadores, accesorios de compresión de 1/4" remplazan a los adaptadores de rosca 1/8" a tubo de goma.

Protección Para Sobrepresión: Los Manómetros Diferenciales Magnehelic Estándar están clasificados para una presión máxima de 15 psi y no se deberían de usar donde el límite puede excederse. Los modelos emplean un tapón de goma en el trasero que funciona como una válvula de alivio desmontándose y ventilando el interior del instrumento cuando la sobrepresión alcanza aproximadamente 25 psig. (Los modelos MP y HP son excluidos) Para proveer un camino libre para el alivio de presión, el instrumento viene con rodilleras que mantienen un espacio de .023" cuando el instrumento es montado en superficie. No bloque el espacio creado por estas rodilleras.

† Para aplicaciones con alto ciclo de velocidad dentro de la clasificación de presión total del instrumento, la próxima clasificación mas alta es recomendada. Vea las opciones de media y alta presión.

El instrumento puede ser usado con hidrogeno cuando se ordena con diafragma de Buna-N. La presion tiene que ser menos de 35 psi.

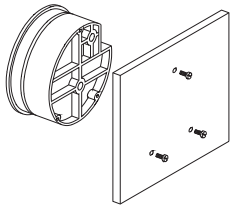
ESPECIFICACIONES

Servicio: aire y gases no combustibles, gases compatibles. (ópcion disponible para uso con gas natural).
Materiales Mojados: Consulte con la fábrica.
Carcasa: Caja y anillo de retención de aluminio fundido a presión con tapadera de acrílico. (El modelo MP tiene la tapadera de policarbonato.)
Exactitud: ±2% de fondo de escala a 21 °C
Mod. 2000-0 ±3%; Mod. 2000-00 ±4%
Límite de Presión: -20 Hg. a 15 psig. † (-0.677 bar a 1,034 bar); opción MP: 35 psig (2.41 bar), opción HP: 80 psig (5.52 bar).
Sobrepresión: El tapón de alivio se abre aproximadamente a los 25 psig, modelos estandard únicamente. El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicio para el diafragma.
Límite de Temperatura: -6.67 a 60ºC. * Modelos de baja temperatura disponibles como opción especial.
Dimensiones: diám. 120,65 mm x 55,6 prof.
Orientación de Montaje: El diafragma debe ser usado solo en posición vertical. Consulte con la fábrica para otras orientaciones de posición.
Conexiones: 1/8" NPT para alta y baja presión, duplicadas (atrás, a los lados).
Peso: 510 g, MP y HP 963 g.
Aprobación de la agencia: RoHS.

Instalacion

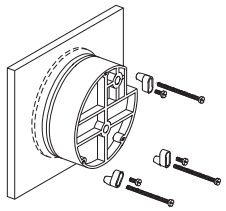
Seleccione un lugar libe de exceso de vibraciones, y donde la temperatura ambiente no supere los 60°C. Evite luz solar directa, para evitar decoloración de la cubierta plástica. Las conexiones de proceso pueden tener cualquier longitud sin afectar la exactitud, pero pueden extender el tiempo de respuesta del instrumento. Si hay pulsación de presión o vibración, consulte a fábrica sobre medios de amortiguación.
Los MAGNEHELIC han sido calibrados con el diafragma vertical, y deben ser usados en esas condiciones. Para otras posiciones, se debe especificar en la orden de provisión. Los de rango elevado pueden ser usados en diversas posiciones, pero se debe reajustar el cero. Los modelos de la serie 2000-00 y equivalentes métricos deben ser usados solo verticalmente.

Montaje en Superficie



Perfore tres orificios separados 120° sobre una circunferencia de 105 mm de diám. y sostenga el instrumento con tres tornillos 6-32 de long. apropiada.

Montaje alineado



Perfore un circulo de 115 mm de diám. en el panel, y sostenga el instrumento mediante los.

Montaje Sobre Pipa

Para montar el instrumento sobre pipas de 32 a 50 mm de diám., ordene el adaptador opcional A-610.

Puesta a Cero Después de Instalar

Deje las conexiones de presión abiertas a atmósfera y ajuste a cero desde tornillo del panel frontal.

Operacion

Presión Positiva: Conecte la tubería desde la fuente de presión a cualquiera de las dos conexiones de alta presión (HIGH), bloqueando la no usada; Las conexiones de baja (LOW) presión pueden dejarse uno o los dos abiertos a la atmósfera.
Presión Negativa: Repita el procedimiento anterior, conectado en este caso las conexiones de baja presión (LOW). Deje las otras conexiones abiertas.
Presión diferencial: Conecte el tubo correspondiente a la presión más positiva al cualquiera de los conectores de alta presión (HIGH) bloqueando el no usado, y la más baja presión o presión negativa (vacío) al conector de baja presión (LOW). Puede usarse cualquier conector de cada par, dejando siempre uno bloqueado. Si se deja una conexión abierta a la atmósfera, se recomienda el uso de un filtro tipo A-331 en el lugar correspondiente para mantener limpio el interior del instrumento. Para uso portable, o instalación temporaria, uso adapta dores para rosca de tubo de 1/89 a tubo flexible, y conecte a proceso mediante una tubería de goma, o equivalente. Para instalación permanente, se recomienda el uso de tubo de cobre o aluminio de por lo menos 1/4" de diám. exterior.

No se requiere mantenimiento específico alguno, ni lubricación. Periódicamente, desconecte el instrumento, ventee la presión acumulada, y reajuste el cero. Para instalaciones permanentes, se debe usar un juego de válvulas de montaje permanente para el venteo.
El instrumento de Serie 2000 no puede ser re parado en el campo y debería de ser regresado si reparos son necesarios (Reparos en el campo no deben de ser intentados y pueden cancelar la garantía.). Asegurarse de incluir una descripción breve del problema más cualquier notas pertinentes a la aplicación para devolución de productos antes de enviar el instrumento.

Cuidado! : La recalibración en campo puede invalidar la garantía. No se recomienda la recalibracion por parte del usuario. En caso necesario envie el instrumento con transporte pago a:

Localización De Fallas

• *El instrumento no indica, o es lento en reacción.*
1. Conexión duplicada abierta.
2. Diafragma roto por sobrepresión.
3. Tubería de conexión perforada, con pérdidas o pinchazos.
4. Anillo de retención flojo, u "O " ring dañado.
5. Conexión a proceso indebida o inadecuada.
6. Temperatura muy baja. Para este caso ordene tipos LT (baja temperatura).

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New York State Department of Environmental Conservation
Division of Environmental Remediation
One Hunters Point Plaza, 47-40 21st Street, Long Island City, New York 11101
Phone: (718) 482-4995 • **Fax:** 718-482-6358
Website: www.dec.ny.gov

Joe Martens
Commissioner

July 9, 2015

Courtlandt Crescent Associates, L.P.
Michael Wadman
902 Broadway, 13th Floor
New York, NY 10010

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter
Courtlandt Crescent, Bronx
Bronx County, Site No.: C203058

Dear Michael Wadman (as the Certifying Party):

The Department has reviewed your Periodic Review Report (PRR) and IC/EC Certification for following period: 05/31/2014 to 04/30/2015.

The Department hereby accepts the PRR and associated Certification. The frequency of Periodic Reviews for this site is 1 year, your next PRR is due on May 30, 2016. You will receive a reminder letter and updated certification form 45-days prior to the due date.

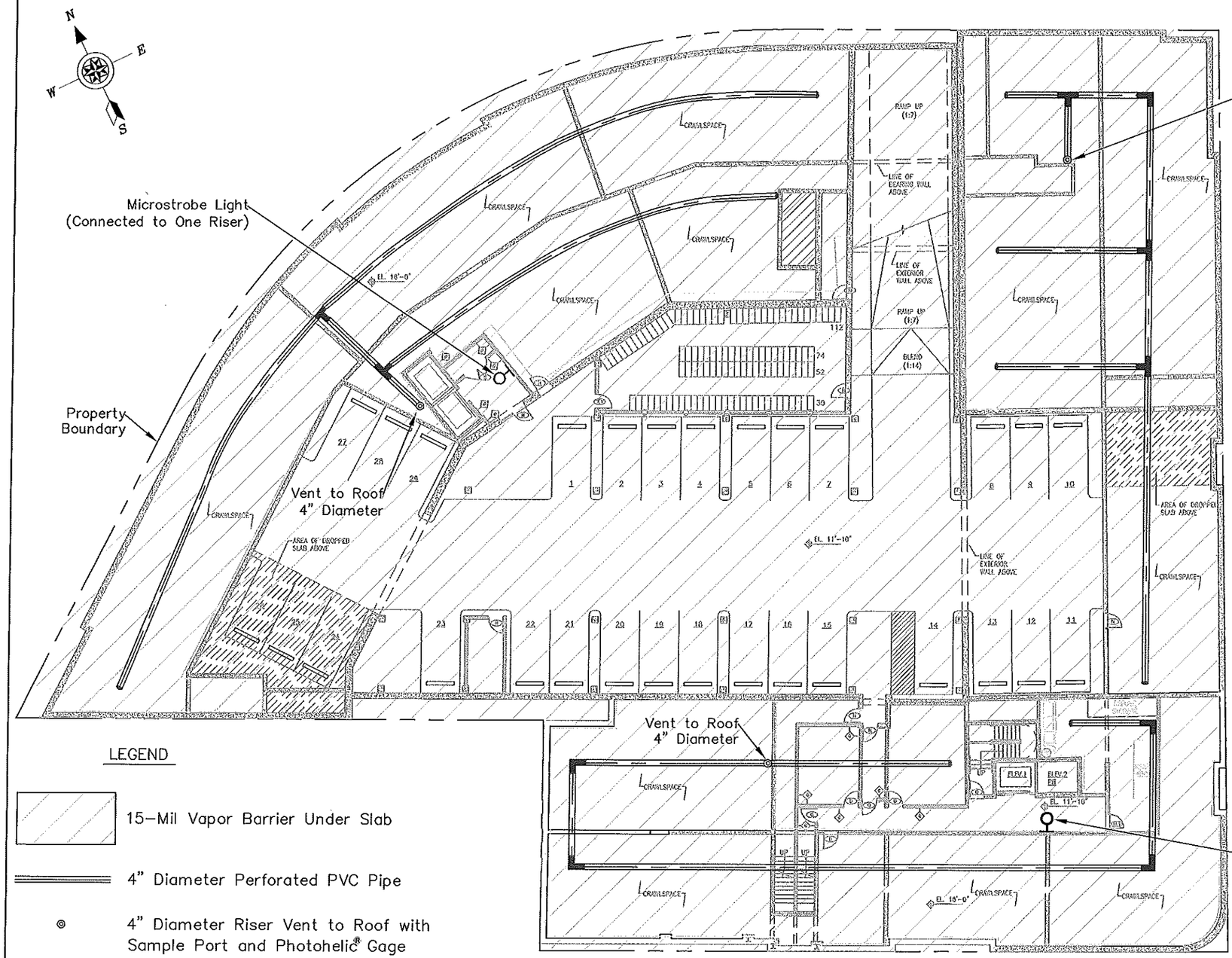
After careful consideration and consultation with Department of Health, your request to convert the sub-slab depressurization system into a passive system and to reduce the frequency of groundwater monitoring to annual from semi-annual is approved. Please submit relevant pages of the Site Management Plan with the language change, including the cover page, to the Department and to all document repositories.

If you have any questions, or need additional forms, please contact me at 718-482-4897 or e-mail: man-tsz.yau@dec.ny.gov.

Sincerely,

Mandy Yau
Project Manager

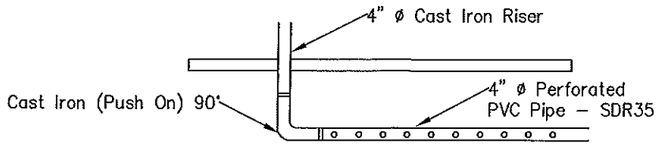
cc: Chris Doroski, DOH Project Manager
Jane O'Connell, RHWRE
Michelle Lapin, AKRF
Eric Park, AKRF



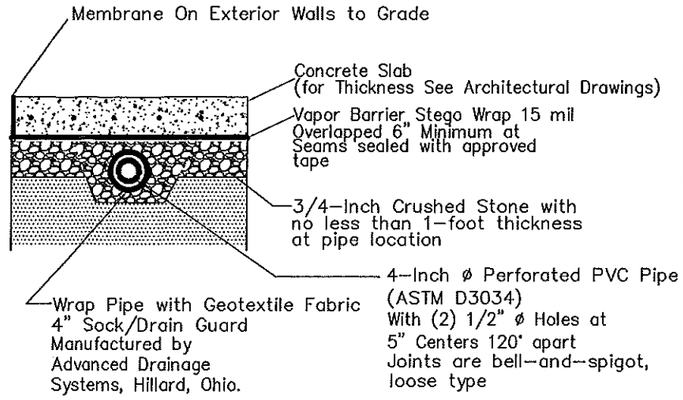
LEGEND

- 15-Mil Vapor Barrier Under Slab
- 4" Diameter Perforated PVC Pipe
- 4" Diameter Riser Vent to Roof with Sample Port and Photohelic® Gage
- PVC End Cap
- PVC 90
- PVC Tee
- Microstrobe Light (Socket Screw-in) Hardwired to Photohelic® Pressure Switch/Gage and warning Sign

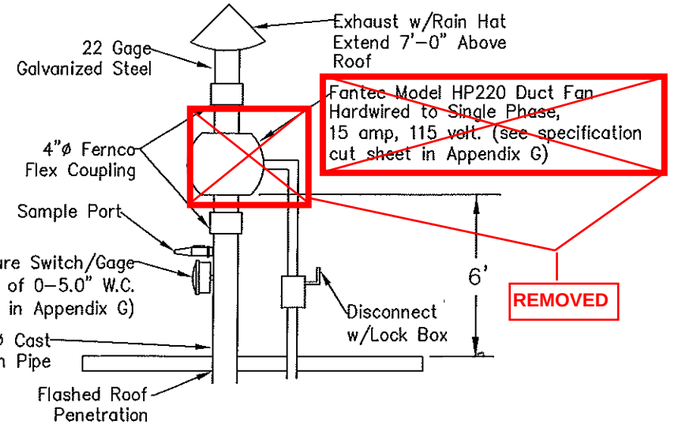
Typical Cast Iron Connection Details



Typical Vent Pipe Cross-Section



Above Roof Detail (NTS)



Stephen J. Osmundsen, P.E.
Consulting Engineer
514 Pantigo Road # 16, East Hampton New York 11937

TITLE: As-Built Vapor Barrier, SSDS Layout, & Vent Pipe Cross-Section		DATE: 11/30/12
		SCALE: AS SHOWN
FIGURE: 8	Courtlandt Crescent 383 East 162nd Street Bronx, New York	DRAWN BY: S.T.M.
DRAWING NO: 2011-26		APPR. BY: S.J.O.

APPENDIX E
REVISED GENERIC HEALTH AND SAFETY PLAN

Health and Safety Plan for Remedial Work

COURTLANDT CRESCENT
383 EAST 162ND STREET
BRONX, NEW YORK

August 2012

Prepared for:

Courtlandt Crescent Associates, L.P.
902 Broadway, 13th Floor
New York, NY 10010-6033

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, New York 11803

Health & Safety Plan

for

Courtlandt Crescent
383 East 162nd Street
Bronx, New York

1.0 INTRODUCTION

This Health and Safety Plan (HASP) is developed for utilization during implementation of the Site Management Plan (SMP) at the above referenced location (the Site). The HASP is to be enforced by CA RICH's Project Health and Safety Manager and the on-site Health & Safety Coordinator (HSC) or his/her designee. The on-site HSC will interface with the Project Manager and is vested with the authority to make field decisions including the termination of on-site activities if an imminent health and safety hazard, condition or related concern arises. Information and protocol in the HASP is applicable to all on-site personnel who will be entering the designated work zone.

2.0 POTENTIAL HAZARDS

2.1 Chemical Hazards

Based on the results of the Remedial Investigation (RI), the known contaminants of concern in groundwater contaminants are the Volatile Organic Compounds (VOCs) benzene, Methyl Tertiary Butyl Ether (MTBE), chloroform, and 1,1,1-trichloroethane; and the naturally occurring metals iron, magnesium, manganese, and sodium.

The organic chemicals listed above are described as "sweet" or "aromatic" smelling and are narcotic in high concentrations. Acute exposure to significant concentrations of these chemicals can cause irritation of the skin, eyes and mucus membrane, headache, dizziness, nausea, and in high enough concentrations, loss of consciousness and death *(Sax, 1984)*. These compounds are suspected to be carcinogenic with chronic exposure.

Physical properties and additional toxicological information is included in Appendix A.

2.2 Other Health & Safety Risks

Normal physical hazards associated with using drilling and excavation equipment and hand tools as well as hazards associated with adverse climatic conditions (heat & cold) or physical site-related debris represent a certain degree of risk to be assumed by on-site personnel.

Certain provisions in this HASP, specifically the use of personnel protective equipment, may tend to increase the risk of physical injury, as well as susceptibility to cold or heat stress. This is primarily due to restrictions in dexterity, hearing, sight, and normal body heat transfer inherent in the use of protective gear.

3.0 RISK MANAGEMENT

3.1 Work / Exclusion Zones

For the proposed remedial activity (eg. groundwater sampling, etc.), a work/exclusion zone will be established. Access to this area will be limited to properly trained, properly protected personnel directly involved with activity. Enforcement of the work/exclusion zone boundaries is the responsibility of the on-site Health & Safety Coordinator.

3.2 Personnel Protection

Health & Safety regulatory personnel have developed different levels of personnel protection to deal with differing degrees of potential risks of exposure to chemical constituents. The levels are designated as **A, B, C,** and **D** and are ranked according to the amount of personnel protection afforded by each level. Level **A** is the highest level of protection and Level **D** is the lowest level of protection.

The different levels are primarily dependent upon the degree of respiratory protection necessary, in conjunction with appropriate protective clothing. Levels of protection mandate a degree of respiratory protection. However, flexibility exists within the lower levels (B, C, and D) concerning proper protective clothing.

The four levels of protection were developed for utilization in situations which involve suspected or known atmospheric and/or environmental hazards including airborne contamination and skin-affecting substances.

It is anticipated that all of the investigation work will be performed using Level D protection (no respiratory protection with protective clothing requirements limited to long sleeved shirts, long pants or coveralls, work gloves and steel-toe leather work boots).

Level D may be modified by the HSC to include protective clothing or equipment (Saran-coated disposable coveralls or PVC splash suits, safety glasses, hard hat with face shield, and chemically resistant boots) based upon physical hazards, skin contact concerns, and real-time monitoring.

Real-time air monitoring for total airborne organics using either a Photo-Ionization Detector (PID) or a Flame-Ionization Detector (FID) will determine if and when an upgrade from Level D to a higher level of respiratory protection is warranted. Decisions for an upgrade from Level D to higher levels of protection, mitigative actions, and/or suspension of work are the responsibility of the Project Manager and/or the designated on-site HSC.

3.3 Air Monitoring

The HSC or his/her properly trained assignee will conduct ‘Real Time’ air monitoring for total organic vapors. 'Real time' monitoring refers to the utilization of instrumentation, which yields immediate measurements. The utilization of real time monitoring helps determine immediate or long-term risks to on-site personnel and the general public, the appropriate level of personnel respiratory protection necessary, and actions to mitigate the recognized hazard.

3.3.1. Organic Vapor

A. Instrumentation

Real time monitoring for Total Organic Vapor (TOV) utilizes either a PID or FID. The appropriate PID is an intrinsically safe Minirae 2000 PID or equivalent, which is factory calibrated to benzene. The appropriate FID is a Foxboro model 128 Organic Vapor Analyzer (OVA), which is factory calibrated to methane.

B. Application

Organic vapor monitoring is performed as outlined in the NYSDOH Community Air Monitoring Plan. Specifically, monitoring shall be conducted at the downwind perimeter of the work zone periodically during work activities. If total organic vapor (TOV) levels exceed 5 milligrams per meter cubed (mg/m^3) above established pre-work background levels, work activities will be halted and monitoring will be continued under the provision of a Vapor Emission Response Plan (outlined in Section 5).

3.4 Worker Training

Personnel working in the contamination area must be trained, fit-tested, and medically-certified (OSHA 29 CFR 1910. 134).

All personnel working within the work/exclusion area must confirm their participation in an ongoing health-surveillance program. The program must consist of an initial "baseline" examination stipulated by OSHA (29 CFR 1910. 134). The examination is designed to screen for evidence of adverse effects of occupational exposure (particularly to toxic substances) and determine personnel fitness with respect to the use of respiratory protection.

Each worker enlisted in the medical surveillance program receives an annual examination similar to the baseline exam to evaluate irregularities or trends in his/her health with respect to potential exposure. Upon termination of employment, contract/subcontract or job completion, each worker/employee must take an 'exit examination' identical to the annual exam. All physicals will be performed by licensed physicians with medical histories to be confidentially maintained by their employer.

Prior to any work, all workers involved with the project should be aware of the potential chemical, physical and biological hazards discussed in this document, as well as the general safety practices outlined below. A safety briefing by the on-site HSC and/or assistant designee shall take place at the outset of work activities.

3.5 General Safety Practices

The following safety practices shall be followed by all project personnel:

1. Avoid unnecessary skin exposure to subsurface materials. Sleeved shirts tucked into long pants (or coveralls), work gloves, and steel-toe leather work boots are required unless modified gear is approved by the HSC. Remove any excess residual soil from clothes prior to leaving the site.

2. No eating, drinking, gum or tobacco chewing, or smoking allowed in designated work areas. Thoroughly wash hands prior to these activities outside the work area. Avoid sitting on the ground during breaks or while eating and drinking. Thoroughly wash all exposed body areas at the end of the workday.

3. Some symptoms of acute exposure include: dizziness, light-headedness, drowsiness, headache, and nose/eye/skin irritation. If these symptoms are experienced or strong odor is detected, leave the work area and immediately report the incident to the on-site HSC.

3.6 Enforcement

Enforcement of the Site Safety Plan will be the responsibility of the HSC or his/her designee. The HSC or his/her designee should be on-site on a full-time basis and perform or directly oversee all aspects of Project Health & Safety operations including: air monitoring; environmental mitigation; personnel respiratory and skin protection; general safety practices; documentation; emergency procedures and protocol; and reporting and recordkeeping as described below.

3.7 Reporting & Recordkeeping

Incidents involving injury, symptoms of exposure, discovery of contained (potentially hazardous) materials, or unsafe work practices and/or conditions should be immediately reported to the HSC.

A logbook must be maintained on-site to document all aspects of HASP enforcement. The log is paginated and dated with entries made on a daily basis in waterproof ink, initialed by the HSC or designee. Log entries should include date and time of instrument monitoring, instrument type, measurement method, test results, calibration and maintenance information, as well as appropriate mitigative actions responding to detections. Miscellaneous information to be logged may include weather conditions, reported complaints or symptoms, regulatory inspections, and reasons to upgrade personnel protection above the normal specification (Level D).

4.0 EMERGENCIES

4.1 EMERGENCY RESPONSE SERVICES

(1)	**HOSPITAL** Bronx Lebanon Hospital 1650 Grand Concourse Bronx, New York 10457	**(718) 590-1800**
(2)	**AMBULANCE**	**911**
(3)	**FIRE DEPARTMENT** **HAZARDOUS MATERIALS**	**911**
(4)	**POLICE DEPARTMENT**	**911**
(5)	**POISON CONTROL CENTER**	**(800) 222-1222**

The preceding list and associated attached map (Figure 1) illustrating the fastest route to the nearest hospital must be conspicuously posted in areas of worker congregation and adjacent to all on-site telephones (if any).

4.2 EMERGENCY PROCEDURES

4.2.1 Contact or Exposure to Suspected Hazardous Materials

In the event of a fire, chemical discharge, medical emergency, workers are instructed to immediately notify the HSC and proper emergency services (posted). Should physical contact with unknown or questionable materials occur, immediately wash the affected body areas with clean water and notify the HSC. Anyone experiencing symptoms of exposure should exit the work area, notify the HSC, and seek medical attention.

4.2.2 Personnel Decontamination, First Aid, and Fire Protection

The first step in the treatment of skin exposure to most chemicals is to rinse the affected area with water. For this reason, adequate amounts of potable water and soap are maintained on-site in a clearly designated and readily-accessible location. Portable emergency eyewash stations and a first aid kit must be made available and maintained in the same locations as the potable water. Fire extinguishers are also to be maintained on-site in designated locations. All on-site personnel are to be made aware of the locations of the above-mentioned on-site Health & Safety accommodations during the initial Health and Safety briefing.

4.2.3 Ingress/egress

Clear paths of ingress/egress to work zones and site entrances/exits must be maintained at all times. Unauthorized personnel are restricted from accessing the Site.

5.0 VAPOR EMISSIONS REPONSE PLAN

If the ambient air concentration of organic vapors exceeds 5 mg/m^3 above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 mg/m^3 above background, work activities can resume. If the organic vapor levels are greater than 5 mg/m^3 over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 mg/m^3 over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the HSC will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 mg/m^3 over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 mg/m^3 above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and, if organic vapor levels are approaching 5 mg/m^3 above background for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 mg/m^3 above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the HASP of the Corrective Action Plan will be notified.

2. The local police authorities will immediately be contacted by the HSC and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSC.

6.0 HEALTH & SAFETY PLAN REFERENCES

1. American Conference Governmental Industrial Hygienists, 1989; Threshold Limit Values and Biological Exposure Indices, 111 Pp.

2. Geoenvironmental Consultants, Inc.; 1987; Safety & Operations At Hazardous Materials Sites

3. NIOSH Guide To Chemical Hazards, 2002, US Department Of Health And Human Services, Centers For Disease Control

4. US Department Of Labor Occupational Safety & Health Administration, 1989; Hazardous Waste Operations And Emergency Response Interim Final Rule, 29 CFR Part 1910

5. Sax, N. I. Dangerous Properties Of Industrial Materials; © 1984

7.0 KEY PERSONNEL

Responsibility	Name and Phone Number	Task Description
Project Manager	Eric Park (646) 388-9532	Oversee/coordinate all technical aspects for the project
Site Safety Officer	Kevin Hennigan (646) 388-9571	Coordinate and inspect all health and safety operations from the project site
Client Representative:	Michael Wadman (212) 243-9090	
Project Manager Alternate:	Deborah Shapiro (646) 388-9544	
Site Safety Officer Alternate:	Deborah Shapiro (646) 388-9544	

Directions to 1650 Grand Concourse, Bronx, NY 10457-7606

Total Time: 6 mins, Total Distance: 1.52 mi

Summary and Notes

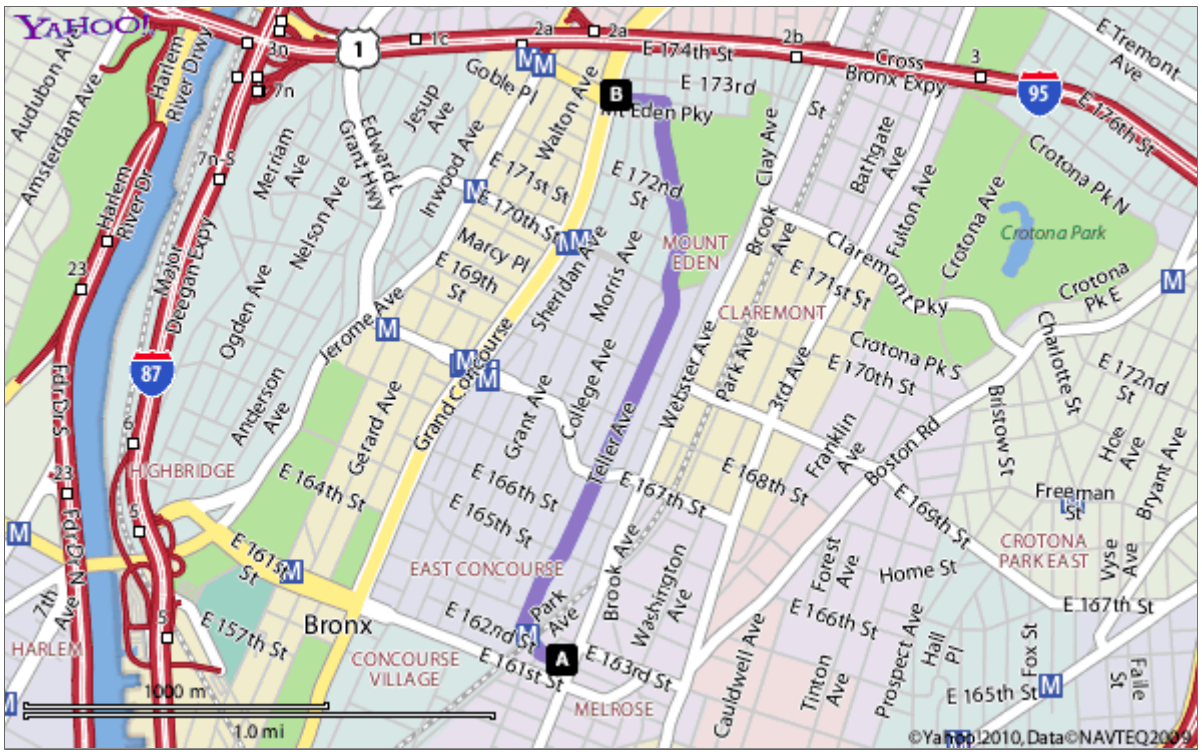
START A **383 E 162nd St, Bronx, NY 10451-4141**

FINISH B **1650 Grand Concourse, Bronx, NY 10457-7606**

Figure 1 Directions to Bronx Lebanon Hospital 1650 Grand Concourse (718) 590-1800

		Distance
A	1. **Start at 383 E 162ND ST, BRONX going toward COURTLANDT AVE**	go **525** ft
	2. Turn R on **TELLER AVE**	go **1.16** mi
	3. Continue on **MORRIS AVE**	go **0.13** mi
	4. Turn L on **MT EDEN PKY**	go **0.12** mi
	5. Turn R on **GRAND CONCOURSE**	go **85** ft
B	6. **Arrive at 1650 GRAND CONCOURSE, BRONX, on the** R	

Time: 6 mins, Distance: 1.52 mi



When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

Appendix A

Toxicological Information

NIOSH Publication No. 2005-149: September 2005

NIOSH Pocket Guide to Chemical Hazards

Dieldrin

CAS 60-57-1

$C_{12}H_8Cl_6O$

RTECS IO1750000

Synonyms & Trade Names
HEOD; 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo,exo-5,8-dimethanonaphthalene

DOT ID & Guide
2761 151

Exposure Limits

NIOSH REL: Ca TWA 0.25 mg/m^3 [skin] See Appendix A

OSHA PEL: TWA 0.25 mg/m^3 [skin]

IDLH Ca [50 mg/m^3] See: 60571

Conversion

Physical Description
Colorless to light-tan crystals with a mild, chemical odor. [insecticide]

MW: 380.9	BP: Decomposes	MLT: 349°F	Sol: 0.02%
VP(77°F): 8 x 10-7 mmHg	IP: ?		Sp.Gr: 1.75
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Solid

Incompatibilities & Reactivities
Strong oxidizers, active metals such as sodium, strong acids, phenols

Measurement Methods
NIOSH S283 (II-3)
See: NMAM or OSHA Methods

Personal Protection & Sanitation (See protection)
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter. Click here for information on selection of N, R, or P filters./Any appropriate escape-type, self-contained breathing apparatus
Important additional information about respirator selection

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Headache, dizziness; nausea, vomiting, malaise (vague feeling of discomfort), sweating; myoclonic limb jerks; clonic, tonic convulsions; coma; [potential occupational carcinogen]; in animals: liver, kidney damage

Target Organs central nervous system, liver, kidneys, skin

Cancer Site [in animals: lung, liver, thyroid & adrenal gland tumors]

See also: INTRODUCTION See ICSC CARD: 0787 See MEDICAL TESTS: 0077

NIOSH Home | NIOSH Search | Site Index | Topic List | Contact Us

RM Number: 8467 (Renewals)
MSDS Number: 8467
RM Name: 4,4'-DDE
Issued: May, 1992

MATERIAL SAFETY DATA SHEET

National Institute of Standards and Technology
Standard Reference Materials Program
Gaithersburg, Maryland 20899
(301) 975-2019

SECTION I. MATERIAL IDENTIFICATION

Material Name: 4,4'-DDE

Description: This material is a degradation product of DDT found as an impurity in DDT residues. A unit of RM 8467 consists of one vial containing approximately 100 mg of 4,4'-DDE.

Other Designations: *p,p'*-DDE, 1,1'-(dichloroethenyldiene)bis[4-chlorobenzene]); 2,2-bis-(4-chlorophenyl)-1,1-dichloroethene; ethylene, 1,1-dichloro-2,2-bis(*p*-chlorophenyl); 1,1'-(dichloroethenylidene)bis(4-chloro-benzene); dichlorodiphenyldichloroethylene

Chemical Formula: $Cl\text{-}C_6\text{-}H_4\text{-}C\text{-}(C\text{-}Cl_2)\text{-}C_6\text{-}H_4\text{-}Cl$

CAS Reg. No.: 72-55-9

DOT Classification: Class 6.1 Poison

Manufacturer/Supplier: Available from a number of suppliers.

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Components	Nominal Concentration	Limits and Toxicity Data
4,4'-DDE	~ 100%	*No TLV established.

Rat, Oral:

LD_{50}: 880 mg/kg

Mouse, Oral:

LD_{50}: 700 mg/kg

*The suggested ACGIH-TWA for particulates not otherwise regulated is 10 mg/m³ for total dust.

SECTION III. PHYSICAL/ CHEMICAL CHARACTERISTICS

4,4'-DDE

Appearance and Odor: A white crystalline solid.
Molecular Weight: 318.03
Melting Point (Range): 88 - 90 °C
Solubility in Water: 0.12 ppm
Solubility in Other Compounds: Soluble in ethanol, acetone, dichloromethane, fat and most organic solvents.

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

(Method Used): N/A

Autoignition Temperature: N/A

Flammability Limits in Air (Volume %): UPPER: N/A
LOWER: N/A

Extinguishing Media: Use dry chemical, water spray of regular foam.

Special Fire Procedures: Fire-fighters should wear self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode and other protective clothing when fighting fires involving this material.

Unusual Fire and Explosion Hazards: This material is a negligible fire hazard when exposed to heat or flame. This

material may burn but does not ignite readily. Containers may explode in the heat of a fire.

This pesticide material with strong oxidizers can present a fire and explosion hazard.

SECTION V. REACTIVITY DATA

Stability: __X__ **Stable** ____ **Unstable**

Conditions to Avoid: Avoid incompatible materials.

Incompatibility (Materials to Avoid): Keep this material from strong oxidizing materials.

See Section IV: Fire and Explosion Hazard Data.

Hazardous Decomposition or Byproducts: Thermal decomposition may include toxic and corrosive fumes of chlorides and toxic oxides of carbon.

Hazardous Polymerization: _____ **Will Occur** __X__ **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: __X__ **Inhalation** __X__ **Skin** __X__ **Ingestion**

Health Hazards (Acute and Chronic): Effects for **organochlorine pesticides** (i.e. DDT) may occur for exposures of 4,4'-DDE. Ingestion can occur through oral administration or may occur if sufficient amounts are absorbed from the lungs. A study of occupational exposure to DDT reported a higher frequency of white blood cells with chromosomal abnormalities among workers with high DDT blood levels. Menstrual irregularities are the most frequent complaint among migrant farm workers were observed in another study. Signs of liver and kidney damage can develop. Liver *necrosis* (localized death of living tissue) has been reported in experimental animals. Death may be due to respiratory failure or ventricular fibrillation. Symptoms of poisoning may not occur until several hours after ingestion.

This material may cross the placenta and be excreted in breast milk. It may also impair fertility. Stimulants such as epinephrine or ephedrine may induce *ventricular fibrillation* (a muscular twitching involving individual muscle fibers, acting without coordination, of the chamber of the heart which receives blood from a corresponding atrium and from which blood is forced into the arteries).

Signs and Symptoms of Exposure: Ingestion of organochlorine pesticides may cause gastrointestinal effects of nausea, vomiting, diarrhea, and stomach pains. Confusion, apprehension, irritability, excitability, dizziness, headache, disorientation,

weakness, paresthesias, muscle twitching, tremor, stupor, coma and convulsions may also be experienced.

Medical Conditions Generally Aggravated by Exposure: N/A

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	____	X
In the International Agency for Research (IARC) Monographs	____	X
By the Occupational Safety and Health Administration (OSHA)	____	X

Note: A high incidence of liver-cell tumors was observed in mice administered DDE orally (IARC).

The carcinogenicity of this material is still undetermined.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Contact medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Contact medical assistance if necessary.

Inhalation: If inhaled, remove the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial respiration. Contact medical assistance if necessary.

Ingestion: If ingested, wash out mouth with water. If the person is conscious and not convulsing, induce vomiting by administering syrup of ipecac (when vomiting occurs, keep the head above below the hips to prevent aspiration). Medical personal can administer activated charcoal followed by gastric lavage. Follow with a saline cathartic. **DO NOT** give fats or oils. Intestinal lavage with 20% mannitol (200 mL) by stomach tube is also useful. Give artificial respiration with oxygen if respiration is depressed. Treat symptomatically and supportively.

TARGET ORGAN(S) OF ATTACK: The blood, liver and kidneys.

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled: Notify safety personnel of major spills and/or leaks. Evacuate all nonessential personnel. Ventilate closed area before entering. Stop the leak if you can do so without risk. Use water spray to reduce vapors. Small spills can be absorbed with sand or other absorbent material and place in containers for later disposal. Small dry spills can be recovered with a clean shovel and placed in covered containers. For larger spills, dike far ahead of the spill for later disposal.

Note: Reportable Quantity (RQ): 1 Pound (4.536 Grams)

The Superfund Amendments and Reauthorization Act (SARA) section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local Emergency Planning Committee and the State Emergency Response Commission (40 CFR 355.40). If the release of this substance is reportable under Cercla Section 103, The National Response Center must be notified immediately.

Waste Disposal: Disposal must be in accordance with 40 CFR 165 recommended procedures for the disposal and storage of pesticides and pesticide containers. Follow all Federal, state and local regulations.

Handling and Storage: Employees handling this material must wear protective clothing and gloves to prevent skin contact and splash-proof or dust-resistant safety goggles to prevent eye contact with this substance. Any chemical cartridge respirator with an organic vapor cartridge in combination with a dust and mist filter must be worn to prevent inhalation. The specific respirator selected must be based on contamination levels found in the work place, must be based on the specific operation, must not exceed the working limits of the respirator and must be jointly approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA).

Note: Contact lenses pose a special problem; soft lenses may absorb irritants and all lenses concentrate them. **DO NOT** wear contact lenses in the lab.

Provide local exhaust ventilation. Ventilation equipment must be explosion proof. Store material in accordance with 40 CFR 165 recommended procedures for the disposal and storage of pesticides and pesticide containers. Vials, as received, should be kept tightly sealed, protected from light, and stored in a refrigerator or freezer. Emergency eye wash station must be available.

SECTION VIII. SOURCE DATA/ OTHER COMMENTS

Sources: Occupational Health Services, MSDS *2,2-Bis-(4-Chlorophenyl)-1,1-Dichloroethene*, February 21, 1991.
Hawley's Condensed Chemical Dictionary, 11th ed., 1987.
Webster's Ninth New Colligiate Dictionary, 1990.

Carmelita S. Davis (301) 975-6439
National Institute of Standards and Technology
Standard Reference Materials Program
Gaithersburg, Maryland 20899

Note: Physical and chemical data contained in this MSDS are provided for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references, however NIST does not certify the data on the MSDS. The certified values for this material are given only on the NIST Certificate of Analysis.

NIOSH Publication No. 2005-149: September 2005

NIOSH Pocket Guide to Chemical Hazards

DDT

CAS 50-29-3

$(C_6H_4Cl)_2CHCCl_3$

RTECS KJ3325000

Synonyms & Trade Names
p,p'-DDT; Dichlorodiphenyltrichloroethane; 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane

DOT ID & Guide
2761 151

Exposure Limits

NIOSH REL: Ca TWA 0.5 mg/m^3 See Appendix A

OSHA PEL: TWA 1 mg/m^3 [skin]

IDLH Ca [500 mg/m^3] See: 50293

Conversion

Physical Description
Colorless crystals or off-white powder with a slight, aromatic odor. [pesticide]

MW: 354.5	BP: 230°F (Decomposes)	MLT: 227°F	Sol: Insoluble
VP: 0.0000002 mmHg	IP: ?		Sp.Gr: 0.99
Fl.P: 162-171°F	UEL: ?	LEL: ?	

Combustible Solid

Incompatibilities & Reactivities
Strong oxidizers, alkalis

Measurement Methods
NIOSH S274 (II-3)
See: NMAM or OSHA Methods

Personal Protection & Sanitation (See protection)
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter. Click here for information on selection of N, R, or P filters./Any appropriate escape-type, self-contained breathing apparatus
Important additional information about respirator selection

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of

discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]

Target Organs Eyes, skin, central nervous system, kidneys, liver, peripheral nervous system

Cancer Site [in animals: liver, lung & lymphatic tumors]

See also: INTRODUCTION See ICSC CARD: 0034 See MEDICAL TESTS: 0065

NIOSH Home | NIOSH Search | Site Index | Topic List | Contact Us

NIOSH Publication No. 2005-149: September 2005

NIOSH Pocket Guide to Chemical Hazards

NPG Home | Introduction | Synonyms & Trade Names | Chemical Names | CAS Numbers | RTECS Numbers | Appendices | Search

Lead

CAS 7439-92-1

Pb

RTECS OF7525000

Synonyms & Trade Names
Lead metal, Plumbum

DOT ID & Guide

Exposure Limits

NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C [*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.]

OSHA PEL*: [1910.1025] TWA 0.050 mg/m^3 See Appendix C [*Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.]

IDLH 100 mg/m^3 (as Pb) See: 7439921 **Conversion**

Physical Description
A heavy, ductile, soft, gray solid.

MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 11.34
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities
Strong oxidizers, hydrogen peroxide, acids

Measurement Methods
NIOSH 7082, 7105, 7300, 7301, 7303, 7700, 7701, 7702, 9100, 9102, 9105; OSHA ID121, ID125G, ID206
See: NMAM or OSHA Methods

Personal Protection & Sanitation (See protection)
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap flush promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations (See Appendix E) NIOSH/OSHA

Up to 0.5 mg/m^3:
(APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators. Click here for information on selection of N, R, or P filters.
(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter

Up to 2.5 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Click here for information on selection of N, R, or P filters.
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter

(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Up to 100 mg/m^3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Click here for information on selection of N, R, or P filters./Any appropriate escape-type, self-contained breathing apparatus
Important additional information about respirator selection

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms 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; hypotension

Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue

See also: INTRODUCTION See ICSC CARD: 0052 See MEDICAL TESTS: 0127

NIOSH Home | NIOSH Search | Site Index | Topic List | Contact Us

NIOSH Publication No. 2005-149: September 2005

NIOSH Pocket Guide to Chemical Hazards

Mercury compounds [except (organo) alkyls] (as Hg)

CAS 7439-97-6 (metal)

RTECS OV4550000 (metal)

DOT ID & Guide
2809 172 (metal)

Hg (metal)

Synonyms & Trade Names
Mercury metal: Colloidal mercury, Metallic mercury, Quicksilver
Synonyms of "other" Hg compounds vary depending upon the specific compound.

Exposure Limits
NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 [skin]
Other: C 0.1 mg/m^3 [skin]

OSHA PEL†: C 0.1 mg/m^3

IDLH 10 mg/m^3 (as Hg) See: 7439976

Conversion

Physical Description
Metal: Silver-white, heavy, odorless liquid. [Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.]

MW: 200.6	BP: 674°F	FRZ: -38°F	Sol: Insoluble
VP: 0.0012 mmHg	IP: ?		Sp.Gr: 13.6 (metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Liquid

Incompatibilities & Reactivities
Acetylene, ammonia, chlorine dioxide, azides, calcium (amalgam formation), sodium carbide, lithium, rubidium, copper

Measurement Methods
NIOSH 6009; OSHA ID140
See: NMAM or OSHA Methods

Personal Protection & Sanitation (See protection)
Skin: Prevent skin contact
Eyes: No recommendation
Wash skin: When contaminated
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
Mercury vapor: NIOSH

Up to 0.5 mg/m^3:
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the compound of concern†
(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern†(canister)

Up to 2.5 mg/m^3:
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against the compound of concern†

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern†
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/PAPRTS(canister)
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 10 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure- demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus

Other mercury compounds: NIOSH/OSHA

Up to 1 mg/m^3:
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the compound of concern†
(APF = 10) Any supplied-air respirator

Up to 2.5 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern†(canister)

Up to 5 mg/m^3:
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against the compound of concern†
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern†
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/PAPRTS(canister)
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 10 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus
Important additional information about respirator selection

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms 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

Target Organs Eyes, skin, respiratory system, central nervous system, kidneys

See also: INTRODUCTION See ICSC CARD: 0056 See MEDICAL TESTS: 0136

MATERIAL SAFETY DATA SHEET

ALDON CORPORATION
221 Rochester Street
Avon, New York 14414-9409
(585) 226-6177

MSDS No.: BB0003
Effective Date: May 19, 2005

SECTION I NAME

Product	Barium
Chemical Synonyms	Barium Metal
Formula	Ba
Unit Size	up to 2.5 Kg.
C.A.S. No.	7440-39-3

24 HOUR EMERGENCY ASSISTANCE

CHEMTREC
800-424-9300
Day 585-226-6177

NFPA

Health	1
Fire	3
Reactivity	2

HMIS *

HAZARD RATING

MINIMAL	SLIGHT	MODERATE	SERIOUS	SEVERE
0	1	2	3	4

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Barium metal	100%	See Section V.
DANGER! FLAMMABLE SOLID! DANGEROUS WHEN WET.		
AVOID CONTACT WITH SKIN AND EYES.		

SECTION III PHYSICAL DATA

Melting Point (°F)	850°C (1562°F)	Specific Gravity (H_2O = 1)	3.74
Boiling Point (°F)	1695°C (3085°F)	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	N/A	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	React violently with water, liberates highly flammable gases.		
Appearance & Odor	Silver or gray, slightly lustrous, somewhat malleable metal; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable solid.	Flammable Limits in Air % by Volume	Lower	Upper
		N/A		
Extinguisher Media	Dry sand, powder, graphite, soda ash. Do **NOT** use water or carbon dioxide type extinguisher.			

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Do NOT use water to extinguish fires.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 138)

UNUSUAL FIRE AND EXPLOSION HAZARDS

Do **NOT** use water. Reaction with water produces explosive hydrogen gas and enough heat to ignite gas/air mixture plus toxic, corrosive Barium hydroxide solution.

D.O.T. **Water reactive solid, n.o.s., (Barium metal), 4.3, UN2813, PG II**

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA BB0003

Threshold Limited Value

Barium and soluble compounds, as Ba ACGIH 2001: TWA = 0.5 mg/m^3. RTECS No. CQ8370000

Effects of Overexposure

Caustic burns on skin, eyes and mucous membranes, corneal damage and blindness may result. Moderately toxic via oral exposure route. Target organs: Central nervous system, kidneys.

Emergency and First Aid Procedures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Do NOT flush with water. Carefully remove particles with cotton-tipped applicator. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable		**Conditions to Avoid**	Excessive temperature, heat, ignition source, water.
	Stable	X		

Incompatibility (Materials to Avoid) Water, acids, oxidizing agents, chlorinated and fluorinated hydrocarbons such as CCl_4.

Hazardous Decomposition Products Hydrogen (explosive), barium hydroxide solution (caustic/toxic).

Hazardous Polymerization		**Conditions to Avoid**
May Occur	**Will Not Occur**	Not applicable.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Recover for use if not contaminated. Collect and pack in dry, airtight container under paraffin oil, if possible. Do not sweep up material. Cover with dry sand. Do not allow material to contaminate water sources or sewers, reaction with water forms corrosive barium compounds.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

This material is a hazardous waste (as per RCRA) because of its reactivity. Disposal should be conducted by an EPA (RCRA) permitted disposer or an EPA (RCRA) permitted disposal facility.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) None needed in normal laboratory handling. If dusty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved dust mask or respirator.

Ventilation				
	Local Exhaust	Recommended.	**Special**	No.
	Mechanical (General)	Recommended.	**Other**	No.

Protective Gloves Rubber. **Eye Protection** Chemical safety goggles.

Other Protective Equipment Lab coat, apron, eye wash station, proper gloves, ventilation hood.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Keep container tightly closed when not in use.

Store in dry area, away from heat and other sources of ignition. Store under argon or paraffin oil in airtight container. Protect from moisture and air. Keep container dry.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing.

Revision No. 7	Date 05/19/05	Approved Michael Raszeja	Chemical Safety Coordinator MR

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

NIOSH Pocket Guide to Chemical Hazards

Benzene	CAS 71-43-2
C_6H_6	RTECS CY1400000
Synonyms & Trade Names Benzol, Phenyl hydride	DOT ID & Guide 1114 130

Exposure Limits	NIOSH REL: Ca TWA 0.1 ppm ST 1 ppm See Appendix A
	OSHA PEL: [1910.1028] TWA 1 ppm ST 5 ppm See Appendix F

IDLH Ca [500 ppm] See: 71432	Conversion 1 ppm = 3.19 mg/m^3

Physical Description
Colorless to light-yellow liquid with an aromatic odor. [Note: A solid below 42°F.]

MW: 78.1	BP: 176°F	FRZ: 42°F	Sol: 0.07%
VP: 75 mmHg	IP: 9.24 eV		Sp.Gr: 0.88
Fl.P: 12°F	UEL: 7.8%	LEL: 1.2%	

Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities
Strong oxidizers, many fluorides & perchlorates, nitric acid

Measurement Methods
NIOSH 1500, 1501, 3700, 3800; OSHA 12, 1005
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: No recommendation Provide: Eyewash, Quick drench	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, blood, central nervous system, bone marrow

Cancer Site [leukemia]

See also: INTRODUCTION See ICSC CARD: 0015 See MEDICAL TESTS: 0022

NIOSH Pocket Guide to Chemical Hazards

Ethyl benzene	CAS 100-41-4
$CH_3CH_2C_6H_5$	RTECS DA0700000
Synonyms & Trade Names Ethylbenzol, Phenylethane	DOT ID & Guide 1175 129

Exposure Limits	NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 125 ppm (545 mg/m^3)
	OSHA PEL†: TWA 100 ppm (435 mg/m^3)
IDLH 800 ppm [10%LEL] See: 100414	Conversion 1 ppm = 4.34 mg/m^3

Physical Description
Colorless liquid with an aromatic odor.

MW: 106.2	BP: 277°F	FRZ: -139°F	Sol: 0.01%
VP: 7 mmHg	IP: 8.76 eV		Sp.Gr: 0.87
Fl.P: 55°F	UEL: 6.7%	LEL: 0.8%	

Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities
Strong oxidizers

Measurement Methods
NIOSH 1501; OSHA 7, 1002
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: No recommendation	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA
Up to 800 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*/(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma

Target Organs Eyes, skin, respiratory system, central nervous system

See also: INTRODUCTION See ICSC CARD: 0268 See MEDICAL TESTS: 0098

NIOSH Pocket Guide to Chemical Hazards

m-Xylene	CAS 108-38-3
$C_6H_4(CH_3)_2$	RTECS ZE22760000
Synonyms & Trade Names 1,3-Dimethylbenzene; meta-Xylene; m-Xylol	DOT ID & Guide 1307 130

Exposure Limits	NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3)
	OSHA PEL†: TWA 100 ppm (435 mg/m^3)
IDLH 900 ppm See: 95476	Conversion 1 ppm = 4.34 mg/m^3

Physical Description
Colorless liquid with an aromatic odor.

MW: 106.2	BP: 282°F	FRZ: -54°F	Sol: Slight
VP: 9 mmHg	IP: 8.56 eV		Sp.Gr: 0.86
FI.P: 82°F	UEL: 7.0%	LEL: 1.1%	

Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.

Incompatibilities & Reactivities
Strong oxidizers, strong acids

Measurement Methods
NIOSH 1501, 3800; OSHA 1002
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: No recommendation	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA
Up to 900 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis

Target Organs Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys

See also: INTRODUCTION See ICSC CARD: 0085 See MEDICAL TESTS: 0243

NIOSH Pocket Guide to Chemical Hazards

o-Xylene

CAS 95-47-6

$C_6H_4(CH_3)_2$

RTECS ZE2460000

Synonyms & Trade Names
1,2-Dimethylbenzene; ortho-Xylene; o-Xylol

DOT ID & Guide
1307 130

Exposure Limits

NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3)

OSHA PEL†: TWA 100 ppm (435 mg/m^3)

IDLH 900 ppm See: 95476

Conversion 1 ppm = 4.34 mg/m^3

Physical Description
Colorless liquid with an aromatic odor.

MW: 106.2	BP: 292°F	FRZ: -13°F	Sol: 0.02%
VP: 7 mmHg	IP: 8.56 eV		Sp.Gr: 0.88
Fl.P: 90°F	UEL: 6.7%	LEL: 0.9%	

Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.

Incompatibilities & Reactivities
Strong oxidizers, strong acids

Measurement Methods
NIOSH 1501, 3800; OSHA 1002
See: NMAM or OSHA Methods

Personal Protection & Sanitation
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet (flammable)
Change: No recommendation

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA
Up to 900 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis

Target Organs Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys

See also: INTRODUCTION See ICSC CARD: 0084 See MEDICAL TESTS: 0243

NIOSH Pocket Guide to Chemical Hazards

p-Xylene	CAS 106-42-3
$C_6H_4(CH_3)_2$	RTECS ZE2625000
Synonyms & Trade Names 1,4-Dimethylbenzene; para-Xylene; p-Xylol	DOT ID & Guide 1307 130

Exposure Limits	NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 150 ppm (655 mg/m^3)
	OSHA PEL†: TWA 100 ppm (435 mg/m^3)
IDLH 900 ppm See: 95476	Conversion 1 ppm = 4.41 mg/m^3

Physical Description
Colorless liquid with an aromatic odor. [Note: A solid below 56°F.]

MW: 106.2	BP: 281°F	FRZ: 56°F	Sol: 0.02%
VP: 9 mmHg	IP: 8.44 eV		Sp.Gr: 0.86
Fl.P: 81°F	UEL: 7.0%	LEL: 1.1%	

Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.

Incompatibilities & Reactivities
Strong oxidizers, strong acids

Measurement Methods
NIOSH 1501, 3800; OSHA 1002
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: No recommendation	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA
Up to 900 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis

Target Organs Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys

See also: INTRODUCTION See ICSC CARD: 0086 See MEDICAL TESTS: 0243

NIOSH Pocket Guide to Chemical Hazards

Toluene	CAS 108-88-3
$C_6H_5CH_3$	RTECS XS5250000
Synonyms & Trade Names Methyl benzene, Methyl benzol, Phenyl methane, Toluol	DOT ID & Guide 1294 130

Exposure Limits	NIOSH REL: TWA 100 ppm (375 mg/m^3) ST 150 ppm (560 mg/m^3)
	OSHA PEL†: TWA 200 ppm C 300 ppm 500 ppm (10-minute maximum peak)
IDLH 500 ppm See: 108883	Conversion 1 ppm = 3.77 mg/m^3

Physical Description
Colorless liquid with a sweet, pungent, benzene-like odor.

MW: 92.1	BP: 232°F	FRZ: -139°F	Sol(74°F): 0.07%
VP: 21 mmHg	IP: 8.82 eV		Sp.Gr: 0.87
FI.P: 40°F	UEL: 7.1%	LEL: 1.1%	

Class IB Flammable Liquid: FI.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities
Strong oxidizers

Measurement Methods
NIOSH 1500, 1501, 3800, 4000; OSHA 111
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet (flammable) Change: No recommendation	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH
Up to 500 ppm: (APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*/(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms 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

Target Organs Eyes, skin, respiratory system, central nervous system, liver, kidneys

See also: INTRODUCTION See ICSC CARD: 0078 See MEDICAL TESTS: 0232

NIOSH Pocket Guide to Chemical Hazards

Lead	CAS 7439-92-1
Pb	RTECS OF7525000
Synonyms & Trade Names Lead metal, Plumbum	DOT ID & Guide

Exposure Limits	NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C (*Note: The REL also applies to other lead compounds (as Pb) – see Appendix C.)
	OSHA PEL*: (1910.1025) TWA 0.050 mg/m^3 See Appendix C (*Note: The PEL also applies to other lead compounds (as Pb) – see Appendix C.)

IDLH 100 mg/m^3 (as Pb) See: 7439921	Conversion

Physical Description
A heavy, ductile, soft, grey solid.

MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 11.34
FI.P: NA	UEL: NA	LEL: NA	

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities
Strong oxidizers, hydrogen peroxide, acids

Measurement Methods
NIOSH 7082, 7105, 7300, 7700, 7701, 7702, 9100, 9105; OSHA ID121, ID125G, ID206
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: Daily Remove: When wet or contaminated Change: Daily	First Aid (See procedures) Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA
Up to 0.5 mg/m^3: (APF = 10) Any air-purifying respirator with a high-efficiency particulate filter/(APF = 10) Any supplied-air respirator
Up to 1.25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode/(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter
Up to 2.5 mg/m^3: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece
Up to 50 mg/m^3: (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode
Up to 100 mg/m^3: (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, ingestion, skin and/or eye contact

Symptoms Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephelopathy; kidney disease; irritation

NIOSH Pocket Guide to Chemical Hazards

Mercury compounds [except (organo) alkyls] (as Hg)	CAS 7439-97-6 (metal)
Hg (metal)	RTECS OV4550000 (metal)
Synonyms & Trade Names Mercury metal: Colloidal mercury, Metallic mercury, Quicksilver Synonyms of "other" Hg compounds vary depending upon the specific compound.	DOT ID & Guide 2809 172 (metal)

Exposure Limits	NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 [skin] Other: C 0.1 mg/m^3 [skin]
	OSHA PEL†: C 0.1 mg/m^3
IDLH 10 mg/m^3 (as Hg) See: 7439976	Conversion

Physical Description
Metal: Silver-white, heavy, odorless liquid. (Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.)

MW: 200.6	BP: 674°F	FRZ: -38°F	Sol: Insoluble
VP: 0.0012 mmHg	IP: ?		Sp.Gr: 13.6 (metal)
FI.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Liquid

Incompatibilities & Reactivities
Acetylene, ammonia, chlorine dioxide, azides, calcium (amalgam formation), sodium carbide, lithium, rubidium, copper

Measurement Methods
NIOSH 6009; OSHA ID140
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: No recommendation Wash skin: When contaminated Remove: When wet or contaminated Change: Daily	First Aid (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations Mercury vapor
NIOSH
Up to 0.5 mg/m^3: (APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the compound of concern†/(APF = 10) Any supplied-air respirator
Up to 1.25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode/(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern†(canister)
Up to 2.5 mg/m^3: (APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against the compound of concern†/(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern†/(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/PAPR*TS(canister)/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece
Up to 10 mg/m^3: (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure- demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus

Section 4: First Aid Measures

Eye Contact: No known effect on eye contact, rinse with water for a few minutes.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 570°C (1058°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Non-flammable in presence of open flames and sparks, of heat, of oxidizing materials, of reducing materials, of combustible materials, of moisture.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Material in powder form, capable of creating a dust explosion. When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.01 (ppm)
Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 112.4 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: 765°C (1409°F)

Melting Point: 320.9°C (609.6°F)

Critical Temperature: Not available.

Specific Gravity: 8.64 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity: Reacts violently with potassium.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.
Acute oral toxicity (LD50): 890 mg/kg [Mouse].
Acute toxicity of the dust (LC50): 229.9 mg/m3 4 hour(s) [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH, 2 (Reasonably anticipated.) by NTP.
The substance is toxic to kidneys, lungs, liver.

Other Toxic Effects on Humans:
Hazardous in case of ingestion, of inhalation.
Slightly hazardous in case of skin contact (irritant, sensitizer).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: An allergen. 0047 Animal: embryotoxic, passes through the placental barrier.

Special Remarks on other Toxic Effects on Humans: May cause allergic reactions, exzema and/or dehydration of the skin.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification:

Identification:

Special Provisions for Transport:

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm; which would require a warning under the statute:
Cadmium
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Cadmium
Pennsylvania RTK: Cadmium
Massachusetts RTK: Cadmium
TSCA 8(b) inventory: Cadmium
SARA 313 toxic chemical notification and release reporting: Cadmium
CERCLA: Hazardous substances.: Cadmium

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R26- Very toxic by inhalation.
R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves.
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Safety glasses.

Section 16: Other Information

References:
-Hawley, G.G., The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.
-Liste des produits purs tératogènes, mutagènes, cancérogènes. Répertoire toxicologique de la Commission de la Santé et de la Sécurité du Travail du Québec.
-Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec.
-SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984.
-The Sigma-Aldrich Library of Chemical Safety Data, Edition II.
-Guide de la loi et du règlement sur le transport des marchandises dangereuses au canada. Centre de conformité International Ltée. 1986.

Other Special Considerations: Not available.

Created: 10/09/2005 04:29 PM

Last Updated: 10/09/2005 04:29 PM

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Chemicals & Laboratory Equipment

Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Chromium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Chromium

Catalog Codes: SLC4711, SLC3709

CAS#: 7440-47-3

RTECS: GB4200000

TSCA: TSCA 8(b) inventory: Chromium

CI#: Not applicable.

Synonym: Chromium metal; Chrome; Chromium Metal Chips 2" and finer

Chemical Name: Chromium

Chemical Formula: Cr

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: 1-800-901-7247
International Sales: 1-281-441-4400

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Chromium	7440-47-3	100

Toxicological Data on Ingredients: Chromium LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of ingestion.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to kidneys, lungs, liver, upper respiratory tract.
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 560°C (1076°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat.
Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Moderate fire hazard when it is in the form of a dust (powder) and burns rapidly when heated in flame.
Chromium is attacked vigorously by fused potassium chlorate producing vivid incandescence.
Pyrophoric chromium unites with nitric oxide with incandescence.
Incandescent reaction with nitrogen oxide or sulfur dioxide.

Special Remarks on Explosion Hazards:
Powdered Chromium metal +fused ammonium nitrate may react violently or explosively.
Powdered Chromium will explode spontaneously in air.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.5 (mg/m3) from ACGIH (TLV) [United States]
TWA: 1 (mg/m3) from OSHA (PEL) [United States]
TWA: 0.5 (mg/m3) from NIOSH [United States]
TWA: 0.5 (mg/m3) [United Kingdom (UK)]
TWA: 0.5 (mg/m3) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 52 g/mole

Color: Silver-white to Grey.

pH (1% soln/water): Not applicable.

Boiling Point: 2642°C (4787.6°F)

Melting Point: 1900°C (3452°F) +/- 10 deg. C

Critical Temperature: Not available.

Specific Gravity: 7.14 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:
Insoluble in cold water, hot water.
Soluble in acids (except Nitric), and strong alkalies.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Not available.

Special Remarks on Reactivity:
Incompatible with molten Lithium at 180 deg. C, hydrogen peroxide, hydrochloric acid, sulfuric acid, most caustic alkalies and alkali carbonates, potassium chlorate, sulfur dioxide, nitrogen oxide, bromine pentafluoride.
It may react violently or ignite with bromine pentafluoride.
Chromium is rapidly attacked by fused sodium hydroxide + potassium nitrate.
Potentially hazardous incompatibility with strong oxidizers.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for

human.) by IARC.
May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of inhalation.
Slightly hazardous in case of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause cancer based on animal data. There is no evidence that exposure to trivalent chromium causes cancer in man.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
May cause skin irritation.
Eyes: May cause mechanical eye irritation.
Inhalation: May cause irritation of the respiratory tract and mucous membranes of the respiratory tract.
Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea.
Chronic Potential Health Effects:
Inhalation: The effects of chronic exposure include irritation , sneezing, reddness of the throat, bronchospasm, asthma, cough, polyps, chronic inflammation, emphysema, chronic bronchitis, pharyngitis, bronchopneumonia, pneumoconiosis. Effects on the nose from chronic chromium exposure include irritation, ulceration, and perforation of the nasal septum. Inflammation and ulceration of the larynx may also occur.
Ingestion or Inhalation: Chronic exposure may cause liver and kidney damage.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Chromium
Illinois toxic substances disclosure to employee act: Chromium
Illinois chemical safety act: Chromium
New York release reporting list: Chromium
Rhode Island RTK hazardous substances: Chromium
Pennsylvania RTK: Chromium
Minnesota: Chromium
Michigan critical material: Chromium
Massachusetts RTK: Chromium
Massachusetts spill list: Chromium
New Jersey: Chromium
New Jersey spill list: Chromium
Louisiana spill reporting: Chromium
California Director's List of Hazardous Substances: Chromium
TSCA 8(b) inventory: Chromium
SARA 313 toxic chemical notification and release reporting: Chromium
CERCLA: Hazardous substances.: Chromium: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
R40- Limited evidence of carcinogenic effect
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves.
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent.
Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:16 PM

Last Updated: 10/10/2005 08:16 PM

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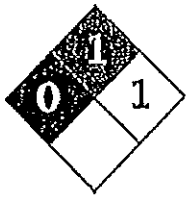

Health	1
Fire	3
Reactivity	2
Personal Protection	E

Material Safety Data Sheet
Magnesium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Magnesium

Catalog Codes: SLM4408, SLM2283, SLM3637

CAS#: 7439-95-4

RTECS: OM2100000

TSCA: TSCA 8(b) Inventory: Magnesium

CI#: Not applicable.

Synonym: Magnesium ribbons, turnings or sticks

Chemical Name: Magnesium

Chemical Formula: Mg

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: 1-800-901-7247
International Sales: 1-281-441-4400

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Magnesium	7439-95-4	100

Toxicological Data on Ingredients: Magnesium LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at

least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat.
Flammable in presence of acids, of moisture.
Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
Explosive in presence of acids, of moisture.

Fire Fighting Media and Instructions:
Flammable solid.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Magnesium turnings, chips or granules, ribbons, are flammable. They can be easily ignited. They may reignite after fire is extinguished. Produces flammable gases on contact with water and acid. May ignite on contact with water or moist air.
Magnesium fires do not flare up violently unless moisture is present.

Special Remarks on Explosion Hazards: Reacts with acids and water to form hydrogen gas with is highly flammable and explosive

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Flammable solid.
Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, moisture.

Storage:
Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Moisture sensitive. Dangerous when wet.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 24.31 g/mole

Color: Silver-white

pH (1% soln/water): Not applicable.

Boiling Point: 1100°C (2012°F)

Melting Point: 651°C (1203.8°F)

Critical Temperature: Not available.

Specific Gravity: 1.74 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:
Very slightly soluble in hot water.
Insoluble in cold water.
Insoluble in chromium trioxides, and mineral acids, alkalies.
Slightly soluble with decomposition in hot water.
Soluble in concentrated hydrogen fluoride, and ammonium salts.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, incompatible materials, water or moisture, moist air.

Incompatibility with various substances: Reactive with oxidizing agents, acids, moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Violent chemical reaction with oxidizing agents.
Reacts with water to create hydrogen gas and heat. Must be kept dry.
Reacts with acids to form hydrogen gas which is highly flammable and explosive.
Magnesium forms hazardous or explosive mixtures with aluminum and potassium perchlorate; ammonium nitrate; barium nitrate, barium dioxide and zinc; beryllium oxide; boron phosphodiiodide; bromobenzyl trifluoride; cadmium cyanide; cadmium oxide; calcium carbide; carbonates; carbon tetrachloride; chlorine; chlorine trifluoride; chloroform; cobalt cyanide; copper cyanide; copper sulfate(anhydrous), ammonium nitrate, potassium chlorate and water; cuprie oxide; cuprie sulfate; fluorine; gold cyanide; hydrogen and calcium carbonate; hydrogen iodide; hydrogen peroxide; iodine; lead cyanide; mercuric oxide; mercury cyanide; methyl chloride; molybdenum trioxide; nickel cyanide; nitric acid; nitrogen dioxide; oxygen (liquid); performic acid; phosphates; potassium chlorate; potassium perchlorate; silver nitrate; silver oxide; sodium perchlorate; sodium peroxide; sodium peroxide and carbon dioxide; stannic oxide; sulfates; trichloroethylene; zinc cyanide; zinc oxide.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation, Ingestion.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin: May cause skin irritation by mechanical action. May get mechanical injury or embedding of chips/particles in skin. The particles that are embedded in the wounds may retard healing.
Eyes: May cause eye irritation by mechanical action. Mechanical injury may occur. Particles or chips may embed in eye and retard healing.
Inhalation: Low hazard for usual industrial handling. It may cause respiratory tract irritation. However, it is unlikely due to physical form. When Magnesium metal is heated during welding or smelting process, Metal Fume Fever may result from inhalation of magnesium fumes. Metal Fume Fever is a flu-like condition consisting of fever, chills, sweating, aches, pains, cough, weakness, headache, nausea, vomiting, and breathing difficulty. Other symptoms may include metallic taste, increased white blood cell count. There is no permanent ill-effect.
Ingestion: Low hazard for usual industrial handling. There are no known reports of serious industrial poisonings with Magnesium. Ingestion of large amounts of chips, turnings or ribbons may cause gastrointestinal tract irritation with nausea, vomiting, and diarrhea. Acute ingestion may also result in Hypermagnesia. Hypermagnesia may cause hypotension, bradycardia, CNS depression, respiratory depression, and impairment of neuromuscular transmission (hyporeflexia, paralysis).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Magnesium UNNA: 1869 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Magnesium
Rhode Island RTK hazardous substances: Magnesium
Pennsylvania RTK: Magnesium

Massachusetts RTK: Magnesium
Massachusetts spill list: Magnesium
New Jersey: Magnesium
TSCA 8(b) inventory: Magnesium

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-4: Flammable solid.
CLASS B-6: Reactive and very flammable material.

DSCL (EEC):
R11- Highly flammable.
R15- Contact with water liberates extremely flammable gases.
S7/8- Keep container tightly closed and dry.
S43- In case of fire, use dry chemical. Never use water.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 3

Reactivity: 2

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves.
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 06:00 PM

Last Updated: 10/09/2005 06:00 PM

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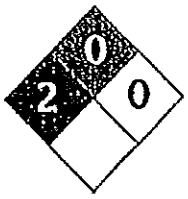


Health	2
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Nickel metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Nickel metal

Catalog Codes: SLN2296, SLN1342, SLN1954

CAS#: 7440-02-0

RTECS: QR5950000

TSCA: TSCA 8(b) Inventory: Nickel metal

CI#: Not applicable.

Synonym: Nickel Metal shot; Nickel metal foil.

Chemical Name: Nickel

Chemical Formula: Ni

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: 1-800-901-7247
International Sales: 1-281-441-4400

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Nickel metal	7440-02-0	100

Toxicological Data on Ingredients: Nickel metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer), of ingestion, of inhalation (lung sensitizer).
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to skin.
The substance may be toxic to kidneys, lungs, liver, upper respiratory tract.
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Material in powder form, capable of creating a dust explosion. This material is flammable in powder form only.

Special Remarks on Explosion Hazards:
Material in powder form, capable of creating a dust explosion.
Mixtures containing Potassium Perchlorate with Nickel & Titanium powders & Infusorial earth can explode.
Adding 2 or 3 drops of approximately 90% peroxyformic acid to powdered nickel will result in explosion.
Powdered nickel reacts explosively upon contact with fused ammonium nitrate at temperatures below 200 deg. C.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Keep away from incompatibles such as oxidizing agents, combustible materials, metals, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 1 (mg/m3) from ACGIH (TLV) [United States] Inhalation Respirable.
TWA: 0.5 (mg/m3) [United Kingdom (UK)]
TWA: 1 (mg/m3) from OSHA (PEL) [United States] InhalationConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid. Lustrous solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 58.71 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: 2730°C (4946°F)

Melting Point: 1455°C (2651°F)

Critical Temperature: Not available.

Specific Gravity: Density: 8.908 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:
Insoluble in cold water, hot water.
Insoluble in Ammonia.
Soluble in dilute Nitric Acid.
Slightly soluble in Hydrochloric Acid, Sulfuric Acid.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, combustible materials, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with strong acids, selenium, sulfur, wood and other combustibles, nickel nitrate, aluminum, aluminum trichloride, ethylene, p-dioxan, hydrogen, methanol, non-metals, oxidants, sulfur compounds, aniline, hydrogen sulfide, flammable solvents, hydrazine, and metal powders (especially zinc, aluminum, and magnesium), ammonium nitrate, nitryl fluoride, bromine pentafluoride, potassium perchlorate + titanium powder + Indusorial earth.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP.
Causes damage to the following organs: skin.
May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Other Toxic Effects on Humans:

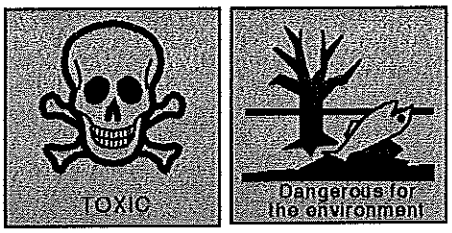
Hazardous in case of inhalation.
Slightly hazardous in case of skin contact (irritant, sensitizer), of ingestion.

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose/Conc:
LDL [Rat] - Route: Oral; Dose: 5000 mg/kg
LDL [Guinea Pig] - Route: Oral; Dose: 5000 mg/kg

Special Remarks on Chronic Effects on Humans: May cause cancer based on animal test data

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin: Nickel dust and fume can irritate skin.
Eyes: Nickel dust and fume can irritate eyes.
Inhalation: Inhalation of dust or fume may cause respiratory tract irritation with non-productive cough, hoarseness, sore throat, headache, vertigo, weakness, chest pain, followed by delayed effects, including tachypnea, dyspnea, and ARDS. Death due to ARDS has been reported following inhalation of high concentrations of respirable metallic nickel dust. Later effects may include pulmonary edema and fibrosis.
Ingestion: Metallic nickel is generally considered not to be acutely toxic if ingested. Ingestion may cause nausea, vomiting, abdominal , and diarrhea. Nickel may damage the kidneys(proteinuria), and may affect liver function. It may also affect behavior (somnolence), and cardiovascular system (increased cornary artery resistance, decreased myocardial contractility, myocardial damage, regional or general arteriolar or venus dilation).
Chronic Potential Health Effects:

Safety data for benzo(a)pyrene



Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 1,2-benzopyrene, 6,7-benzopyrene, benzo[a]pyrene, B(a)P, BP, 3,4-benzopyrene, benzo[d,e,f]chrysene, 3,4-benzpyrene, benzpyrene, 3,4-benzylpyrene, 3,4-benz[a]pyrene, 3,4-BP, 3,4-benzopyrene
Molecular formula: $C_{20}H_{12}$
CAS No: 50-32-8
EINECS No: 200-028-5
EU Index No: 601-032-00-3

Physical data

Appearance: yellow crystals or powder [found in cigarette smoke, coal tar, fuel exhaust gas and in many other sources]
Melting point: 176 C
Boiling point: 495 C
Vapour density: 8.7 (air = 1)
Vapour pressure:
Density (g cm^{-3}): 1.351
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility: slight

Stability

Stable. Incompatible with strong oxidizing agents.

Toxicology

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. May be transferred to nursing infants through mother's milk. Skin, respiratory and eye irritant. May cause changes to the colour and properties of skin. Exposure to sunlight can increase the skin damage caused by this chemical.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
SCU-RAT LD50 50 mg kg^{-1}
IPR-MUS LDLO 500 mg kg^{-1}
IRN-FRG LDLO 11 mg kg^{-1}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R45 R46 R50 R53 R60 R61.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
Un No 2811. Packing group III. Hazard class 6.1.

Environmental information

Very toxic in the environment - may cause long-term damage.

Personal protection

Restricted material. Only to be used by trained workers. Prepare a full risk assessment before starting work. Safety glasses, gloves, good ventilation. Handle as a carcinogen. Do not dry sweep spills because of the risk of increasing the amount of airborne material.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)

Institute for Reference Materials and Measurements

SAFETY DATA SHEET

Based on Regulation (EC) No. 1907/2006 (REACH) Article 31 and Annex II

BCR-271: benzo[a]anthracene

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name: BCR-271: benzo[a]anthracene

CAS number	56-55-3
EC index number	601-033-00-9
EINECS number	200-280-6
RTECS number	CV9275000
Molecular mass	228.30 g/mol
Formula	C18H12

1.2 Use of the substance/preparation:

Certified reference material for laboratory use only

1.3 Company/undertaking identification:

Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel: +32 14 57 12 11
Fax: +32 14 59 04 06
JRC-IRMM-RM-Sales@ec.europa.eu

1.4 Emergency telephone:

Poison Centre: +32 70 245 245

2. Hazards identification

NFPA: 1-1-2(*)

DSD/DPD

May cause cancer
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Other hazards

Its dust is explosive with air
Dust cloud can be ignited by a spark
Slightly irritant to skin
Slightly irritant to eyes
Caution! Substance is absorbed through the skin
No certainty about human mutagenic properties
Highly bioaccumulative
Not readily biodegradable in water

CLP

Carc. 1B	May cause cancer. (H350)
Aquatic Acute 1	Very toxic to aquatic life. (H400)
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects. (H410)

Other hazards

Its dust is explosive with air
Dust cloud can be ignited by a spark
Slightly irritant to skin
Slightly irritant to eyes
Caution! Substance is absorbed through the skin
No certainty about human mutagenic properties
Highly bioaccumulative
Not readily biodegradable in water

3. Composition/information on ingredients

Name	CAS No EINECS/ELINCS	Conc.	Classification according to DSD/DPD	Classification according to CLP	Note
benz[a]anthracene	56-55-3 200-280-6		Carc. Cat. 2; R45 N; R50-53	Carc. 1B; H350 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	

4. First aid measures

4.1 After inhalation:

Remove the victim into fresh air

Respiratory problems: consult a doctor/medical service

4.2 Skin contact:

Rinse with water

Take victim to a doctor if irritation persists

4.3 Eye contact:

Rinse with water

Take victim to an ophthalmologist if irritation persists

4.4 After ingestion:

Rinse mouth with water

Immediately after ingestion: give lots of water to drink

Consult a doctor/medical service if you feel unwell

5. Fire-fighting measures

5.1 Suitable extinguishing media:

Water spray

Alcohol-resistant foam

Polymer foam

ABC powder

Carbon dioxide

5.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium

5.3 Special exposure hazards:

Heating increases the fire hazard

Dust cloud can be ignited by a spark

Upon combustion CO and CO2 are formed

5.4 Instructions:

Take account of toxic fire-fighting water

Use water moderately and if possible collect or contain it

5.5 Special protective equipment for fire-fighters:

Gloves

Protective clothing

Heat/fire exposure: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal precautions:

See heading 8.2

6.2 Environmental precautions:

Dam up the solid spill

Prevent soil and water pollution

Prevent spreading in sewers

See heading 13

6.3 Methods for cleaning up:

Scoop solid spill into closing containers
Carefully collect the spill/leftovers
Clean contaminated surfaces with an excess of water
Take collected spill to manufacturer/competent authority
Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:

Avoid raising dust
Warning! Avoid exposure
Keep away from naked flames/heat
Obtain special instructions before use
Observe strict hygiene
Keep container tightly closed
Do not discharge the waste into the drain

7.2 Storage:

Safe storage requirements:

Store in a cool area
Store in a dry area
Store in a dark area
Keep container in a well-ventilated place
Keep locked up
Unauthorized persons are not admitted
Meet the legal requirements

Keep away from:

oxidizing agents
(strong) acids

7.3 Specific use(s):

See information supplied by the manufacturer for the identified use(s)

8. Exposure controls/Personal protection

8.1 Exposure limit values:

8.1.1 Occupational exposure:

If limit values are applicable and available these will be listed below.

TLV (USA)

Benz(a)anthracene	Short time value	- ppm
	Time-weighted average exposure limit	- ppm

8.1.2 Sampling methods:

Product name	Test	Number	Sampling method	Remarks
Benz(a)Anthracene	OSHA	CSI		
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5506	adsorption tubes	
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5515	adsorption tubes	

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

Measure the concentration in the air regularly
Carry operations in the open/under local exhaust/ventilation or with respiratory protection
Personal protective equipment:

a) Respiratory protection:

Dust production: dust mask with filter type P3

b) Hand protection:

Gloves

c) Eye protection:

Safety glasses
In case of dust production: protective goggles

d) Skin protection:
Protective clothing

8.2.2 Environmental exposure controls:
See headings 6.2, 6.3 and 13

9. Physical and chemical properties

9.1 General information:

Physical form	Crystalline solid
	Scales
Odour	Odourless
Colour	Fluorescent yellow-green to colourless

9.2 Important health, safety and environmental information:

Boiling point	Not applicable
Vapour pressure (20°C)	0.00007 hPa
Relative density	1.3
Solubility in water	0.00001 g/100 ml
Solubility in solvents	Soluble in ether
	Soluble in acetone
	Soluble in oils/fats
Log Pow	5.61 - 5.79

9.3 Other information:

Melting point	160 °C

10. Stability and reactivity

10.1 Conditions to avoid:

Possible fire hazard
heat sources
ignition sources

Stability
Unstable on exposure to light
Unstable on exposure to air

Reactions
Reacts violently with (strong) oxidizers
Decomposes on exposure to (strong) acids

10.2 Materials to avoid:

oxidizing agents
(strong) acids

10.3 Hazardous decomposition products:

Upon combustion CO and CO2 are formed

11. Toxicological information

11.1 Acute toxicity:

No (test)data available.

11.2 Chronic toxicity:

Probably human carcinogenic
Mutagenicity: AMES test positive
No certainty about human mutagenic properties
Not classified as toxic to reproduction (EC)

BCR-271: benzo[a]anthracene

EC carc cat	2
Listed in SZW - List of carcinogenic substances	yes
IARC - classification	2A

TLV - Carcinogen	A2
MAK - Krebserzeugend Kategorie	2
MAK - Keimzellmutagen Kategorie	3A
MAK - Schwangerschaft Gruppe	-
CLP carc cat	category 1B

11.3 Acute effects/symptoms:

Inhalation:
No data available

Skin contact:
Slight irritation

Eye contact:
Slight irritation

Ingestion:
No data available

11.4 Chronic effects:

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
No specific information available
SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
Feeling of weakness
Photoallergy
Skin rash/inflammation
Cracking of the skin
Skin cancer
Lung tissue affection/degeneration
Enlargement/affection of the liver
Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

BCR-271: benzo[a]anthracene

LC50 fishes

species	value	duration (h)	remarks
PIMEPHALES PROMELAS	0.0018 mg/l	65 h	LETHAL

EC50 Daphnia

species	value	duration (h)	remarks
DAPHNIA PULEX	0.01 mg/l	96 h	STATIC SYSTEM

EC50 other aquatic organisms

species	value	duration (h)	remarks
CYANOPHYTA	0.018 mg/l	336 h	

12.2 Mobility:

Volatile organic compounds (VOC)	0 %
Solubility in/reaction with water	Insoluble in water
	Substance sinks in water
Water physicochemical processes	Forming sediments in water
Soil physicochemical processes	Adsorbs into the soil

12.3 Persistence and degradability:

Water abiotic degradation processes	Photolysis in water
	Ozonation in water
Half-life soil	> 100 days

Not readily biodegradable in water

12.4 Bioaccumulative potential:

Log Pow	5.61 - 5.79

Highly bioaccumulative

12.5 Results of PBT assessment:

Not applicable, based on available data

12.6 Other adverse effects:

Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)

13. Disposal considerations

13.1 Provisions relating to waste:

Waste material code (Directive 2008/98/EC, decision 2001/118/EC)

16 05 06* : laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

Depending on branch of industry and production process, also other EURAL codes may be applicable

Hazardous waste according to Directive 2008/98/EC

13.2 Disposal methods:

Dissolve or mix with a combustible solvent

Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery

Remove waste in accordance with local and/or national regulations

Do not discharge into surface water (2000/60/EC, Council decision 2455/2001/EC, O.J. L331 of 15/12/2001)

13.3 Packaging/Container:

Waste material code packaging (Directive 2008/98/EC)

15 01 10* : packaging containing residues of or contaminated by dangerous substances

14. Transport information

ADR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADR	benzo[a]anthracene
UN number	3077
Class	9
Packing group	III
Hazard identification number	90
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

RID

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name RID	benzo[a]anthracene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

ADNR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADNR	benzo[a]anthracene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

IMO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name IMO	benzo[a]anthracene
UN number	3077
Class	9
Packing group	III
Labels	9
Marine pollutant	P
Environmentally hazardous substance mark	yes

ICAO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ICAO	benzo[a]anthracene
UN number	3077
Class	9
Packing group	III
Labels	9
Environmentally hazardous substance mark	yes

15. Regulatory information

15.1 EU Legislation:

DSD/DPD

Labelling according to Directive 2008/58/EC (30th adaptation of Directive 67/548/EEC)

Dangerous for the environment

R-phrases

45	May cause cancer
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrases

53	Avoid exposure - obtain special instructions before use
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
60	This material and its container must be disposed of as hazardous waste
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Additional recommendations

	Restricted to professional users.

CLP

Classification and labelling according to Regulation (EC) No 790/2009, 1st adaptation of Regulation (EC) No 1272/2008 – Annex VI and after evaluation of available test data

Signal word

Dgr	Danger

H-statements

H350	May cause cancer.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P405	Store locked up.

Supplemental information

	Restricted to professional users.

15.2 National provisions:

15.3 Specific community rules:

Enumerated in Annex XVII of Regulation (EC) No. 1907/2006: Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

Legislation	Reference legislation
EG/552/2009	See column 1: 28.
EG/552/2009	See column 1: 50. b)

16. Other information

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

(*) = INTERNAL CLASSIFICATION (NFPA)

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

Full text of any R-phrases referred to under headings 2 and 3:

R45	May cause cancer
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of any H-statements referred to under headings 2 and 3:

H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of any classes referred to under headings 2 and 3:

Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Carc.	Carcinogenicity

Institute for Reference Materials and Measurements

SAFETY DATA SHEET

Based on Regulation (EC) No. 1907/2006 (REACH) Article 31 and Annex II

BCR-048R: benzo[k]fluoranthene

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name: BCR-048R: benzo[k]fluoranthene

CAS number	207-08-9
EC index number	601-036-00-5
EINECS number	205-916-6
RTECS number	DF6350000
Molecular mass	252.32 g/mol
Formula	C20H12

1.2 Use of the substance/preparation:

Certified reference material for laboratory use only

1.3 Company/undertaking identification:

Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel: +32 14 57 12 11
Fax: +32 14 59 04 06
JRC-IRMM-RM-Sales@ec.europa.eu

1.4 Emergency telephone:

Poison Centre: +32 70 245 245

2. Hazards identification

NFPA: 1-1-2(*)

DSD/DPD

May cause cancer
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Other hazards

Its dust is explosive with air
Dust cloud can be ignited by a spark
Slightly irritant to skin
Slightly irritant to eyes
Caution! Substance is absorbed through the skin
No certainty about human mutagenic properties
Highly bioaccumulative
Not readily biodegradable in water

CLP

Carc. 1B	May cause cancer. (H350)
Aquatic Acute 1	Very toxic to aquatic life. (H400)
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects. (H410)

Other hazards

Its dust is explosive with air
Dust cloud can be ignited by a spark
Slightly irritant to skin
Slightly irritant to eyes
Caution! Substance is absorbed through the skin
No certainty about human mutagenic properties
Highly bioaccumulative
Not readily biodegradable in water

3. Composition/information on ingredients

Name	CAS No EINECS/ELINCS	Conc.	Classification according to DSD/DPD	Classification according to CLP	Note
benzo[k]fluoranthene	207-08-9 205-916-6		Carc. Cat. 2; R45 N; R50-53	Carc. 1B; H350 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	

4. First aid measures

4.1 After inhalation:

Remove the victim into fresh air

Respiratory problems: consult a doctor/medical service

4.2 Skin contact:

Rinse with water

Do not apply (chemical) neutralizing agents

Take victim to a doctor if irritation persists

4.3 Eye contact:

Rinse with water

Do not apply neutralizing agents

Take victim to an ophthalmologist if irritation persists

4.4 After ingestion:

Rinse mouth with water

Immediately after ingestion: give lots of water to drink

Do not induce vomiting

Consult a doctor/medical service if you feel unwell

5. Fire-fighting measures

5.1 Suitable extinguishing media:

Water spray

Polyvalent foam

ABC powder

Carbon dioxide

5.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known

5.3 Special exposure hazards:

Heating increases the fire hazard

Dust cloud can be ignited by a spark

Upon combustion CO and CO2 are formed

5.4 Instructions:

Take account of toxic fire-fighting water

Use water moderately and if possible collect or contain it

5.5 Special protective equipment for fire-fighters:

Gloves

Protective clothing

Heat/fire exposure: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal precautions:

See heading 8.2

6.2 Environmental precautions:

Dam up the solid spill

Prevent soil and water pollution

Prevent spreading in sewers

See heading 13

6.3 Methods for cleaning up:

Scoop solid spill into closing containers
Carefully collect the spill/leftovers
Clean contaminated surfaces with an excess of water
Take collected spill to manufacturer/competent authority
Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:

Avoid raising dust
Warning! Avoid exposure
Keep away from naked flames/heat
Obtain special instructions before use
Observe strict hygiene
Keep container tightly closed
Do not discharge the waste into the drain

7.2 Storage:

Safe storage requirements:

Store in a cool area
Store in a dry area
Keep container in a well-ventilated place
Keep locked up
Unauthorized persons are not admitted
Meet the legal requirements

Keep away from:

oxidizing agents
(strong) acids

7.3 Specific use(s):

See information supplied by the manufacturer for the identified use(s)

8. Exposure controls/Personal protection

8.1 Exposure limit values:

8.1.1 Occupational exposure:

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods:

Product name	Test	Number	Sampling method	Remarks
Benz(a)Anthracene	OSHA	CSI		
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5506	adsorption tubes	
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5515	adsorption tubes	

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

Measure the concentration in the air regularly
Carry operations in the open/under local exhaust/ventilation or with respiratory protection
Personal protective equipment:

a) Respiratory protection:
Dust production: dust mask with filter type P3

b) Hand protection:
Gloves

c) Eye protection:
Safety glasses
In case of dust production: protective goggles

d) Skin protection:
Protective clothing

8.2.2 Environmental exposure controls:

See headings 6.2, 6.3 and 13

9. Physical and chemical properties

9.1 General information:

Physical form	Crystalline solid
	Needles
Colour	Light yellow

9.2 Important health, safety and environmental information:

Boiling point	480 °C
Vapour pressure (20°C)	< 0.00001 hPa
Solubility in water	< 0.00001 g/100 ml
Solubility in solvents	Soluble in ethanol
	Soluble in acetic acid
	Soluble in oils/fats
Log Pow	6.84

9.3 Other information:

Melting point	217 °C

10. Stability and reactivity

10.1 Conditions to avoid:

Possible fire hazard

heat sources
ignition sources

Stability

No data available

Reactions

Reacts violently with (strong) oxidizers

10.2 Materials to avoid:

oxidizing agents
(strong) acids

10.3 Hazardous decomposition products:

Upon combustion CO and CO2 are formed

11. Toxicological information

11.1 Acute toxicity:

No (test)data available.

11.2 Chronic toxicity:

Probably human carcinogenic
No certainty about human mutagenic properties
Not classified as toxic to reproduction (EC)

BCR-048R: benzo[k]fluoranthene

EC carc cat	2
Listed in SZW - List of carcinogenic substances	yes
IARC - classification	2B
MAK - Krebserzeugend Kategorie	2
MAK - Keimzellmutagen Kategorie	3B
MAK - Schwangerschaft Gruppe	-
CLP carc cat	category 1B

11.3 Acute effects/symptoms:

Inhalation:

No data available

Skin contact:

Slight irritation

Eye contact:

Slight irritation

Ingestion:

No data available

11.4 Chronic effects:

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
No specific information available
SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
Feeling of weakness
Cracking of the skin
Skin rash/inflammation
Photoallergy
Skin cancer
Lung tissue affection/degeneration
Enlargement/affection of the liver
Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

No (test)data available.

12.2 Mobility:

Volatile organic compounds (VOC)	0 %
Solubility in/reaction with water	Insoluble in water
Water physicochemical processes	Forming sediments in water
Soil physicochemical processes	Adsorbs into the soil

12.3 Persistence and degradability:

Water ablotic degradation processes	Ozonation in water
Half-life soil	65 - 1400 days
Not readily biodegradable in water	

12.4 Bioaccumulative potential:

Log Pow	6.84
Highly bioaccumulative	

12.5 Results of PBT assessment:

Not applicable, based on available data

12.6 Other adverse effects:

Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)

13. Disposal considerations

13.1 Provisions relating to waste:

Waste material code (Directive 2008/98/EC, decision 2001/118/EC)
16 05 06* : laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
Depending on branch of industry and production process, also other EURAL codes may be applicable
Hazardous waste according to Directive 2008/98/EC

13.2 Disposal methods:

Dissolve or mix with a combustible solvent
Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery
Remove waste in accordance with local and/or national regulations
Do not discharge into surface water (2000/60/EC, Council decision 2455/2001/EC, O.J. L331 of 15/12/2001)

13.3 Packaging/Container:

Waste material code packaging (Directive 2008/98/EC)
15 01 10* : packaging containing residues of or contaminated by dangerous substances

{13.4 Entsorgung verschmutzter Gebinde:}

14. Transport information

ADR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADR	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Hazard identification number	90
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

RID

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name RID	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

ADNR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADNR	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

IMO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name IMO	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Labels	9
Marine pollutant	P
Environmentally hazardous substance mark	yes

ICAO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ICAO	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Labels	9
Environmentally hazardous substance mark	yes

15. Regulatory information

15.1 EU Legislation:

DSD/DPD

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Dangerous for the environment

R-phrases

45	May cause cancer
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrases

53	Avoid exposure - obtain special instructions before use
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
60	This material and its container must be disposed of as hazardous waste
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Additional recommendations

	Restricted to professional users.

CLP

Classification and labelling according to Regulation (EC) No 1272/2008 – Annex VI and after evaluation of available test data

Signal word

Dgr	Danger

H-statements

H350	May cause cancer.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P405	Store locked up.

Supplemental information

	Restricted to professional users.

15.2 National provisions:

15.3 Specific community rules:

Enumerated in Annex XVII of Regulation (EC) No. 1907/2006: Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

Legislation	Reference legislation
EG/552/2009	See column 1: 28.
EG/552/2009	See column 1: 50. g)

16. Other information

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

(*) = INTERNAL CLASSIFICATION (NFPA)

PBT-substances = persistent, bioaccumulative and toxic substances

DSD	Dangerous Substance Directive
DPD	Dangerous Preparation Directive
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)

Full text of any R-phrases referred to under headings 2 and 3:

R45	May cause cancer
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

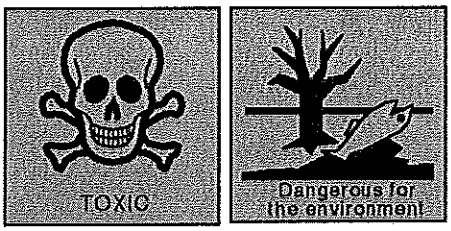
Full text of any H-statements referred to under headings 2 and 3:

H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of any classes referred to under headings 2 and 3:

Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Carc.	Carcinogenicity

Safety data for benzo[b]fluoranthene



Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 3,4-benzofluoranthene, benz[e]acenaphthanthrylene, 3,4-benz[e]acenaphthanthrylane, 2,3-benzofluoranthene, benzofluoranthrene, benzo[e]fluoranthene
Use:
Molecular formula: $C_{20}H_{12}$
CAS No: 205-99-2
EINECS No: 205-911-9
EC Index No: 601-024-00-4

Physical data

Appearance: off-white to tan powder
Melting point: 163 - 165 C
Boiling point:
Vapour density:
Vapour pressure:
Density (g cm^{-3}):
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Incompatible with strong oxidizing agents.

Toxicology

Toxic. Probable human carcinogen. May act as an irritant.

Toxicity data
(The meaning of any toxicological abbreviations which appear in this section is given here.)

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R45 R50 R53.

Environmental information

Very harmful to aquatic organisms - may cause long-term damage to the environment.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)

Personal protection

Safety glasses, good ventilation, disposable gloves. Treat as a possible carcinogen.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S45 S53 S60 S61.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on November 30, 2010. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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Safety data for chrysene

Glossary of terms on this data sheet.

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General

Synonyms: 1,2-benzophenanthrene, benzo(a)phenanthrene, 1,2-benzphenanthrene, coal tar pitch, benz(a)phenanthrene, 1,2,5,6-dibenzonaphthalene
Molecular formula: $C_{18}H_{12}$
CAS No: 218-01-9
EC No: 205-923-4

Physical data

Appearance: crystalline powder
Melting point: 253 C
Boiling point: 448 C
Vapour density:
Vapour pressure:
Density (g cm^{-3}): 1.27
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility: insoluble

Stability

Stable. Combustible. Incompatible with strong oxidizing agents.

Toxicology

Toxic. Confirmed animal carcinogen, possible human carcinogen. Harmful if swallowed, inhaled or absorbed through the skin.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
IPR-MUS LD50 >320 mg kg^{-1}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R20 R21 R22 R45 R46.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
UN No 2811. Packing group I. Hazard class 6.1. CDG UK Transport category 1. EMS No 6.1-04.

Personal protection

Safety glasses, good ventilation, gloves. Handle as a carcinogen. A COSHH assessment is required.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S3 S7 S9 S36 S37 S39 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on April 1, 2005. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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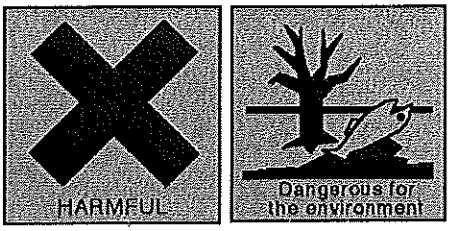
Safety data for dibenz(a,h)anthracene



Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 1,2:5,6-benzanthracene, 1,2:5,6-dibenzanthracene, dibenzo(a,h) anthracene, DBA, 1,2,5,6-DBA
Use: a common pollutant in smoke and used oils
Molecular formula: $C_{22}H_{14}$
CAS No: 53-70-3
EINECS No: 200-181-8
Annex I Index. No: 601-041-00-2

Physical data

Appearance: white to light yellow crystalline solid
Melting point: 266 - 267 C
Boiling point: 524 C
Vapour density:
Vapour pressure:
Density (g cm^{-3}): 1.28
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Combustible. Incompatible with strong oxidizing agents.

Toxicology

Harmful if swallowed or inhaled. Experimental carcinogen, tumorigen and neoplastigen. IARC probable human carcinogen.

Toxicity data
(The meaning of any toxicological abbreviations which appear in this section is given here.)
IVN-MUS LDLO 10 mg kg^{-1}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R45 R50 R53.

Environmental information

Harmful in the environment - may cause long-term damage.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
Non-hazardous for air, sea and road freight.

Personal protection

Safety glasses, gloves, good ventilation. Handle as a possible carcinogen.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S45 S53 S60 S61.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on October 8, 2006. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date. Note also that the information on the PTCL Safety web site, where this page was hosted, has been copied onto many other sites, often without permission. If you have any doubts about the veracity of the information that you are viewing, or have any queries, please check the URL that your web browser displays for this page. If the URL **begins** "http://msds.chem.ox.ac.uk/" the page is maintained by the Safety Officer in Physical Chemistry at Oxford University. If not, this page is a copy made by some other person and we have no responsibility for it.

Safety data for indeno[1,2,3-cd]pyrene

Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 1,10-(1,2-phenylene)pyrene, 1,10-(o-phenylene)pyrene, o-phenylenepyrene, 2,3-phenylenepyrene, 2,3,o-phenylenepyrene, IP
Use:
Molecular formula: $C_{22}H_{12}$
CAS No: 193-39-5
EINECS No: 205-893-2

Physical data

Appearance: solid
Melting point: 161 - 163 C
Boiling point: 536 C
Vapour density:
Vapour pressure:
Density (g cm^{-3}):
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Incompatible with strong oxidizing agents.

Toxicology

Limited evidence that this material may be carcinogenic.

Toxicity data
(The meaning of any toxicological abbreviations which appear in this section is given here.)

Risk phrases

(The meaning of any risk phrases which appear in this section is given here.)
R40.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
Non-hazardous for air, sea and road freight.

Personal protection

Treat as potentially hazardous - many multi-ring aromatic compounds are suspected carcinogens.

Safety phrases

(The meaning of any safety phrases which appear in this section is given here.)
S36 S37 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on May 10, 2005. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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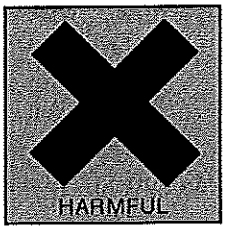
Safety data for barium



Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms:
Molecular formula: Ba
CAS No: 7440-39-3
EC No:

Physical data

Appearance: yellow-white, slightly lustrous solid
Melting point: 725 C
Boiling point: 1640 C
Vapour density:
Vapour pressure: 10 mm Hg at 1049 C
Density (g cm^{-3}): 3.51
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility: reacts

Stability

Reacts vigorously or violently with acids, water, tetrachloromethane, small halogenated hydrocarbons. Should be stored under an inert material such as petroleum ether to exclude air. Flammable.

Toxicology

Poisonous if swallowed. (Note that water or acid soluble barium salts are all poisonous, but that the insoluble salts, as used in a "barium meal" are much less so.)

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R22.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
Hazard class 4.3. Packing group II. UN No 1400.

Personal protection

Safety glasses, gloves, good ventilation. Moisture-free working environment, such as a glove-box.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on February 22, 2005. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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MSDS Number: **C2915** * * * * * *Effective Date:* ***07/02/09*** * * * * * *Supercedes:* ***05/04/07***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

CHLOROFORM

1. Product Identification

Synonyms: Trichloromethane; Methyl trichloride; Methane trichloride
CAS No.: 67-66-3
Molecular Weight: 119.38
Chemical Formula: CHCl3
Product Codes:
J.T. Baker: 9174, 9175, 9180, 9181, 9182, 9183, 9184, 9186, 9187, 9188, 9257
Mallinckrodt: 1473, 2175, 4432, 4434, 4439, 4440, 4441, 4443, 4444, H407, V551

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Chloroform	67-66-3	98 - 100%	Yes
Ethyl Alcohol	64-17-5	0 - 1%	Yes

3. Hazards Identification

Emergency Overview

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, LIVER AND KIDNEYS. SUSPECT CANCER HAZARD. MAY CAUSE CANCER. Risk of cancer depends on level and duration of exposure.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: Blue (Health)

Potential Health Effects

Inhalation:
Acts as a relatively potent anesthetic. Irritates respiratory tract and causes central nervous system effects, including headache, drowsiness, dizziness. Exposure to higher concentrations may result in unconsciousness and even death. May cause liver injury and blood disorders. Prolonged exposure may lead to death due to irregular heart beat and kidney and liver disorders.
Ingestion:
Causes severe burning in mouth and throat, pain in the chest and vomiting. Large quantities may cause symptoms similar to inhalation.
Skin Contact:
Causes skin irritation resulting in redness and pain. Removes natural oils. May be absorbed through skin.
Eye Contact:
Vapors causes pain and irritation to eyes. Splashes may cause severe irritation and possible eye damage.
Chronic Exposure:
Prolonged or repeated exposure to vapors may cause damage to the nervous system, the heart and the liver and kidneys. Contact with liquid has defatting effect and may cause chronic irritation of skin with cracking and drying, and corresponding dermatitis. Chloroform is a suspected human carcinogen.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Because kidney and liver effects may be delayed, keep victim under observation for 24 to 48 hr. Administration of fluids may help to prevent kidney failure. Obtain blood glucose, urinalysis, liver function tests, chest x-ray, and monitor cardiac function and fluid/electrolyte status. Monitor liver and kidney function for 4 to 5 days after exposure. Disulfiram, its metabolites, and a high carbohydrate diet appear to protect somewhat against chloroform toxicity. Do not give adrenalin! Tests may show increased bilirubin, ketosis, lowered blood prothombin, and fibrogen.

5. Fire Fighting Measures

Fire:
Slight fire hazard when exposed to high heat; otherwise, practically not flammable.
Explosion:
Sealed containers may rupture when heated.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Keep in a tightly closed light-resistant container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Chloroform odor threshold: 250 mg/m3. The odor threshold only serves as a warning of exposure; not smelling it does not mean you are not being exposed.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
Chloroform:
-OSHA Permissible Exposure Limit (PEL):
50 ppm (TWA) Ceiling
-ACGIH Threshold Limit Value (TLV):
10 ppm (TWA), Listed as A3 animal carcinogen

For Ethyl Alcohol:
- OSHA Permissible Exposure Limit (PEL):
1,000 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):
1,000 ppm (STEL), A3 - Confirmed animal carcinogen with unknown relevance to humans.
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). This substance has poor warning properties.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Odor:
Characteristic ethereal odor.
Solubility:
0.8g/100g water @ 20C (68F).
Specific Gravity:
1.48 @ 20C/4C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
62C (144F)
Melting Point:
-63.5C (-83F)
Vapor Density (Air=1):
4.1
Vapor Pressure (mm Hg):
160 @ 20C (68F)
Evaporation Rate (BuAc=1):
11.6

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. pH decreases on prolonged exposure to light and air due to formation of HCl.
Hazardous Decomposition Products:
May produce carbon monoxide, carbon dioxide, hydrogen chloride and phosgene when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong caustics and chemically active metals such as aluminum, magnesium powder, sodium, or potassium; acetone, fluorine, methanol, sodium methoxide, dinitrogen tetroxide, tert-butoxide, triisopropylphosphine.
Conditions to Avoid:
Light, heat, air and incompatibles.

11. Toxicological Information

Toxicological Data:
Chloroform: oral rat LD50: 908 mg/kg; skin rabbit LD50: > 20 gm/kg; inhalation rat LC50: 47702 mg/m3/4H; irritation data: skin rabbit 10 mg/24H open mild; eye rabbit: 20 mg/24H moderate; investigated as a tumorigen, mutagen, reproductive effector.
Reproductive Toxicity:
Birth defects have been seen in rats and mice exposed by inhalation of chloroform at concentrations greater than 100 ppm in air. Ingestion of chloroform by pregnant laboratory animals has resulted in fetotoxicity but not birth defects, and only at levels causing severe maternal effects.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Chloroform (67-66-3)	No	Yes	2B
Ethyl Alcohol (64-17-5)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material is expected to have a half-life of greater than 30 days.
Environmental Toxicity:
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: RQ, CHLOROFORM
Hazard Class: 6.1
UN/NA: UN1888
Packing Group: III
Information reported for product/size: 52L

International (Water, I.M.O.)

Proper Shipping Name: CHLOROFORM
Hazard Class: 6.1
UN/NA: UN1888
Packing Group: III
Information reported for product/size: 52L

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Chloroform (67-66-3)	Yes	Yes	Yes	Yes
Ethyl Alcohol (64-17-5)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Chloroform (67-66-3)	Yes	Yes	No	Yes
Ethyl Alcohol (64-17-5)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Chloroform (67-66-3)	10	10000	Yes	No
Ethyl Alcohol (64-17-5)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Chloroform (67-66-3)	10	U044	No
Ethyl Alcohol (64-17-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Mixture / Liquid)

WARNING:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

Australian Hazchem Code: 2Z
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **2** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, LIVER AND KIDNEYS. SUSPECT CANCER HAZARD. MAY CAUSE CANCER. Risk of cancer depends on level and duration of exposure.
Label Precautions:
Do not breathe vapor.
Do not get in eyes, on skin, or on clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.

Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 8.
Disclaimer:
****
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

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Coal tar pitch volatiles

Synonyms & Trade Names Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coa coal tar pitch, and creosote to be coal tar products.]

CAS No. 65996-93-2	**RTECS No.** GF8655000 (/niosh-rtecs/GF841098.html)	**DOT ID & Guide** 2713 153 (http://wwwapps.tc.gc.ca/saf-sec sur/3/erg-gmu/erg/guidepage.aspx?guide=153) (acridine)
	Conversion	**IDLH** Ca [80 mg/m³] See: 65996932 (/niosh/idlh/65996932.html)
Exposure Limits **NIOSH REL** : Ca TWA 0.1 mg/m³ (cyclohexane-extractable fraction) See Appendix A (nengapdxa.html) See Appendix C (nengapdxc.html) **OSHA PEL** : TWA 0.2 mg/m³ (benzene-soluble fraction) [1910.1002] See Appendix C (nengapdxc.html)		**Measurement Methods** **OSHA** 58 (http://www.osha.gov/dts/sltc/methods/organic/org058/org See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Black or dark-brown amorphous residue.

Properties vary depending upon the specific compound.					

Combustible Solids

Incompatibilities & Reactivities Strong oxidizers

Exposure Routes inhalation, skin and/or eye contact

Symptoms dermatitis, bronchitis, [potential occupational carcinogen]

Target Organs respiratory system, skin, bladder, kidneys

Cancer Site [lung, kidney & skin cancer]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: No recommendation
Change: Daily

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detecta concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operate pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressu demand or other positive-pressure mode in combination with an auxiliary self-contained posit pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or b mounted organic vapor canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 1415 (/niosh/ipcsneng/neng1415.html) See MEDICAL TESTS: 0054 (/niosh/docs/2005-110/nmed0054.

Page last reviewed: February 3, 2009
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

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Copper (dusts and mists, as Cu)

Synonyms & Trade Names Copper metal dusts, Copper metal fumes

CAS No. 7440-50-8	**RTECS No.** GL5325000 (/niosh-rtecs/GL5140C8.html)	**DOT ID & Guide**
Formula Cu	**Conversion**	**IDLH** 100 mg/m³ (as Cu) See: 7440508 (/niosh/idlh/7440508.html)
Exposure Limits **NIOSH REL** *: TWA 1 mg/m³ [*Note: The REL also applies to other copper compounds (as Cu) except Copper fume.] **OSHA PEL** *: TWA 1 mg/m³ [*Note: The PEL also applies to other copper compounds (as Cu) except copper fume.]		**Measurement Methods** **NIOSH** 7029 (/niosh/docs/2003-154/pdfs (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 154/pdfs/7301.pdf), 7303 (/niosh/docs/20 9102 (/niosh/docs/2003-154/pdfs/9102.pd **OSHA** ID121 (http://www.osha.gov/dts/sltc/methods/inorga ID125G (http://www.osha.gov/dts/sltc/methods/inorga See: NMAM (/niosh/docs/2003-154/) or OSH (http://www.osha.gov/dts/sltc/methods/index.l

Physical Description Reddish, lustrous, malleable, odorless solid.

MW: 63.5	**BP:** 4703° F	MLT: 1981°F	**Sol:** Insoluble	**VP:** 0 mmHg (approx)
Sp.Gr: 8.94	**Fl.P:** NA	**UEL:** NA	**LEL:** NA	

Noncombustible Solid in bulk form, but powdered form may ignite.

Incompatibilities & Reactivities Oxidizers, alkalis, sodium azide, acetylene

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis; in kidney damage; anemia

Target Organs Eyes, skin, respiratory system, liver, kidneys (increased risk with Wilson's disease)

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH/OSHA

Up to 5 mg/m³:
(APF = 5) Any quarter-mask respirator.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*

Up to 10 mg/m³:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N R100, P100.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*
(APF = 10) Any supplied-air respirator*

Up to 25 mg/m³:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.*

Up to 50 mg/m³:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-effic filter*
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 100 mg/m³:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressur positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operate demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressu positive-pressure mode in combination with an auxiliary self-contained positive-pressure brea

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0240 (/niosh/ipcsneng/
MEDICAL TESTS: 0057 (/niosh/docs/2005-110/nmed0057.html)

Page last reviewed: February 3, 2009
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

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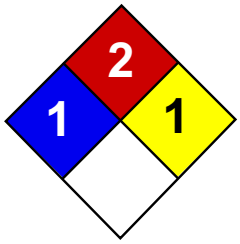

Material Safety Data Sheet
Iron Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Iron Metal

Catalog Codes: SLI2047, SLI1996

CAS#: 7439-89-6

RTECS: NO4565500

TSCA: TSCA 8(b) inventory: Iron Metal

CI#: Not applicable.

Synonym:

Chemical Name: Iron

Chemical Formula: Fe

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Iron Metal, powder	7439-89-6	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to liver, cardiovascular system, upper respiratory tract, pancreas. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Chlorine Trifluoride reacts with iron with incandescence. Powdered iron reacts with fluorine below redness with incandescence. Reduced iron decomposes with nitrogen dioxide @ ordinary temperature with incandescence. Reacting mass formed by mixture of phosphorus and iron can become incandescent when heated. This material is flammable in powder form only.

Special Remarks on Explosion Hazards: Material in powdered form can explode when exposed to heat or flame

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid metallic powder.)

Odor: Odorless.

Taste: Tasteless.

Molecular Weight: 55.85 g/mole

Color: Black to Grey.

pH (1% soln/water): Not applicable.

Boiling Point: 3000°C (5432°F)

Melting Point: 1535°C (2795°F)

Critical Temperature: Not available.

Specific Gravity: Density: 7.86 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, incompatible materials, water/moisture, air, dust generation.

Incompatibility with various substances:
Reactive with oxidizing agents, acids. Slightly reactive to reactive with moisture.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity:
Hot iron(wire) burns in Chlorine gas. Violent decompositon of hydrogen peroxide (53% by weight or greater) may be caused by contact with iron. Readily oxidizes in moist air forming rust. Reactive with halogens. Incompatible with acetaldehyde, ammonium peroxodisulfate, chloroformamidinum, chloric acid, ammonium nitrate, dinitorgen tetroxide, nitryl fluoride, polystyrene, sodium acetylide, potassium dichromate, peroxyformic acid, sulfuric acid, sodium carbide. Readily attacked by dilute mineral acids and or attacked or dissolved by organic acids. Not appreciably attacked by cold sulfuric acid, or nitric acid, but is attacked by hot acids.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 30000 mg/kg [Rat].

Chronic Effects on Humans: May cause damage to the following organs: liver, cardiovascular system, upper respiratory tract, pancreas.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Iron metal filings or dust: May cause skin irritation by mechanical action. Iron metal wire: Not likely to cause skin irritation Eyes: Iron metal filings or dust: Can irritate eyes by mechanical action. Iron metal wire: No hazard. Will not cause eye irritation. Inhalation: Iron dust: Can irritate the respiratory tract by mechanical action. Iron metal wire or filings: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count. Ingestion: Iron metal wire: Not an ingestion hazard: Iron metal filings or dust: The amount of ingested iron which constitutes a toxic dose is not well defined. Proposed toxic doses of elemental iron are 20 mg/kg for gastrointestinal irritation to greater than 60 mg/kg for systemic toxicity. Gastrointestinal effects are the first signs to appear, with hemorrhagic vomiting and diarrhea, hematochezia, abdominal pain, lethargy, metabolic acidosis, coagulaopathy, shock, coma and convulsions developing from 0 to 6 hours after ingestion. Leukocytosis may also occur. An asymptomatic phase may ensue at 6 to 12 hours postingestion, followed by hypoglycemia or hyperglycemia, hepatic and renal failure, severe acidosis, cyanosis, fever, CNS depression (lethargy, restlessness and/or confusion seizures), hypotension, and cardiovascular collapse/cardiac failure in 12 to 48 hours. Hepatic cirrhosis, gastrointestinal scarring and/or strictures may arise in 2 to 6 weeks. It may also cause an anaphylactoid reaction. Non-cardiogenic pulmonary edema also develop in severe cases of iron intoxication. Chronic Potential Health Effects: Inhalation: Chronic inhalation of iron dust can lead to accumulation in the lungs and a characteristic stippled appearance on X-rays. This condition, called SIDEROSIS, is considered benign in that it does not interfere with lung function and does not predispose to other disease. Chronic inhalation of iron dust may also cause fibrosis in the lungs. Ingestion: Clinical signs of iron overload appear when the total body iron is 5 to 10 times higher than normal. Neurobehavioral defects including depression, decreased activity, habituation, reflex startle, and conditioned avoidance response performance may occur. However, similiar effects were also seen in iron defficiency. It is therefore likely that these behavioral effects are secondary to general toxicity. High serum iron levels may be associated with an increased risk of fatal acute myocardial infarction (MI). Skin: Prolonged or repeated contact may cause hypersensivity.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Metal powder, flammable, n.o.s. (Iron metal powder) UNNA: 3089 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California Director's List of Hazardous Substances: Iron Metal TSCA 8(b) inventory: Iron Metal

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-4: Flammable solid.

DSCL (EEC):
R11- Highly flammable. S16- Keep away from sources of ignition - No smoking. S22- Do not breathe dust.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:52 PM

Last Updated: 11/01/2010 12:00 PM

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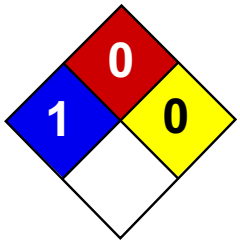

Health	1
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Manganese MSDS

Section 1: Chemical Product and Company Identification

Product Name: Manganese

Catalog Codes: SLM2245

CAS#: 7439-96-5

RTECS: OO9275000

TSCA: TSCA 8(b) inventory: Manganese

CI#: Not available.

Synonym:

Chemical Name: Manganese

Chemical Formula: Mn

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Manganese	7439-96-5	100

Toxicological Data on Ingredients: Manganese: ORAL (LD50): Acute: 9000 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, lungs, brain, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Moderate fire potential, in the form of dust or powder, when exposed to flame. When manganese if heated in the vapor of phosphorus at a very dull red heat, union occurs with incandescence. Concentrated nitric acid reacts with powdered manganese with incandescence and explosion. Powdered manganese ignites in chlorine.

Special Remarks on Explosion Hazards: Moderate explosion potential, in the form of dust or powder, when exposed to flame.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, reducing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.1 (mg/m3) from ACGIH (TLV) [United States] TWA: 5 (mg/m3) [Canada] TWA: 1 STEL: 3 (mg/m3) from NIOSH [United States] TWA: 5 (mg/m3) from OSHA (PEL) [United States]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Odorless.

Taste: Not available.

Molecular Weight: 54.94 g/mole

Color: Grayish white.

pH (1% soln/water): Not applicable.

Boiling Point: 2095°C (3803°F)

Melting Point: 1244°C (2271.2°F)

Critical Temperature: Not available.

Specific Gravity: 7.44 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Superficially oxidized on exposure to air. Reacts with aqueous solutions of sodium or potassium bicarbonate. Reacts with dilute mineral acids with evolution of hydrogen and formation of divalent manganous salts. Reacts with fluorine and chlorine to produce di or tri fluoride, and di and tri chloride, respectively. In the form of powder, it reduces most metallic oxides on heating. On heating, it reacts directly with carbon, phosphorus, antimony, or arsenic. Also incompatible with hydroxides, cyanides, carbonates.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 9000 mg/kg [Rat].

Chronic Effects on Humans: May cause damage to the following organs: blood, lungs, brain, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant), of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
Manganese can cross the placenta. May cause cancer (tumorigenic) based on animal data.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritaiton Eyes: Dust may cause mechanical irritation. Inhalation: Dust may cause respiratory tract irritation. May cause "Metal Fume Fever" which may include flu-like symptoms (fever, chills, upset stomach, vomiting, weakness, headache, body aches, muscle pains, dry mouth and throat, coughing, tightness of the chest). May affect behavior/Central Nervous system (change in motor activity, torpor, nervousness, tremor, yawning, mood swings, irritability, restlessness, fatigue, headache, apathy, languor, insomnia than somnolence, hallucinations, delusions, uncontrollable laughter followed by crying, compulsions, aggressivness, weakness in legs, memory loss, decreased libido, impotence, salivation, hearing loss, slow gait,), and respiration (dyspnea, shallow respiration, cyanosis, alveolar inflammation). Ingestion: Repeated or prolonged exposure from ingestion may affect brain (degenerative changes), blood and metabolism. Ingestion: May cause digestive tract irritation. There is a low gastrointesitnal absorption of manganese. Chronic Potential Health Effects: Inhalation: Repeated or prolonged exposure from inhalation may affect brain (degeneratiave changes), behavior/Central Nervous system with symptoms to acute exposure. May also affect liver (chronic liver disease, jaundice) Ingestion: Repeated or prolonged exposure from ingestion may affect brain, blood and metabolism

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Manganese Rhode Island RTK hazardous substances: Manganese Pennsylvania RTK: Manganese Minnesota: Manganese Massachusetts RTK: Manganese New Jersey: Manganese New Jersey spill list: Manganese Louisiana spill reporting: Manganese California Director's List of Hazardous Substances: Manganese TSCA 8(b) inventory: Manganese SARA 313 toxic chemical notification and release reporting: Manganese

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): Not applicable.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 06:03 PM

Last Updated: 11/01/2010 12:00 PM

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MSDS Number: **B7222** * * * * * *Effective Date:* ***05/26/09*** * * * * * *Supercedes:* ***07/06/06***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

METHYL TERT-BUTYL ETHER

1. Product Identification

Synonyms: 2-Methoxy-2-methylpropane; tert-Butyl methyl ether; Methyl 1,1-dimethyl ethyl ether; MTBE
CAS No.: 1634-04-4
Molecular Weight: 88.15
Chemical Formula: C5H12O
Product Codes:
J.T. Baker: 9034, 9042, 9043
Mallinckrodt: 5398

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Methyl tert-butyl Ether	1634-04-4	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT CENTRAL NERVOUS SYSTEM, BLOOD, AND KIDNEYS. A CENTRAL NERVOUS SYSTEM DEPRESSANT. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapor can irritate respiratory tract. Causes central nervous system effects. Breathing high concentrations in air can cause lightheadedness, dizziness, weakness, nausea, headache.
Ingestion:
May cause nausea, vomiting. Other symptoms similar to inhalation may occur. Laryngeal, ocular, and respiratory muscles are affected in severe poisoning.
Skin Contact:
A mild skin irritant which causes loss of natural oils. May be a route of absorption into the body.
Eye Contact:
Vapors can irritate eyes; splashes may cause damage to eye tissue.
Chronic Exposure:
Symptoms noted above may be produced by cumulative exposure.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:
Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Flash point: -27C (-17F)
Autoignition temperature: 435C (815F)
Flammable limits in air % by volume:
lel: 1.6; uel: 8.4
Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.
Explosion:
Above the flash point, explosive vapor-air mixtures may be formed. Vapors can flow along surfaces to distant ignition source and flash back. Sealed containers may rupture when heated. Sensitive to static discharge.
Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV): 50 ppm (TWA), A3 - Confirmed animal carcinogen with unknown relevance to humans
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. Use explosion-proof equipment.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face organic vapor respirator may be worn for up to ten times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Odor:
Characteristic ethereal odor.

Solubility:
4.8 g/100g of water.
Specific Gravity:
0.74
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
55C (131F)
Melting Point:
-110C (-166F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
245 @ 25C (77F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Unstable in acid solutions.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Oxidizers, acids.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Methyl tert butyl ether: Oral rat LD50: 4 gm/kg; inhalation rat LC50: 23576 ppm/4H.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Methyl tert-butyl Ether (1634-04-4)	No	No	3

12. Ecological Information

Environmental Fate:
When released into the soil, this material is not expected to biodegrade. When released into the air, this material is expected to adversely affect the ozone layer. When released into the soil, this material is expected to quickly evaporate. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is not expected to be degraded by photolysis. When released into the air, this material is expected to have a half-life between 1 and 10 days.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: METHYL TERT-BUTYL ETHER
Hazard Class: 3
UN/NA: UN2398
Packing Group: II
Information reported for product/size: 215L

International (Water, I.M.O.)

Proper Shipping Name: METHYL BUTYL ETHER
Hazard Class: 3
UN/NA: UN2398
Packing Group: II
Information reported for product/size: 215L

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15. Regulatory Information

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--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                    TSCA  EC   Japan  Australia
-----------------------------------------------  ----  ---  -----  ---------
Methyl tert-butyl Ether (1634-04-4)            Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                       --Canada--
Ingredient                                    Korea  DSL   NDSL  Phil.
-----------------------------------------------  -----  ---   ----  -----
Methyl tert-butyl Ether (1634-04-4)            Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                        -SARA 302-    ------SARA 313------
Ingredient                              RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Methyl tert-butyl Ether (1634-04-4)     No    No      Yes         No

--------\Federal, State & International Regulations - Part 2\----------------
                                                 -RCRA-    -TSCA-
Ingredient                              CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Methyl tert-butyl Ether (1634-04-4)     1000       No         No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: Yes Pressure: No
Reactivity: No          (Pure / Liquid)
```

Australian Hazchem Code: 3[Y]E
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **2** Flammability: **3** Reactivity: **0**
Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT CENTRAL NERVOUS SYSTEM, BLOOD, AND KIDNEYS. A CENTRAL NERVOUS SYSTEM DEPRESSANT. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Label Precautions:
Keep away from heat, sparks and flame.
Avoid contact with eyes, skin and clothing.
Avoid breathing vapor.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases call a physician.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.
****
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **S2594** * * * * * *Effective Date:* ***09/23/09*** * * * * * *Supercedes:* ***11/09/07***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

SODIUM METAL

1. Product Identification

Synonyms: Sodium; Natrium
CAS No.: 7440-23-5
Molecular Weight: 22.99
Chemical Formula: Na
Product Codes:
J.T. Baker: 9410
Mallinckrodt: 7340, 7348

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium	7440-23-5	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! FLAMMABLE SOLID. CORROSIVE. WATER REACTIVE. CATCHES FIRE IF EXPOSED TO AIR. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO ALL BODY TISSUE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 3 - Severe (Water Reactive)
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS D EXTINGUISHER
Storage Color Code: Red Stripe (Store Separately)

Potential Health Effects

Inhalation:
Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.
Ingestion:
Extremely dangerous, corrosive material. Will react immediately with saliva to cause serious burns and possible local combustion and even explosion of hydrogen in the mouth or esophagus. The metal's low melting point can cause further complications.
Skin Contact:
Corrosive, can cause serious burns due to almost immediate reaction with water, especially on moist skin. If metal ignites, very deep burns and tissue destruction can occur.
Eye Contact:
Corrosive. May cause redness, pain, blurred vision, and damage from severe alkali burns.
Chronic Exposure:
Continued or repeated skin contact may cause dermatitis, mucous membrane irritation, and lung damage..
Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep patient quiet in half upright position. Get medical attention immediately.
Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Autoignition temperature: > 115C (> 239F)
Flammable solid, water reactive. Can react vigorously with water, steam, acids to release flammable/explosive hydrogen. Dangerous in presence of oxidants. May ignite spontaneously in moist air or oxygen. May re-ignite after fire is extinguished.
(Autoigintion temperature given in dry air.)
Explosion:
Reactions with water forms sodium hydroxide and hydrogen gas which may explode. Burns violently accompanied by explosions which cause spattering of the molten material.
Fire Extinguishing Media:
Use dry soda ash, dry salt, sand, graphite powder or metal-fire-extinguishing dry powder such as Met-L-X®. Do not use water, foam, carbon dioxide, dry chemical, or chlorinated fire extinguishers.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Collect spilled material quickly and transfer to a container of kerosene, light oil or similar hydrocarbon fluid for recovery. Minimize exposure to air. Do not use water on metal.
If the spilled sodium has come into contact with water, proceed cautiously. The reaction can rapidly proceed to self-ignition of hydrogen and spattering of molten sodium. Evacuate the area, put on protective equipment and proceed as with a metal fire.
Waste sodium should be packaged under a hydrocarbon fluid and sent to an approved disposal facility.
US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Keep away from water or locations where water may be needed for fire. Avoid high temperatures. Store under nitrogen or kerosene. Never store under halogenated hydrocarbons. A detached fire-resistive building is recommended for quantity storage. Isolate from air, acids, and oxidizing materials. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator should be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Light, silvery-white metal.
Odor:

Odorless.
Solubility:
Decomposes violently in water.
Density:
0.968 @ 20C / 4C.
pH:
Water solution alkaline (pH > 7).
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
881.4C (1618F)
Melting Point:
97.8C (208F)
Vapor Density (Air=1):
0.003 @ 900C.
Vapor Pressure (mm Hg):
1.2 @ 400C (752F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Unstable. Reacts violently with water.
Hazardous Decomposition Products:
Does not decompose but can form flammable hydrogen in contact with air.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Water, oxygen, carbon dioxide, carbon tetrachloride, halogens, acetylene, metal halides, ammonium salts, oxides, oxidizing agents, acids, alcohols, chlorinated organic compounds, many other substances.
Conditions to Avoid:
Air, heat, flames, ignition sources and incompatibles.

11. Toxicological Information

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Sodium (7440-23-5)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: SODIUM
Hazard Class: 4.3
UN/NA: UN1428
Packing Group: I
Information reported for product/size: 1LB

International (Water, I.M.O.)

Proper Shipping Name: SODIUM
Hazard Class: 4.3
UN/NA: UN1428
Packing Group: I
Information reported for product/size: 1LB

15. Regulatory Information

```
--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                    TSCA  EC   Japan  Australia
-----------------------------------------------  ----  ---  -----  ---------
Sodium (7440-23-5)                             Yes  Yes   No       Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                       --Canada--
Ingredient                                    Korea  DSL   NDSL  Phil.
-----------------------------------------------  -----  ---   ----  -----
Sodium (7440-23-5)                             Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                        -SARA 302-    ------SARA 313------
Ingredient                              RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Sodium (7440-23-5)                      No    No      No         No

--------\Federal, State & International Regulations - Part 2\----------------
                                                -RCRA-    -TSCA-
Ingredient                              CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Sodium (7440-23-5)                      10         No         No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: Yes Pressure: No
Reactivity: Yes         (Pure / Solid)
```

Australian Hazchem Code: 4W
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **3** Flammability: **3** Reactivity: **2** Other: **Water reactive**
Label Hazard Warning:
DANGER! FLAMMABLE SOLID. CORROSIVE. WATER REACTIVE. CATCHES FIRE IF EXPOSED TO AIR. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO ALL BODY TISSUE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor.
Use only with adequate ventilation.
Store in a tightly closed container.
Do not get wet.
Keep away from heat, sparks and flame.
Wash thoroughly after handling.
Remove and wash contaminated clothing promptly.
Label First Aid:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
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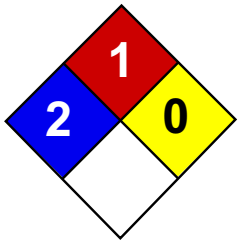
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)



Material Safety Data Sheet
1,1,1-Trichloroethane MSDS

Section 1: Chemical Product and Company Identification

Product Name: 1,1,1-Trichloroethane

Catalog Codes: SLT4180, SLT2167, SLT3460

CAS#: 71-55-6

RTECS: KJ2975000

TSCA: TSCA 8(b) inventory: 1,1,1-Trichloroethane

CI#: Not available.

Synonym:

Chemical Formula: CH3CCl3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{1,1,1-}Trichloroethane	71-55-6	100

Toxicological Data on Ingredients: 1,1,1-Trichloroethane: ORAL (LD50): Acute: 9600 mg/kg [Rat]. 6000 mg/kg [Mouse]. DERMAL (LD50): Acute: 15800 mg/kg [Rabbit]. VAPOR (LC50): Acute: 18000 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant), of ingestion. Hazardous in case of skin contact (irritant, permeator), of inhalation. Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, the nervous system, liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 537°C (998.6°F)

Flash Points: Not available.

Flammable Limits: LOWER: 7.5% UPPER: 12.5%

Products of Combustion: These products are carbon oxides (CO, CO2), halogenated compounds.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of oxidizing materials, of acids, of alkalis.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive to explosive in presence of oxidizing materials, of acids, of alkalis.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 350 STEL: 440 CEIL: 440 (ppm) from ACGIH (TLV) [1995] TWA: 1900 STEL: 2460 CEIL: 2380 (mg/m3) from ACGIH [1995]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 133.41 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: 74.1°C (165.4°F)

Melting Point: -32.5°C (-26.5°F)

Critical Temperature: Not available.

Specific Gravity: 1.3376 (Water = 1)

Vapor Pressure: 100 mm of Hg (@ 20°C)

Vapor Density: 4.6 (Air = 1)

Volatility: Not available.

Odor Threshold: 400 ppm

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 6000 mg/kg [Mouse]. Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 18000 ppm 4 hour(s) [Rat].

Chronic Effects on Humans: The substance is toxic to lungs, the nervous system, liver, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Detected in maternal milk in human.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : 1,1,1-Trichloroethane : UN2831 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: 1,1,1-Trichloroethane Massachusetts RTK: 1,1,1-Trichloroethane TSCA 8(b) inventory: 1,1,1-Trichloroethane SARA 313 toxic chemical notification and release reporting: 1,1,1-Trichloroethane CERCLA: Hazardous substances.: 1,1,1-Trichloroethane

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).

DSCL (EEC):
R38- Irritating to skin. R41- Risk of serious damage to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:31 PM

Last Updated: 11/01/2010 12:00 PM

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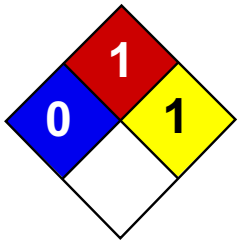

Health	1
Fire	1
Reactivity	1
Personal Protection	E

Material Safety Data Sheet
Zinc Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Zinc Metal

Catalog Codes: SLZ1054, SLZ1159, SLZ1267, SLZ1099, SLZ1204

CAS#: 7440-66-6

RTECS: ZG8600000

TSCA: TSCA 8(b) inventory: Zinc Metal

CI#: Not applicable.

Synonym: Zinc Metal Sheets; Zinc Metal Shot; Zinc Metal Strips

Chemical Name: Zinc Metal

Chemical Formula: Zn

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Zinc Metal	7440-66-6	100

Toxicological Data on Ingredients: Zinc Metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 480°C (896°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials, of acids, of alkalis, of moisture. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Zinc + NaOH causes ignition. Oxidation of zinc by potassium proceeds with incandescence. Residues from zinc dust /acetic acid reduction operations may ignite after long delay if discarded into waste bins with paper. Incandescent reaction when Zinc and Arsenic or Tellurium, or Selenium are combined. When hydrazine mononitrate is heated in contact with zinc, a flamming decomposition occurs at temperatures a little above its melting point. Contact with acids and alkali hydroxides (sodium hydroxide, postasium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas. Zinc foil ignites if traces of moisture are present. It is water reactive and produces flammable gases on contact with water. It may ignite on contact with water or moist air.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.

Storage:
Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid. Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 65.39 g/mole

Color: Bluish-grey

pH (1% soln/water): Not applicable.

Boiling Point: 907°C (1664.6°F)

Melting Point: 419°C (786.2°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials, moisture

Incompatibility with various substances:
Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product may react violently with water to emit flammable but non toxic gases.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with acids, halogenated hydrocarbons, NH4NO3, barium oxide, Ba(NO3)2, Cadmium, CS2, chlorates, Cl2, CrO3, F2, Hydroxylamine, Pb(N3)2, MnCl2, HNO3, performic acid, KClO3, KNO3, N2O2, Selenium, NaClO3, Na2O2, Sulfur, Te, water, (NH4)2S, As2O3, CS2, CaCl2, chlorinated rubber, catalytic metals, halocarbons, o-nitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides, seleninyl bromide, HCl, H2SO4, (Mg +Ba(NO3)2 +BaO2), (ethyl acetoacetate +tribromoneopentyl alcohol. Contact with Alkali Hydroxides(Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide. May react with water.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia and weight loss. Eyes: May cause eye irritation. Ingestion: May be harmul if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, loss of appetite, malaise, abdominal pain. fever, and chills. May affect behavior/central nervous system and autonomic nervous system with ataxia, lethargy, staggering gait, mild derrangement in cerebellar function, lightheadness, dizzness, irritability, muscular stiffness, and pain. May also affect blood. Inhalation: Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headached fever, maliase, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis. The toxicological properties of this substance have not been fully investisgated.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: Not available.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
New York release reporting list: Zinc Metal Rhode Island RTK hazardous substances: Zinc Metal Pennsylvania RTK: Zinc Metal Florida: Zinc Metal Michigan critical material: Zinc Metal Massachusetts RTK: Zinc Metal New Jersey: Zinc Metal California Director's List of Hazardous Substances: Zinc Metal TSCA 8(b) inventory: Zinc Metal TSCA 12(b) one time export: Zinc Metal SARA 313 toxic chemical notification and release reporting: Zinc Metal CERCLA: Hazardous substances.: Zinc Metal: 1000 lbs. (453.6 kg)

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not Available

DSCL (EEC):
R15- Contact with water liberates extremely flammable gases. R17- Spontaneously flammable in air. S7/8- Keep container tightly closed and dry.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 12:18 AM

Last Updated: 11/01/2010 12:00 PM

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APPENDIX F
COMMUNITY AIR MONITORING PLAN

COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan requires real-time air monitoring for volatile compounds and particulate levels at the perimeter of the work area. This plan includes the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the work area on a continuous basis. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for regulatory personnel to review.

- Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations during excavation activities. If the downwind particulate level is 150 µg/m3 greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for regulatory personnel to review.

Vapor Emissions Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 mg/m3 over background.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, the site soil will be misted with water and the downwind area will be monitored. If the water mist does not mitigate the elevated levels all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and, if organic vapor levels are approaching 5 ppm above background for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health & Safety Plan of the Remedial Action Plan will go into effect.

2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Health & Safety Officer.

APPENDIX G
WELL CONSTRUCTION LOGS

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-5**

TOTAL DEPTH: **23'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Courtlandt Crescent**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**383 East 162nd Street**	DRILLER:	**Josh**
JOB NO.:	**Phipps FER**	RIG TYPE:	**Geoprobe 6610 DT**
LOGGED BY:	**Jason Cooper**	METHOD OF DRILLING:	**Hollow stem augers**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**9/12/2011**	HAMMER WT./DROP	**NA**

▽ Water level in well

DEPTH FEET	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		No soil samples collected				2-Inch Sch. 40 PVC Riser- 0-8 feet above grade	
5							
10							
▽							
15						2-Inch 20 Slot Screen- 8-23 feet	
20							

NOTES:

Well was developed daily from 9/12/2011 through to 9/23/2011

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-6**

TOTAL DEPTH: **10'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Courtlandt Crescent**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**383 East 162nd Street**	DRILLER:	**Josh**
JOB NO.:	**Phipps FER**	RIG TYPE:	**Geoprobe 6610 DT**
LOGGED BY:	**Jason Cooper**	METHOD OF DRILLING:	**Hollow stem augers**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**9/12/2011**	HAMMER WT./DROP	**NA**

▽ Water level in well

DEPTH FEET	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		No soil samples collected					2-Inch Sch. 40 PVC Riser- 0-5 feet above grade
5							2-Inch 20 Slot Screen- 0-10 feet
▽ 10							

NOTES:

Well was developed daily from 9/12/2011 through to 9/23/2011

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

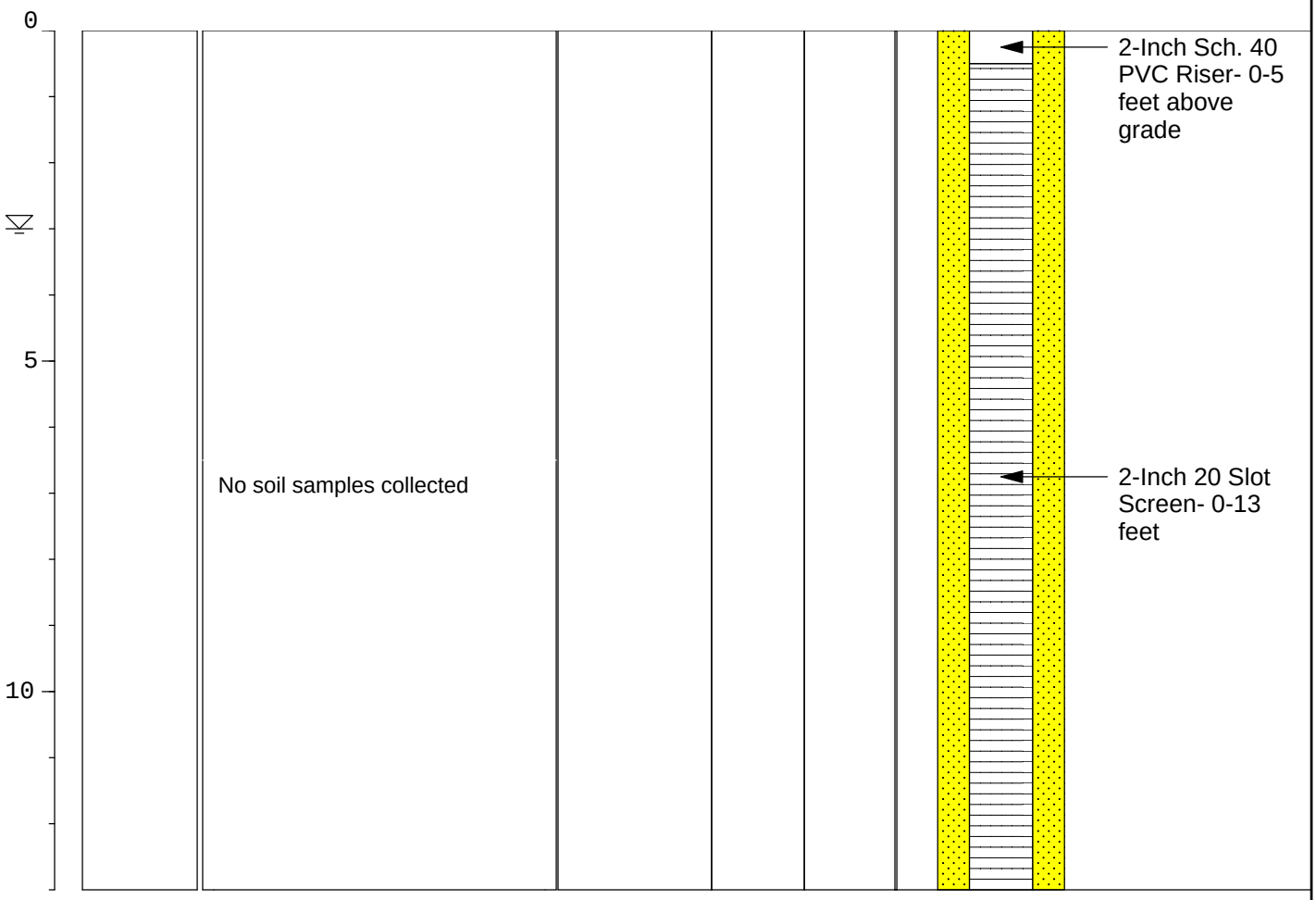
BOREHOLE NO.: **MW-7**

TOTAL DEPTH: **13'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Courtlandt Crescent**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**383 East 162nd Street**	DRILLER:	**Josh**
JOB NO.:	**Phipps FER**	RIG TYPE:	**Geoprobe 6610 DT**
LOGGED BY:	**Jason Cooper**	METHOD OF DRILLING:	**Hollow stem augers**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**10/3/2011**	HAMMER WT./DROP	**NA**

▽ Water level in well

DEPTH FEET	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION



NOTES:

Well was developed daily from 9/12/2011 through to 9/23/2011

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

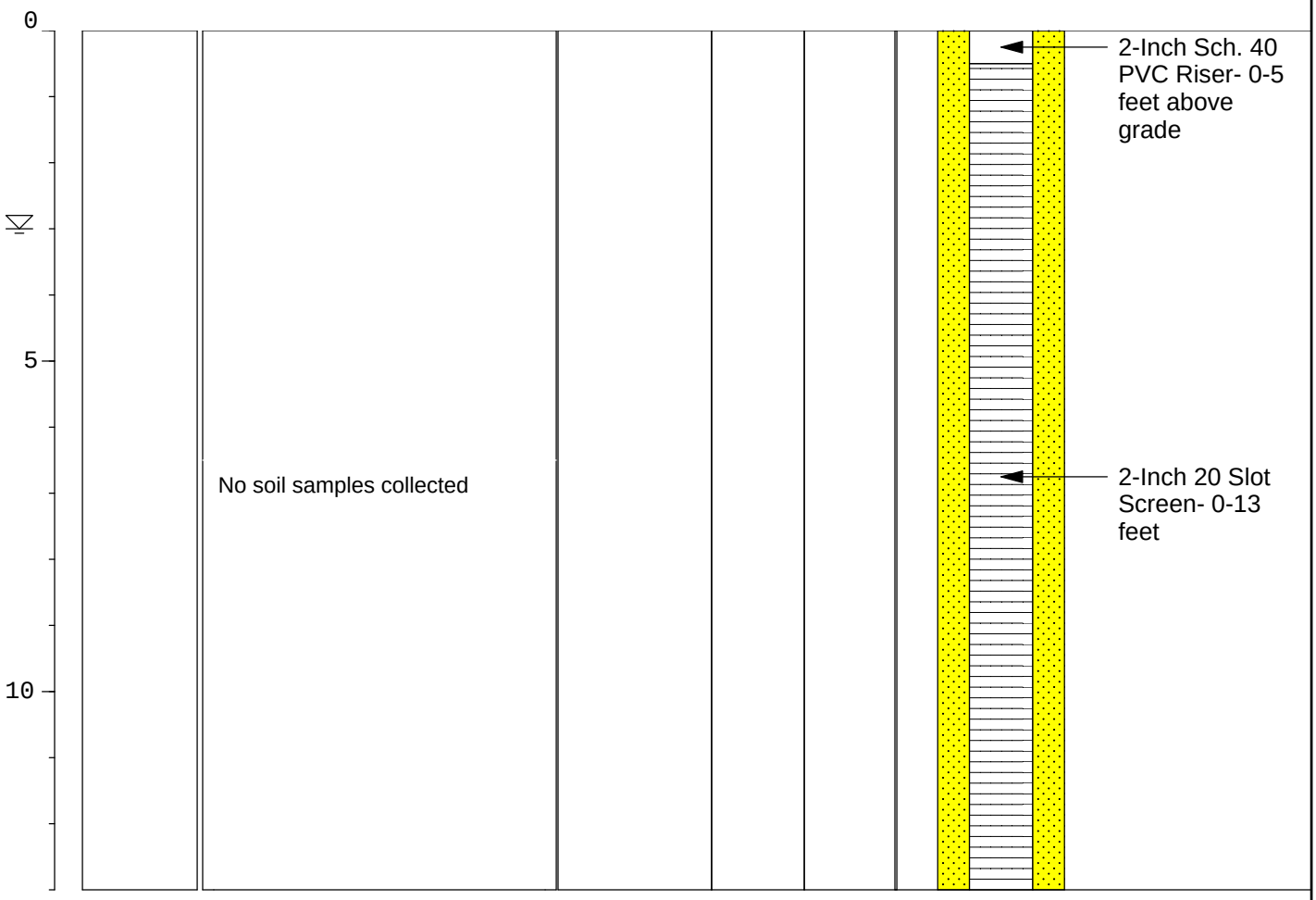
BOREHOLE NO.: **MW-8**

TOTAL DEPTH: **13'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Courtlandt Crescent**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**383 East 162nd Street**	DRILLER:	**Josh**
JOB NO.:	**Phipps FER**	RIG TYPE:	**Geoprobe 6610 DT**
LOGGED BY:	**Jason Cooper**	METHOD OF DRILLING:	**Hollow stem augers**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**10/3/2011**	HAMMER WT./DROP	**NA**

▽ Water level in well

DEPTH FEET	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION



NOTES:

Well was developed daily from 9/12/2011 through to 9/23/2011

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

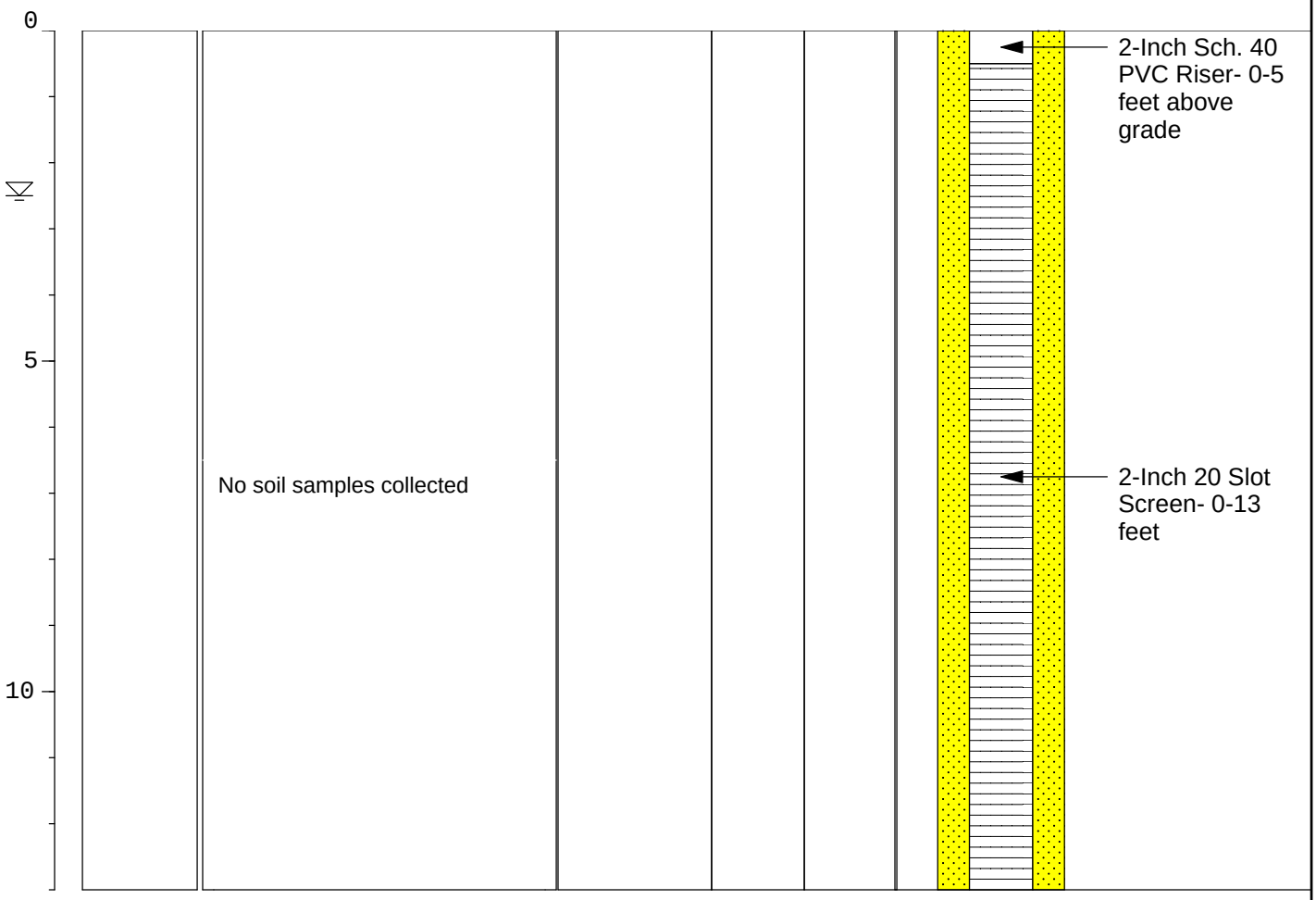
BOREHOLE NO.: **MW-9**

TOTAL DEPTH: **13'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Courtlandt Crescent**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**383 East 162nd Street**	DRILLER:	**Josh**
JOB NO.:	**Phipps FER**	RIG TYPE:	**Geoprobe 6610 DT**
LOGGED BY:	**Jason Cooper**	METHOD OF DRILLING:	**Hollow stem augers**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**10/3/2011**	HAMMER WT./DROP	**NA**

▽ Water level in well

DEPTH FEET	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION



NOTES:

Well was developed daily from 9/12/2011 through to 9/23/2011

APPENDIX H
QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

FOR THE
SITE MANAGEMENT PLAN
AT
COURTLANDT CRESCENT
383 EAST 162ND STREET
BRONX, NEW YORK

August 2012

Prepared for:
Courtlandt Crescent Associates, L.P.
902 Broadway, 13th Floor
New York, NY 10010

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, New York 11803
(516) 576-8844

Quality Assurance Project Plan

1.1 Introduction - The following Quality Assurance Project Plan ("QAPP") has been prepared specifically for use during implementation of the Site Management Plan (SMP) at the Courtlandt Crescent development site located at 383 East 162nd Street in the Bronx, New York (hereinafter referred to as the 'Site'). This Plan was prepared in accordance to Section 2 of DER-10 and approved as stated below.

Prepared by: _____ Date: 8-1-12
Stephen Malinowski, Quality Assurance Officer

Approved by: _____ Date: 8-1-12
Deborah Shapiro, Senior Project Manager

1.2 QAPP - Table of Contents

The following elements are included in this QAPP:

Title Page and Introduction

Table of Contents

Project Description

Project Organization

Quality Assurance Objectives for Data Measurements

Sampling Procedure

Sample and Document Custody Procedures

Calibration Procedures and Frequency

Analytical Procedures

Data Reduction, Validation and Reporting

Internal Quality Control Checks

Performance and System Audits

Preventive Maintenance

Data Measurement Assessment Procedures

Corrective Action

Quality Assurance Reports and Management

1.3 Project Description - The SMP subject to this QAPP has been prepared to address the following issues:

- Conduct post-remedial groundwater sampling

These actions are described in detail in the SMP.

1.4 Project Organization – Ms. Deborah Shapiro will serve as the Project Manager (PM) and will be responsible for the overall scheduling and performance of all the NYSDEC-approved remedial action activities.

Mr. Stephen Malinowski will serve as the Quality Assurance Officer (QAO) for this project. His duties will include:

- Review of laboratory data packages
- Interface with laboratory
- Performance of Field Audits

Experienced CA RICH staff will perform and/or oversee completion of all field activities described in the SMP.

1.5 Quality Assurance Objectives and Data Measurement – There are two sources of data collection methodology that will provide data information during this SMP.

Field Screening - Organic vapor readings will be recorded from the head space of soil samples. This data is intended to be used only as a screening tool. To meet these goals, clean sampling tools will be used for each head space measurement and the Photo-Ionization Detector (PID) will be calibrated at the beginning of each screening day on-Site.

Chemical Analysis – All environmental samples will be delivered to a New York State-Certified laboratory contracted to CA RICH for chemical analysis. Groundwater samples will be analyzed for TCL VOCs via EPA Method 8260. This data is intended to determine that the remedial measures have mitigated the risk from any contaminants in the groundwater at the Site. The laboratory will follow the NYSDEC – Analytical Services Protocol dated 2005. All samples will be analyzed using NYSDEC ASP Category B deliverables. All samples will be collected in pre-cleaned laboratory supplied containers, placed in iced-filled coolers, and delivered to the laboratory by CA RICH within 48 hours of collection.

Quality assurance objectives are generally defined in terms of five parameters:

- **Representativeness -** Representativeness is the degree to which sampling data accurately and precisely represents Site conditions, and is dependent on sampling and analytical variability. The SMP has been designed to assess the presence of the constituents in the target media at the time of sampling. The Plan presents the rationale for sample quantities and location. The SMP also presents field sampling methodologies and laboratory analytical methodologies.

  The use of the prescribed field and laboratory analytical methods with associated holding times and preservation requirements are intended to provide representative data. Further discussion of QC checks is presented in Section 1.11.

- **Comparability** - Comparability is the degree of confidence with which one data set can be compared to another data set. Comparability between this SMP, and to the extent possible,

with existing data, will be maintained through consistent sampling and analytical methodology set forth in the QAPP; the SMP; the NYSDEC ASP analytical methods (2005) with NYSDEC ASP QA/QC requirements (2005); and through use of QA/QC procedures and appropriately trained personnel.

- **Completeness -** Completeness is defined as a measure of the amount of valid data obtained from an event and/or remedial action compared to the amount that was expected to be obtained under normal conditions. This will be determined upon assessment of the analytical results, as discussed in Section 1.12.

- **Precision -** Precision is the measure of reproducibility of sample results. The goal is to maintain a level of analytical precision consistent with the objectives of the SMP. To maximize precision, sampling and analytical procedures will be followed. All work for the investigation phase of this project will adhere to established protocols presented in the QAPP and SMP. Checks for analytical precision will include the analysis of matrix spike duplicates, laboratory duplicates, and field duplicates. Checks for field measurement precision will include obtaining duplicate field measurements. Further discussion of precision QC checks is provided in Section 1.11.

- **Accuracy** - Accuracy is the deviation of a measurement from the true value of a known standard. Both field and analytical accuracy will be monitored through initial and continuing calibration of instruments. In addition, internal standards, matrix spikes, blank spikes, and surrogates (system monitoring compounds) will be used to assess the accuracy of the laboratory analytical data. Further discussion of these QC samples is provided in Section 1.11.

1.6 Sampling Procedures - The sampling procedures that will be employed are discussed in detail in the SMP.

1.7 Sample and Document Custody Procedures

- **General** - The Chain-of-Custody program allows for the tracing of possession and handling of the sample from its time of collection through its chemical analysis in the laboratory. The chain-of-custody program at this site will include:

  - Sample labels
  - Chain-of-Custody records
  - Field records

- **Sample Labels** - To prevent misidentification of samples, a label will be affixed to the sample container and will contain the following information:

  - Site Name
  - Sample identification number
  - Date and time of collection
  - Name of Sampler
  - Preservation (if any)
  - Type of analysis to be conducted

- **Chain-of-Custody Records** - To establish the documentation necessary to trace sample possession from the time of collection, a chain-of-custody record (sample attached) will be filled out and will accompany samples at all times. The record will contain the following information:

- Project name
- Printed name and signature of samplers
- Sample number
- Date and time of collection
- Sampling location
- Number of containers for each sample
- Signature of individuals involved in sample transfer (when relinquishing and accepting samples)
- Inclusive dates and times of possession

- **Field Records** - Field records will be maintained during each sampling effort in a logbook. All aspects of sample collection, handling and visual observations will be recorded. All sample collection equipment, field analytical equipment and equipment utilized to make physical measurements will be identified in the field logbook.

  All calculations, results and calibration data for field sampling, field analytical and field physical measurement equipment will also be recorded in the field logbook. Entries will be dated and initialed. Entries will be made in ink, and will be legible.

1.8 Calibration Procedures and Frequency - The contracted laboratory will follow the NYSDEC Category-B requirements for equipment calibration procedures and frequency.

The QA Officer and/or PM will be responsible for ensuring that the Field PID is calibrated at the beginning of each day of field sampling using calibration gas supplied by the manufacturer. A log of the meter calibration will be kept in the filed logbook.

1.9 Analytical Procedures - The laboratory analyses include PAHs via EPA Method 8270, TCL pesticides via EPA Method 8081, heavy metals and TAL metals using EPA Method 6000/7000 series, TCL VOCs via EPA Method 8260, TCL SVOCs via EPA Method 8270, and TCL PCBs via EPA 8082 and will follow NYSDEC ASP (2005) protocols with Category B deliverables. The following samples will be collected for QA/QC purposes for both the soil and groundwater sampling: trip blank, field blank, duplicate sample, matrix spike, and matrix spike duplicate. Frequencies are noted below. A qualified data validator will review the laboratory data and a Data Usability Summary Report (DUSR) will be prepared.

1.10 Data Reduction, Validation and Reporting

- **Field Data** - All field data recorded in logbooks or on log sheets will be evaluated in the Office and transferred to word processor text by field personnel or clerical staff. PID readings will be included on the logs. The QAO and/or PM will review this data for accuracy and completeness.

- **Laboratory Data** - The laboratory will transfer the instrument readings to laboratory report forms. Premier Environmental will perform independent data validation of all analytical data using NYSDEC DUSR protocols.

  The data validator will provide CA RICH with a Data Validation Summary Report. The QAO and/or PM will review the summary report as well as other field data and prepare a Data Usability Report. Both the Data Validation Summary Report and the Data Usability Report will be provided to NYSDEC.

  CA RICH will prepare summary tables of the validated analytical data using computer spreadsheet software. The data entries will be reviewed using the red check-green check

method. All entries will be reviewed and entry errors will be marked in red ink. Once these entries are corrected, the printouts will be marked with green ink and placed in the project file.

1.11 Internal Quality Control Checks

Both field and laboratory quality control checks are proposed for this project. In the event that there are any deviations from these checks, the PM and QAO will be notified. The proposed field and laboratory control checks are discussed below.

Field Quality Control Checks

- **Field Measurements -** To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.

- **Sample Containers -** Certified-clean sample containers will be supplied by the contracted laboratory.

- **Field Duplicates** – Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the SMP. In general, field duplicates will be analyzed at a five percent frequency (every 20 samples).

- **Field Rinse Blanks** – Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Field rinse blanks will be prepared and submitted for analysis during the soil endpoint and groundwater sampling. Field rinse blanks will be prepared by filling sample containers with analyte-free water (supplied by the laboratory), which has been routed through a cleaned sampling device.

- **Trip Blanks** – Trip blanks will be used to assess whether Site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once for every sample set shipment, and will be analyzed for VOCs. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory), which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for VOCs.

1.12 Performance and Systems Audits

Performance and systems audits will be completed in the field and the laboratory during the remedial action phase of this project as described below.

- **Field Audits –** The PM and QAO will monitor field performance and field meter calibrations to verify that measurements are taken according to established protocols. The PM will review all field logs. In addition, the PM and QAO will review the field rinse and trip blank data to identify potential deficiencies in field sampling and cleaning procedures.

- **Laboratory Audits** – The contracted laboratory will perform internal audits consistent with NYSDEC ASP (2005).

1.13 Preventive Maintenance

Preventive maintenance schedules have been developed for both field and laboratory instruments. A summary of the maintenance activities to be performed is presented below.

- **Field Instruments and Equipment -** Prior to any field sampling, each piece of field equipment will be inspected to assure it is operational. If the equipment is not operational, it must be serviced prior to use. All meters which require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, it is the responsibility of the field personnel to follow the maintenance schedule and arrange for prompt service.

- **Laboratory Instruments and Equipment -** The laboratory will document Laboratory instrument and equipment procedures. Documentation includes details of any observed problems, corrective measure(s), routine maintenance, and instrument repair (which will include information regarding the repair and the individual who performed the repair).

  Preventive maintenance of laboratory equipment generally will follow the guidelines recommended by the manufacturer. A malfunctioning instrument will be repaired immediately by in-house staff or through a service call from the manufacturer.

1.14 Data Assessment Procedures

The analytical data generated during the SMP will be evaluated with respect to precision, accuracy, and completeness. The procedures utilized when assessing data precision, accuracy, and completeness are presented below.

- **Data Precision Assessment Procedures -** Field precision is difficult to measure because of temporal variations in field parameters. However, precision will be controlled through the use of experienced field personnel, properly calibrated meters, and duplicate field measurements. Field duplicates will be used to assess precision for the entire measurement system including sampling, handling, shipping, storage, preparation and analysis.

  Laboratory data precision for organic analyses will be monitored through the use of matrix spike duplicate sample analyses. For other parameters, laboratory data precision will be monitored through the use of field duplicates and/or laboratory duplicates.

  The precision of data will be measured by calculation of the standard deviation (SD) and the coefficient of variation (CV) of duplicate sample sets. The SD and CV are calculated for duplicate sample sets by:

  $$SD = (A-B)/1.414$$
  $$CV = SD/((A+B)/2) = 1.414(A-B)/(A+B)$$

  Where:

  A = Analytical result from one of two duplicate measurements
  B = Analytical result from the second measurement.

  Where appropriate, A and B may be either the raw measurement or an appropriate mathematical transformation of the raw measurement (e.g., the logarithm of the concentration of a substance).

  Alternately, the Relative Percent Difference (RPD) can be calculated by the following equation:

  $$RPD = \frac{(A-B)}{(A+B)/2} \times 100$$

  $$RPD = 1.414\ (CV)(100)$$

- **Data Accuracy Assessment Procedures -** The accuracy of field measurements will be controlled by experienced field personnel, properly calibrated field meters, and adherence to established protocols. The accuracy of field meters will be assessed by review of calibration and maintenance logs.

  Laboratory accuracy will be assessed via the use of matrix spikes, surrogate spikes, and internal standards. Where available and appropriate, QA performance standards will be analyzed periodically to assess laboratory accuracy. Accuracy will be calculated as a percent recovery as follows:

  $$\text{Accuracy} = \frac{A-X}{B} \times 100$$

  Where:

  A = Value measured in spiked sample or standard
  X = Value measured in original sample
  B = True value of amount added to sample or true value of standard

  This formula is derived under the assumption of constant accuracy over the original and spiked measurements. If any accuracy calculated by this formula is outside of the acceptable levels, data will be evaluated to determine whether the deviation represents unacceptable accuracy, or variable, but acceptable accuracy. Accuracy objectives for matrix spike recoveries and surrogate recovery objectives are identified in the NYSDEC, ASP (2005).

- **Data Completeness Assessment Procedures -** Completeness of a field or laboratory data set will be calculated by comparing the number of samples collected or analyzed to the proposed number.

  $$\text{Completeness} = \frac{\text{No. Valid Samples Collected or Analyzed}}{\text{No. Proposed Samples Collected or Analyzed}} \times 100$$

  As general guidelines, overall project completeness is expected to be at least 90 percent. The assessment of completeness will require professional judgment to determine data usability for intended purposes.

1.15 Corrective Action

Corrective actions are required when field or analytical data are not within the objectives specified in this QAPP, or the SMP. Corrective actions include procedures to promptly investigate, document, evaluate, and correct data collection and/or analytical procedures. Field and laboratory corrective action procedures for this project are described below.

- **Field Procedures** - When conducting fieldwork, if a condition is noted that would have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action implemented will be documented as a memo to the project file and reported to the Project Manager.

  Examples of situations, which would require corrective actions, are provided below:

  - Protocols as defined by the QAPP and the RAWP have not been followed;
  - Equipment is not in proper working order or properly calibrated;
  - QC requirements have not been met; and

- Issues resulting from performance or systems audits.

Project field personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

- **Laboratory Procedures -** In the laboratory, when a condition is noted to have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action to be taken will be documented, and reported to the QAO.

  Corrective action may be initiated, at a minimum, under the following conditions:

  - Specific laboratory analytical protocols have not been followed;
  - Predetermined data acceptance standards are not obtained;
  - Equipment is not in proper working order or calibrated;
  - Sample and test results are not completely traceable;
  - QC requirements have not been met; and,
  - Issues resulting from performance or systems audits.

  Laboratory personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

1.16 Quality Assurance Reports and Management

- **Internal Reporting -** The analytical laboratory will submit analytical reports using NYSDEC ASP (2005), Category B requirements. The analytical reports will be submitted to the data validator for review. Supporting data (i.e., historic data, related field or laboratory data) will also be reviewed to evaluate data quality, as appropriate. The Quality Assurance Officer will incorporate results of data validation reports (if any) and assessments of data usability into a summary report. This report will be filed in the project file and will include the following:

  - Assessment of data accuracy, precision, and completeness for field & laboratory data;
  - Results of the performance and systems audits;
  - Significant QA/AC problems, solutions, corrections, and potential consequences;
  - Analytical data validation report; and
  - Data usability report.

- **Reporting** – The Final Engineering Report will contain a separate QA/QC section summarizing the quality of data collected and/or used as appropriate to the project DQOs. The QAO will prepare the QA/QC summaries using reports and memoranda documenting the data assessment and validation.

APPENDIX I
GROUNDWATER SAMPLING LOG

Groundwater Sampling Log
Courtlandt Crescent
383 East 162nd Street
Bronx, New York
BCP#C203058

Well ID	Date	Well Integrity	Depth to Water (Feet)	Depth to Bottom (Feet)	Amount Purged (Gallons)	Sample Time	pH	Temperature (° Celsius)	Conductivity (ms/cm)	Oxygen/Reduction Potential (mv)	Dissolved Oxygen (mg/L)
MW-5											
MW-6											
MW-7											
MW-8											
MW-9											

Comments:

APPENDIX J
REVISED INSPECTION FORMS

Revised EC/IC and Site-Wide Inspection Check List
Courtlandt Crescent
383 East 162nd Street
Bronx, New York
BCP Site# C203058
Date of Inspection: _____
Inspector Name: _____

Compliances to be Addressed	Comments
Provide an evaluation of the condition and continued effectiveness of engineering controls (foundation walls/slabs, passive SSDS, vapor barrier, and concrete sidewalks).	
Are all aboveground portions of passive venting system, including all pipe penetrations, pipe taps for gauges and sample ports, and roof-mounted components such as pipe couplings and rain cap, intact and free of any sign of breaches that would constitute a short circuit of the vapor pathway prior to the exhaust stack?	
Are all institutional controls, including Site usage in compliance?	
What are the general Site conditions?	
Are Site management activities being conducted including, confirmation sampling and a health and safety inspection?	
Are all Site records up to date?	
Does Site access remain available to maintain engineering controls?	
Are all permits and schedules included in the Operation and Maintenance Plan in Compliance?	